



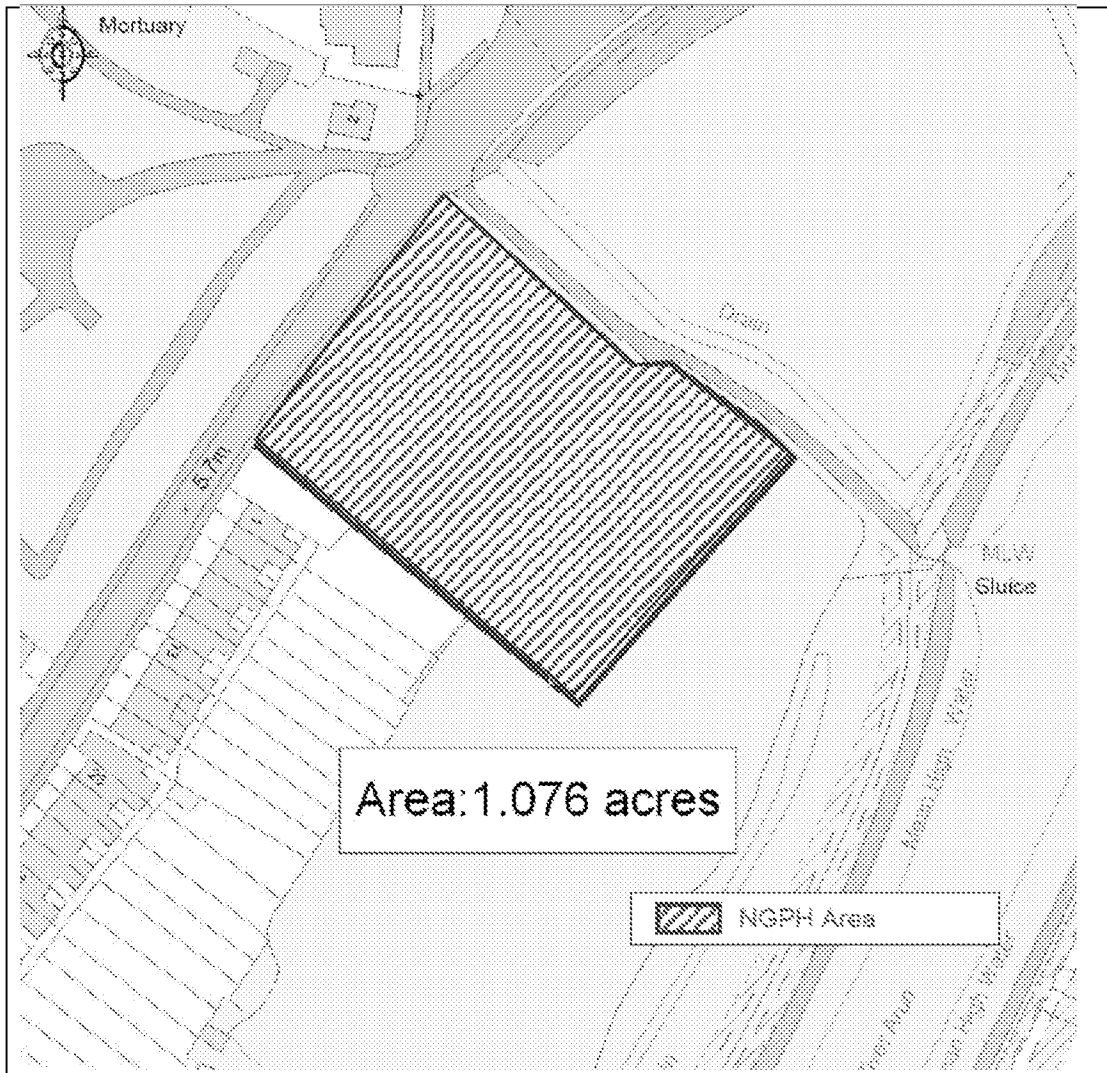
FORD ROAD, ARUNDEL  
NATIONAL GRID PROPERTY  
HOLDINGS

R1820/21/5111

REMEDIATION VERIFICATION  
REPORT

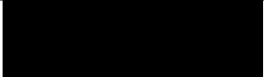
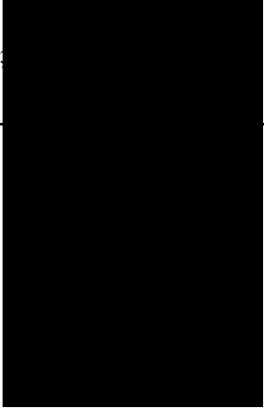
REV 1

SEPTEMBER 2021



|                                  |                                                      |                               |                     |
|----------------------------------|------------------------------------------------------|-------------------------------|---------------------|
| Site Address:                    | Ford Road, Arundel,<br>West Sussex BN18<br>9DX       | NGP Document<br>Tracking Code |                     |
| Report Title                     | Ford Road, Arundel – Remediation Verification Report |                               |                     |
| Report Type:                     | Contamination                                        | Retention Period              |                     |
| Site Code                        | 2551                                                 | Author (Company)              | Celtic Technologies |
| Report Date                      | September 2021                                       | Factual/Interpretative        | Factual             |
| Draft / Final                    | Draft                                                | H & S File?                   | Yes                 |
| Work Stage                       | Remediation                                          |                               |                     |
| Brief description of<br>contents | Remediation verification data.                       |                               |                     |
| Access Permitted                 | NGP Land<br>Regeneration Team                        | NGP Contact                   | Samantha Rendell    |



|                               |                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Client:</b>                | <b>National Grid Property Holdings</b>                                                                 |
| <b>Report Number:</b>         | <b>R1820/21/5111</b>                                                                                   |
| <b>Report Title:</b>          | <b>Ford Road, Arundel<br/>Remediation Verification Report</b>                                          |
| <b>Report Status:</b>         | <b>Rev 1</b>                                                                                           |
| <b>Author(s):</b>             | <b>S. Gronow</b>                                                                                       |
| <b>(Signature &amp; Date)</b> | <b>14.09.21</b><br>  |
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| <b>(Signature &amp; Date)</b> | <b>14.09.21</b><br>  |
| <b>QA Approved:</b>           | <b>M. Barrow</b>                                                                                       |
| <b>(Signature &amp; Date)</b> | <b>14.09.21</b><br> |

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The report is only valid when it is used in its entirety.

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## **1.0 INTRODUCTION AND OBJECTIVES**

Celtic EnGlobe (Celtic) has been commissioned by National Grid Property Holdings (NGPH) to produce a verification report of the remediation works undertaken by Celtic at the former Gasworks Site, Ford Road, Arundel, West Sussex (the 'site'). The location of the site is shown on Drawing D1820/5111/A1, Appendix A.

The site has a long history of town gas production and as a result of its historical use, a legacy of soil and groundwater contamination was present along with remnant in-ground foundations/obstruction associated with former process buildings/plant. Various investigations have been undertaken at the site, together with a phase of risk mitigation design, leading to a 'Remediation Implementation and Verification Plan' (report ref, R1820/21/5045 rev2, by Celtic March 2021) being produced and agreed with the regulators as part of planning application ref: AB/45/21/PL. The primary objective of the remediation works was to render the site suitable for 'Commercial Open Storage' use.

This Verification Report is required to satisfy condition 4 of the Decision Notice for the planning application. In addition, Celtic produced a 'Construction Management Plan' (report ref: R1820/21/5089 rev0), June 2021 detailing the management aspects to be carried out and Condition 6 of the Decision Notice required that works proceeded in accordance with this document. This Verification Report will therefore demonstrate that this has been complied with. The works were also undertaken in line with the CL:AIRE Definition of Waste: Development Industry Code of Practice, 2011 (DoWCoP) and this report will also provide sufficient data and records to demonstrate that site originating materials have been suitably re-used on-site in accordance with the materials management plan and DoWCoP requirements.

### **1.1 Site Details**

The site is situated approximately 40 m northwest of the River Arun. The site is owned by NGPH, is currently unoccupied and comprises secure vacant land. The site is an approximately rectangular shaped area of land covering approximately 0.44 hectares (Ha). The site has a postal address of Former Holder Station, Ford Road, Arundel BN18 9DX and is located at approximate National Grid Reference 501308E, 106749N.

The site can be accessed from Ford Road off an access track which runs along the north-eastern site boundary. Two pairs of secure metal gates allow access to the site. The original pair are located approximately two thirds of the way along the access track and an additional pair, which are situated closer to Ford Road and were constructed as part of the remediation works, to allow suitable access to the site for heavy goods vehicles (HGVs).

An electricity sub-station is located on the north-eastern site boundary adjacent to the original site entrance. No other above ground structures or buildings are present on the site.

The site gently slopes from northwest to southeast with an approximate elevation of 2.5 m above ordnance datum (mAOD) in the southeast rising to approximately 4 mAOD in the northwest. The site is generally level with surrounding land, except for residential properties to the west of the site which are raised above the site level by approximately 2 m. The pre-works site surface comprised approximately 15% tarmac, with the remainder comprising of either gravel, wood chippings or bare earth. The post works surface comprises approximately 10% tarmac, with the remainder comprising a

'Type 1' capping layer. Chain-link fencing forms the site boundary and secures the site from unauthorised access.

Site location and surrounding areas are presented in Appendix A of this report (Drawing D1820/5111/A1).

## **1.2 Neighbouring Land**

The site is surrounded by a combination of residential properties, grazing land and a cemetery as follows:

- Southwest: Residential houses with gardens;
- Southeast: Private grazing land with the River Arun behind;
- Northwest: Ford Road, beyond which is a cemetery; and
- Northeast: an access track leading off Ford Road, beyond which is a small surface water drain (which runs towards the River Arun via a sluice gate), and private grazing land.

## **1.3 Historical Development**

The site was operated as a gasworks from at least 1840, expanding in the west circa 1899, and in the south and southeast in circa 1937. It is understood that the gasworks continued operation until the mid-20<sup>th</sup> century.

The historical features are denoted on Drawing D1820/5111/A2, Appendix A.

In summary, the historical gasworks structures comprised up to 4 No. gasholders, a Retort House, including chimney/ tank, a Boiler House, condensers, governor compound, liquor/ tar tanks, and associated offices and stores.

The gasworks structures were widespread across the site, however, they are concentrated in the northeastern corner, where two of the four former gasholders were located, along with the retort house, including chimney and the liquor/ tar tank.

## **1.4 Previous Investigations at the Site**

The following reports (redacted to remove interpretative information) have been provided to Celtic by NGPH and these reports contain background information detailing ground conditions, hydrogeology, contamination testing and previous phases of works:

- British Gas Environmental Liability Report, Report ref. E5347/LR860.NL/gp, Atkins April 1994;
- Environmental Assessment Site Investigation, Final Factual Report, Report ref. A71430/GTG.20000078/R002rev1/December2000, Atkins December 2000;
- Environmental Groundwater Monitoring Letter Report, Ford Road, Arundel, Mentor No. 015162, Report ref. A71430/GTG.20000078/Arundel/R004rev0/mg, Atkins July 2001;

- Ford Road, Arundel (Site No. 2551) Site Investigation Report, Report ref. 5104362/GTG.20100923/Arundel2011/R001v0, Atkins October 2011;
- Detailed Quantitative Risk Assessment, Report Ref. 5104362/GTG.20100923/2012/R002v1, Atkins October 2012;
- Site Information, Report Ref. 5156428/R001/V4, Atkins July 2019; and
- Supplementary Site Investigation, Factual Report, Ford Road, Arundel, Report ref. R1820/20/5043, Celtic Technologies Ltd. December 2020.

The locations of intrusive investigation trial pits/trenches, boreholes, vapour monitoring positions etc. are shown on Drawing D1820/5111/A2, Appendix A.

## 1.5 Project Key Personnel

The key personnel and organisations involved in the remediation project are included within Table 1.

**Table 1 – Key Contacts**

| Name             | Role / Responsibility                     | Organisation                    |
|------------------|-------------------------------------------|---------------------------------|
| Sam Rendell      | Land Regeneration Manager – Client        | National Grid Property Holdings |
| Lucy Hay         | NEC3 Project Manager / Principal Designer | Atkins                          |
| Steve Gronow     | Principal Contractor Project Manager      | Celtic                          |
| Christian Davies | Site Manager                              | Celtic                          |
| Teja Hayrer      | CDM Advisor                               | RSK                             |
| Sion Yao         | Cost Consultant                           | AECOM                           |
| Charlotte McGill | Community Relations Advisor               | Grayling                        |
| Neil Crowther    | Head of Planning                          | Arun District Council           |
| Sub-Contractor   | Role                                      |                                 |
| BPH Plant        | Plant Hire                                |                                 |
| Avoia Maa        | Utilities Surveying                       |                                 |
| EnQuin           | Asbestos Consultant                       |                                 |
| i2 Analytical    | Laboratory Chemical Analysis              |                                 |

## 1.6 Geology, Hydrogeology and Hydrology

### 1.6.1 Geology

The geology in the vicinity of the site is identified on the British Geological Survey (BGS) Sheet 317, Chichester and is understood to comprise the Spetisbury Chalk Member overlain by 2 to 5 m of clay, silt, sand and gravel alluvium (Raised Marine Deposits) associated with the River Arun.

A summary of the geology beneath the site, based upon published geology and the results of previous intrusive investigations, is provided in Table 2.

**Table 2 – Summary of Published and Previously Identified Geology**

| Stratum                                                                                                                                                                              | Description                                                                                                                                                                                                                   | Proven thickness range m | Additional Detail                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------|
| Made Ground                                                                                                                                                                          | Variable across the site, but generally comprised firm, sandy, gravelly clay and fine to medium, gravelly, clayey sand with frequent concrete, brick, chalk and flint gravels and fragments of clinker, coal, wood and metal. | 0.0 – 2.7                | Greatest depths in the areas that were recorded to be formerly occupied by gas holders and pipes.* |
| Alluvium                                                                                                                                                                             | Stiff, silty, very gravelly clay or clayey gravel.                                                                                                                                                                            | 0.7 – 5.1                | Locally absent                                                                                     |
| Chalk (Spetisbury Chalk)                                                                                                                                                             | Structureless fine chalk composed of gravels and chalk cobbles in a soft off white/grey clay matrix.                                                                                                                          | >3.8 – >7.6              | Base not proven                                                                                    |
| *Note: A reported depth of Made Ground at BH202 (7.2 m) is very thick compared to the rest of the site, although the borehole log notes that 'possibly becoming natural below 4.5 m. |                                                                                                                                                                                                                               |                          |                                                                                                    |

The encountered thickness of the Raised Marine Deposits is relatively thin, locally absent, in the northern site area, with the Chalk relatively close to the surface. This is consistent with the published geology that shows the Raised Marine Deposits thinning to the west.

The Spetisbury Chalk Member is the uppermost Chalk unit; this means the site is underlain by a significant thickness of Chalk strata (i.e. the whole Chalk sequence believed to be 250 m to 300 m thick). The shallow Chalk is described as *Structureless fine chalk composed of gravels and chalk cobbles in a soft off-white/grey clay matrix*. Silts/clays of the Lambeth Group outcrop to the south and west (where they overlay the Chalk).

### 1.6.2 Hydrogeology

The hydrogeology of the area and site is detailed in previous investigation reports and a summary of the information is provided below.

The site has a very shallow groundwater that is typically encountered at depths in the range 1 m to 3 m below ground level (mbgl); the water table has been well documented by the site investigation works to be heavily influenced by tidal fluctuations in the River Arun (discussed further below).

The Raised Marine Deposits are classified by the EA as a Secondary A Superficial Aquifer, with the Chalk classified as a Principal Bedrock Aquifer; the site does not lie within any EA defined groundwater source protection zones. The closest licensed groundwater abstraction is approximately 0.75 km to the northwest; this abstraction appears to be associated with a trout fish farm and is likely to be drawing groundwater from the Chalk.

The Chalk aquifer is locally partly confined by the Raised Marine Deposits, which are generally clayey, but is unconfined to the west and northwest of the site. Further south the Lambeth strata confine the chalk. The drainage ditches to the south of the site are likely to be partly perched on the Raised Marine Deposits and are probably hydraulically isolated from the Chalk aquifer, although some of the ditches do show some tidal fluctuation.

The net direction of near surface groundwater flow below the site is easterly with shallow groundwater discharging to the River Arun; groundwater enters the site from the west/northwest.

Surface infiltration down through the site will contribute some additional flow to the groundwater exiting the site eastwards towards the Arun.

### 1.6.3 Hydrology

There is a 300 mm diameter concrete surface water drain bisecting the site running from the southwest to the northeast. The drain is approximately 1.3 m deep and there are two access chambers on-site. The drain discharges to a surface water ditch to the northeast of the site. The drainage ditch is located approximately 5 m from the northeastern site boundary and flows in a south easterly direction discharging into the River Arun via a sluice gate.

The River Arun is located approximately 40 m southeast of the site. The river is tidally influenced in the local area and generally flows in a southerly direction discharging to the English Channel at Littlehampton ~6 km south of the site (note: river flow can be reversed when the tide is rising). The river is tidal for more than 20 km from the coast. The tidal channel is ~35 m wide at the location of the site. The River Arun at Arundel is within the 'Arun Lower' EA operational catchment and is classified as a 'transitional waterbody' at Arundel, which reflects its estuarine tidal nature.

The land to the west of Ford Road is at a higher elevation and ground levels then rise steadily to the northwest. The low-level plain along the Arun west bank is drained by a series of ditches. One of these flows southeast close to the northeastern site boundary and this ditch has a 'sluice gate' where it discharges into the River Arun. Another ditch (flowing south), originates between the site and the river and joins a network of other ditches to the south of the site. The ditch to the north may have been a natural stream (based on OS contour arrangement); the ditches to the south are probably mainly artificial features.

Away from the river, a network of generally southerly flowing streams drain the land to the south and east of the site where the Lambeth Group and London Clay strata overlie the Chalk; further north, where the Chalk outcrops (or is present below superficial head deposits), there are few surface water features.

The long-term water level of the Arun at Arundel Queen St Bridge (0.7 km upstream) is generally between -0.4 and 3.2 mAOD. The highest identified recorded level in Arundel is 3.7 mAOD (December 2013).

Much of the southern/western site areas are currently within an EA defined Flood Zone 3 for planning purposes, with a limited area in Flood Zone 2 and the remainder in Flood Zone 1 (viewed online January 2021 at <https://flood-map-for-planning.service.gov.uk>). There is a flood defence berm along the western Arun bank (marked on the flood mapping).

### 1.7 Identified Contamination

The various investigations carried out to date generally identified widespread low-level gasworks contamination within the Made Ground, with more elevated concentrations recorded towards the north and east of the site associated with the identified former gasworks features. Further deeper contamination encountered within the Alluvium and Chalk has also been found to be focused in the northeastern area of site where sources of non aqueous phase liquid (NAPL) may be present. A summary of the identified contamination is provided below:



- Inorganic and organic contaminated shallow soils across the whole of the site; and
- Hydrocarbon / NAPL impacted soils and perched water in the gasworks process areas in and around former structures (mainly in the north and east, but with localised impact in other areas of the site).

The relevant pollutant linkages (RPLs) through which identified contaminants of concern could impact upon sensitive human health and controlled water receptors are summarised within Tables 3 and 4.

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**Table 3 – Human Health RPLs and Preliminary Risk Evaluation**

| Source Materials<br>Averaging Areas<br>On-Site Uses<br>Workers & Residents | Human Health RPLs                            | Consequence                              | Likelihood | Preliminary Risk<br>Evaluation | Detailed Risk Assessment Approach   |
|----------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|------------|--------------------------------|-------------------------------------|
| Verified Cover                                                             | Surface cover<br>(Soils and hardstand)       | Not Required: Not a contamination source |            |                                |                                     |
| Soil                                                                       | Outdoor vapour inhalation                    | Mild                                     | Low        | Low Risk                       | CLEA Soil & Vapour Source Modelling |
| Groundwater GW                                                             |                                              | Mild                                     | Low        | Low Risk                       | CLEA Groundwater Source Modelling   |
| Residential Use<br>Immediately Adjacent                                    |                                              |                                          |            |                                |                                     |
| Verified Cover                                                             | Surface cover<br>(Soils and hardstand)       | Not Required: Not a contamination source |            |                                |                                     |
| Boundary Zone<br>Soil-B & Soil-VapB                                        | Indoor vapour inhalation (lateral migration) | Medium                                   | Likely     | Moderate Risk                  | CLEA Soil & Vapour Source Modelling |
| Boundary Zone<br>Groundwater GW-B                                          | Outdoor vapour inhalation                    | Medium                                   | Likely     | Moderate Risk                  | CLEA Groundwater Source Modelling   |

**Table 4 – Controlled Waters RPLs and Preliminary Risk Evaluation**

| Source Materials<br>Averaging Areas   | Controlled Waters RPLs                                   | Consequence                              | Likelihood | Preliminary Risk<br>Evaluation | Detailed Risk Assessment Approach |
|---------------------------------------|----------------------------------------------------------|------------------------------------------|------------|--------------------------------|-----------------------------------|
| Verified Cover                        | Surface cover<br>(Soils and hardstand)                   | Not Required: Not a contamination source |            |                                |                                   |
| Soil / Soil Leachate<br>Soil & Soil-L | Soil Leaching to groundwater<br>Lateral groundwater flow | Medium                                   | Likely     | Moderate Risk                  | Calculate SOIL/SOIL-L SACs        |
| Groundwater GW                        | Lateral groundwater flow                                 | Medium                                   | Likely     | Moderate Risk                  | Calculate GW SACs                 |

## **2.0 REMEDIATION WORKS UNDERTAKEN**

### **2.1 Preliminary Works**

The following preliminary works were undertaken:

- Submission of Planning Application for remedial works (AB/45/21/PL);
- Regulatory engagement and agreement of the Remediation Implementation and Verification Report (R1820/21/5045 rev2);
- Preparation of Construction Phase Health and Safety Plan in line with Construction (Design and Management) Regulations 2015;
- Discussion with utility providers to agree any protection/mitigation requirements to protect existing services;
- Discussion with sewerage undertakers to agree a suitable foul sewer discharge consent;
- EA Permit (EPR/AP3195FG) deployment to cover remedial treatment activities;
- Completion of materials management plan (MMP) in compliance with CL:AIRE Definition of Waste: Development Industry Code of Practice (DoWCoP) and declaration by Qualified Person;
- Production and agreement of Construction Management Plan (Report ref: R1820/21/5049 rev0); and
- Application and agreement of Section 61 (Control of Pollution Act 194) consent for works on construction sites.

Copies of all regulatory correspondence is included within Appendix B.

### **2.2 Initial Site Set-up / Compound and Pedestrian Access Routes**

Celtic mobilised to site on 7<sup>th</sup> June 2021 and established a site compound and welfare area including offices, canteen, decontamination unit / changing room, toilets, stores. The site compound included parking and barrier fencing was erected to segregate pedestrians from vehicles. Additional CCTV security measures were also established.

The site compound was situated on the existing tarmac hardstand in the eastern corner of the site, with access maintained via the existing gates. An additional set of access gates were established in the northeastern corner to allow appropriate site access for heavy goods vehicles. Traffic management during the project was controlled with access gates being kept closed when not in use. Suitable site signage was established around the site and details of the works communicated via site notices and local letter drops.

A utilities survey was undertaken across site with known and potential services being sprayed up on-site and surveyed for inclusion on site plans. A copy of the utilities survey is provided on drawing D1820/5111/A3.

## 2.3 Remediated Areas

The site was notionally divided into four areas, according to historic usage, risk factors and likely ground conditions to be encountered. The site was further divided into nominal 10 m x 10 m grids to aid the tracking of material movements and recording of validation data. The designated remediation areas and grid plan are illustrated on Drawing D1820/5111/A4, Appendix A.

Due to the on-site surface water drain and vulnerability to pollution, Celtic allowed a 1 m easement on either side of the drain. No excavation works were undertaken within this easement area in order to minimise the risk of damage and potential contaminant migration to the surface water receptors. A designated vehicular crossing point was established to provide a suitable running layer for vehicular access.

Photographs of the works progress are presented with Appendix C.

### 2.3.1 Area 1 (Orange Hatch) – Approximately 1,200 m<sup>2</sup>

Area 1 formerly accommodated the gas governor (feature no. 19 on D1820/5111/A2, Appendix A), which comprised a rectangular area between approx. 0.6 to 0.9 m higher than the surrounding area. This raised area was initially reduced to the surrounding ground level with material being stockpiled adjacently and tested for its suitability for re-use. No obvious visual or olfactory signs of contamination were present within this material.

Below ground cast iron pipework and concrete foundations, which were known to be present in this area, were then excavated and segregated. Two of the concrete structures contained old car tyres, which were segregated and loaded into a skip for off-site disposal. Small amounts of perched water were present within some of these structures but at insufficient quantities to warrant any de-watering. A small amount (<0.5 m<sup>3</sup>) of black stained material was also evident within one structure and was segregated and stockpiled on an impermeable membrane for later treatment.

The existing concrete gasholder base (feature no. 15 on D1820/5111/A2, Appendix A) was found to be at approximately 2 mAOD and was left in-situ. Excavation around the base (as well as historic investigation data) indicated that the slab was on top of natural alluvium with no obvious visual or olfactory signs of contamination.

Following receipt of laboratory analysis of stockpile materials originating from this area, the materials were re-used and levelled out across the whole of Area 1.

Existing redundant surface water pipework connections were found to be present at the locations of the surface water drain access chambers. A 100 mm pipe was found to enter each chamber from the south (originating from the former gas governor structures within Area 1). The pipework was removed during the excavations in Area 1 and the remaining stubs were grouted up with concrete to prevent any pathway potential.

### 2.3.2 Area 2 (Yellow Hatch) – Approximately 220 m<sup>2</sup>

Area 2 represents a 5 m wide strip along the southwest boundary of the site, where more stringent remedial criteria was applied due to its location adjacent to neighbouring residential properties. Made ground was found to be approximately 1.2 m thick across this area. No obvious visual or olfactory signs

of contamination were present within this made ground material and it was sampled and scheduled for laboratory testing before being replaced and backfilled within Area 2. The subsequent analysis results confirmed its acceptability.

### **2.3.3 Area 3 (Green Hatch) – Approximately 1,000 m<sup>2</sup>**

Area 3 accommodates a shallow infilled gasholder base (feature no. 8 on D1820/5111/A2, Appendix A), which remains in-situ at approximately 2.5 mAOD. Excavation around the base (as well as historic investigation data) indicated that the slab was on top of natural alluvium with no obvious visual or olfactory signs of contamination. A small amount (<0.5 m<sup>3</sup>) of black stained material was encountered on top of the concrete slab at its northern edge and this material was segregated and stockpiled for subsequent treatment.

A square brick foundation, approximately 1 m<sup>2</sup> was encountered on the northern edge of the former gasholder base and was removed down to the level of the gasholder base. The remaining foundation has been left in-situ as there was no obvious visual or olfactory signs of contamination.

The remaining part of Area 3 was excavated to prove natural ground, which was approximately 1.2 m below ground level and the excavated made ground materials were subject to sampling and testing to demonstrate suitability for re-use. The materials were re-used within the same area and subsequent analysis results confirmed its acceptability.

### **2.3.4 Area 4 (Red Hatch) – Approximately 1,300 m<sup>2</sup>**

Area 4, representing the northeast of the site, was identified as accommodating the most gasworks infrastructure and contamination at the site. Prior to the main excavation works, the area designated to accommodate the water treatment plant (Grid ref. F4) was excavated and made ground materials checked for visual and olfactory evidence of contamination. A small amount of hydrocarbon contaminated material (~0.5 m<sup>3</sup>) was encountered, segregated and stockpiled for later treatment. In addition, several cast iron former gas pipes were encountered and removed. Pipework exiting the site on the northeast boundary was surveyed and are included on drawing D1820/5111/A7, Appendix A. Natural alluvial material was found at approximately 1.7 mAOD.

The excavation works then re-commenced in Area 4, following the completion of Area 3, in grid reference D5 and E5 and were extended to approximately 1.5 to 1.7 mbgl, equating to approximately 1.2 to 1.4 mAOD. Cast iron pipes were also removed from E5. Excavated material exhibited some visual evidence of contamination within D5 and was therefore segregated and subjected to stabilisation treatment prior to being placed back into this area.

Excavation cells D1 and E1 (as shown on D1820/5111/A5, Appendix A) then commenced and progressed southwards towards D4 and E4. A former below ground gasholder (identified as feature no. 4 on D1820/5111/A2, Appendix A) was known to be present in this area and was found to be backfilled with much tar-stained timber, which was deemed unsuitable for on-site treatment. These timber materials were excavated and stockpiled separately on an impermeable membrane and covered over to minimise fugitive emissions and risk of cross contamination. The remaining materials from the gasholder were excavated and temporarily stockpiled adjacent to the gasholder. The base of the gasholder was found to be at approximately 1.8 mAOD and comprised a clay dumpling on top of a concrete base. The gasholder walls were constructed of brick and were found to be already partially demolished. Excavation works further reduced the brick walls to a level of approximately 2.8 mAOD. The excavated materials were put back into the gasholder together with stabilisation additives, which

were then mixed in and levelled off. Areas D2, E1 and E2, outside of the gasholder, were further excavated to approximately 0.8 mAOD, as there was much visual evidence of contamination. There were also several brick walls within these areas, which remain in-situ between approximately 0.8 to 2.8 mAOD, and their locations are illustrated on drawing D1820/5111/A7 within Appendix A. The excavated materials were subject to stabilisation prior to being backfilled across these areas. Excavation works in E1 also exposed and damaged an unknown pot-ended gas pipe, which was immediately repaired following a call-out to Southern Gas Networks (SGN). The gas service was found to be live and comprised a 25 mm diameter polyethylene (PE) with a pot-end attached from a historic disconnection. The pipe was not shown on previous utility plans or on the SGN database. Celtic recorded its position, which is illustrated on drawing D1820/5111/A7, Appendix A.

Areas D3 and D4 were found to be less impacted, with the made ground not exhibiting any significant signs of contamination. Areas E3 and E4 contained a lot of foundations (which were removed) and an area of hydrocarbon contamination, which extended to approximately 3 mbgl (approx. 0.4 mAOD). Contaminated materials were subject to stabilisation and replaced back into these excavation voids.

The final section of excavation was then undertaken comprising F1 to F3. A further circular former below ground gasholder structure (feature no. 1 on D1820/5111/A2, Appendix A) was known to be present within F1 and this was found to comprise a brick structure approximately 6 m in diameter extending approximately 2.5 mbgl (approximately 1.2 mAOD). Materials within this structure were heavily impacted with much tar staining and were subject to stabilisation treatment. Areas F2 and F3 were less impacted with excavations extending to approximately 2.2 mAOD. Cast iron pipes were also removed from these areas to mitigate any future pathway potential.

## **2.4 Stabilisation Treatment**

Stabilisation treatment was identified as the most effective and appropriate technique to deploy at the site. The aim of the treatment was to reduce the mobility of the contaminants of concern to mitigate potential risk to controlled waters. Ordinary Portland cement (OPC) and pulverized fuel ash (PFA) were the chosen additives to be used at the site, following a bench scale feasibility test. The amount of additives chosen to be used for the treatment works were 4% OPC and 8% PFA.

Mechanical segregation of non-treatable material such as wood, metal, plastic and oversize concrete/brick/masonry was undertaken. The treatment works were then undertaken at site by mixing the contaminated soils with the stabilisation additives and leaving them to harden in-situ. Following excavation, the volumes of materials requiring treatment, together with the necessary tonnage of OPC and PFA were calculated. The OPC was mixed with water on-site using a large grout pan and delivered to the treatment area using hydraulic pumps and pipework. The additives were thoroughly mixed with the contaminated soils and levelled off in-situ to harden.

Samples were retrieved on a minimum of one sample per 250 m<sup>3</sup> basis and subject to strength, durability and leachability testing. The assessment of sample durability and leaching characteristics were made in accordance with EA NEN 7375 and the derived leaching rates compared to the site's remedial criteria. The stabilisation tank test data is presented within Appendix D (to follow).

A summary of the materials, which were treated during the works, including their source, volume and re-use area are included within Table 5. The stabilised materials were typically capped with a minimum

of 0.5 m of (made ground) material which has been subject to validation testing against the site remedial criteria.

**Table 5 – Stabilisation Summary**

| Date       | Batch # | Sample Ref | Excavated Grid Ref | Backfilled Grid Ref | Depth placed (mbgl) | Volume of soil treated (m <sup>3</sup> ) | OPC added (tonnes) | PFA added (tonnes) |
|------------|---------|------------|--------------------|---------------------|---------------------|------------------------------------------|--------------------|--------------------|
| 13/07/2021 | 1       |            | D1                 | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 13/07/2021 | 2       |            | D1                 | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 13/07/2021 | 3       | Batch 3    | D1                 | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 13/07/2021 | 4       |            | D1                 | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 13/07/2021 | 5       |            | D1                 | D5                  | 1.7-1.2             | 20.00                                    | 1.50               | 3.00               |
| 14/07/2021 | 6       |            | E3/E4              | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 14/07/2021 | 7       |            | E3/E4              | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 14/07/2021 | 8       |            | E3/E4              | D1                  | 2.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 15/07/2021 | 9       |            | D2                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 15/07/2021 | 10      | Batch 10   | D2                 | E2                  | 3.0-0.5             | 20.00                                    | 1.50               | 3.00               |
| 15/07/2021 | 11      |            | E2                 | D2                  | 2.5-1.0             | 40.00                                    | 3.00               | 6.00               |
| 16/07/2021 | 12      |            | F2                 | D2                  | 2.5-1.0             | 40.00                                    | 3.00               | 6.00               |
| 16/07/2021 | 13      |            | F2                 | F2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 19/07/2021 | 14      |            | E2                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 19/07/2021 | 15      |            | F2                 | F2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 16      | Batch 16   | D2                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 17      |            | D2                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 18      |            | D2                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 19      |            | F1                 | E2                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 20      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 20/07/2021 | 21      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 22      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 23      |            | E1                 | E1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 24      | Batch 24   | E1                 | E1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 25      |            | E1/F1              | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 26      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 21/07/2021 | 27      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 22/07/2021 | 28      | Batch 28   | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |
| 22/07/2021 | 29      |            | F1                 | F1                  | 3.0-0.5             | 40.00                                    | 3.00               | 6.00               |

## 2.5 Volumes of Materials

Based on the actual remedial areas and depths of excavation, the volumes that were excavated, treated, re-used, imported and disposed off-site are presented within Table 6.

**Table 6 – Actual Volumes of Materials**

| Source               | Approximate Volume (m <sup>3</sup> ) |
|----------------------|--------------------------------------|
| Area 1 Excavation    | 1,000                                |
| Area 2 Excavation    | 264                                  |
| Area 3 Excavation    | 1,200                                |
| Area 4 Excavation    | 2,300                                |
| Hardstand materials  | 120                                  |
| S/S Treatment Volume | 1,120                                |
| Re-use on site       | 4,640                                |
| Disposal off-site    | 124                                  |
| Capping Layer        | 1,210 (1,966 tonnes)                 |

## 2.6 Remedial Criteria

As detailed within the RIP report, soil and soil leachate remedial criteria for human health and controlled waters were derived and are summarised in Tables 7 and 8.

**Table 7 – Soil Remedial Criteria in mg/kg**

| Substance                  | Site Wide<br>Unsaturated Zone Soils | Boundary Strip (Area 2)<br>Unsaturated Zone Soils |
|----------------------------|-------------------------------------|---------------------------------------------------|
| Sum $\Sigma$ TPH           | 5,000                               | 1,000                                             |
| TPH Aliphatic C5-C6        | Via $\Sigma$ TPH                    | 650                                               |
| TPH Aliphatics C8-C10      |                                     | 440                                               |
| TPH Aromatics C8-C10       |                                     | 500                                               |
| Benzene                    | 2,900                               | 4                                                 |
| Sum $\Sigma$ TEX           | Via $\Sigma$ TPH                    | 500                                               |
| Phenols                    | 1,200                               | 1,200                                             |
| Sum $\Sigma$ 16-PAH        | 5,000                               | 1,000                                             |
| Benzo[a]pyrene             | 92                                  | 92                                                |
| Fluoranthene               | 400                                 | 400                                               |
| Indeno[123-cd]pyrene       | 680                                 | 680                                               |
| Naphthalene                | 4,600                               | 260                                               |
| Easily Liberatable Cyanide | 250                                 | 250                                               |



**Table 8 – Leachate remedial criteria in mg/l**

| Substance                  | Site Wide<br>Porewater Criteria |
|----------------------------|---------------------------------|
| TPH Aliphatics C8-C10      | 2,500 <sup>(1)</sup>            |
| TPH Aliphatics C10-C12     | 4,300 <sup>(1)</sup>            |
| TPH Aromatic C8-C10        | 2,000 <sup>(1)</sup>            |
| TPH Aromatic C10-C12       | 2,000 <sup>(1)</sup>            |
| TPH Aromatic C12-C16       | 2,000 <sup>(1)</sup>            |
| TPH Aromatic C16-C21       | 2,000 <sup>(1)</sup>            |
| TPH Aromatic C21-C35       | 2,400 <sup>(1)</sup>            |
| TPH Aromatic C35-C44       | 2,400 <sup>(1)</sup>            |
| Benzene                    | 2,000 <sup>(1)</sup>            |
| Phenols                    | 1,600                           |
| Benzo[b]fluoranthene       | 6.9 <sup>(1)</sup>              |
| Benzo[k]fluoranthene       | 7.4 <sup>(1)</sup>              |
| Benzo[ghi]perylene         | 0.74 <sup>(1)</sup>             |
| Benzo[a]pyrene             | 0.041 <sup>(1)</sup>            |
| Fluoranthene               | 1.3 <sup>(1)</sup>              |
| Indeno[123-cd]pyrene       | 0.45 <sup>(1)</sup>             |
| Naphthalene                | 400 <sup>(1)</sup>              |
| Anthracene                 | 21 <sup>(1)</sup>               |
| Easily Liberatable Cyanide | 200                             |

(1) above theoretical saturation limits

## 2.7 Unexpected Contamination

There was no unexpected contamination encountered during the remedial works. It was expected that former gaswork structures would have been backfilled with typical gasworks wastes and this site was no exception. The tyres were probably the only exception, but these were not found to present any additional risk to human health or the wider environment; and were segregated and placed within a designated skip for off-site disposal. The tarry wood within the former gasholder structure (within Area 3) was the only other material, which could not be treated and this was segregated and appropriately stored on-site, prior to its off-site disposal.

## 2.8 Groundwater Treatment

A groundwater treatment system was established on-site to deal with any non-aqueous phase liquid (NAPL) and perched waters encountered during the remediation works. However, there was no NAPL recorded during any of the groundwater monitoring rounds and insufficient perched water to pump. A sump, comprising a 3 m long 600 mm diameter perforated pipe, was installed within the northeast area to further monitor and facilitate any NAPL recovery works if necessary. No NAPL was recorded within the sump and, on completion of the remediation works, the pipe was removed and the area backfilled. The small pockets of perched waters, which were found within the remnant structures, did not exhibit significant NAPL and were not of sufficient volume that they could be feasibly pumped out or treated. On completion of the treatment and backfill works, the groundwater treatment system was decommissioned and demobilised from site.

## **2.9 Asbestos Within Soils**

An asbestos risk assessment was undertaken as part of the initial health and safety documentation which deemed the works to be non-notifiable. During the works small fragments of asbestos bonded cement were encountered and was collected and double bagged, by appropriately trained (CAT B) operatives. Approximately 10 kg was collected and these materials were subsequently collected by a licensed waste contractor for appropriate off-site disposal. Waste transfer records can be found within Appendix E.

Asbestos reassurance air monitoring was undertaken throughout the remediation, with no discernible findings, and this data can be found within Appendix H.

## **2.10 Human Health Capping Layer**

Following remediation, all areas were backfilled with site won verified materials and covered using 300 mm of a 'Type 1' granular capping layer (sourced from Torr quarry, Somerset), overlying an orange geotextile alert barrier. Backfilled materials and capping layer were placed in appropriate layers and compacted to provide a minimum 'California Bearing Ratio' (CBR) value of 5% at top of capping. CBR tests were carried out using a 450 mm plate at a frequency of 1 test per 400 m<sup>2</sup>. This equated to 10 tests across site. The primary aim of the capping layer is to mitigate potential future risks to human health and nuisance exposure and the objectives are to:

- Reduce the potential for dust, vapour and odour emissions impacting on site neighbours;
- Prevent site workers and visitors from coming into direct dermal contact with residual soil contamination and mitigate ingestion and inhalation pathways; and
- Provide a surface which is suitable for the intended open storage end-use.

### **3.0 VERIFICATION DATA**

#### **3.1 Verification Test Plan**

The verification test plan was designed to provide a regime of testing to demonstrate:

- That residual contaminants meet the remedial criteria and do not pose an unacceptable risk to human health or the wider environment;
- That materials have been appropriately treated and that remedial criteria have been achieved;
- That only appropriate materials have been imported to site; and
- That site originating materials are suitable for re-use.

#### **3.2 Excavation Extents**

Verification sampling of excavation extents were undertaken on the following basis:

- Base of excavation where Made Ground remained below unsaturated zone (equivalent to high tide water table) at a frequency of 1 sample per 100 m<sup>2</sup>, generally equivalent to one sample per 10 m x 10 m grid or where gross contamination is present, at a frequency of one sample per 20 m<sup>2</sup>; and
- Boundary face of excavations at a frequency of 1 sample per 10 linear metres of excavation face.

Sample references used a format of the grid reference as a prefix and then the boundary orientation as a suffix. For example, the sample reference F1 NE would signify that the sample was retrieved from grid reference F1 and from the northeast boundary. A depth would also be attributed to the depth that the sample was retrieved from.

The verification sampling data is included within Appendix H. Samples were retrieved from the boundaries of all excavation works as illustrated on drawing D1820/5111/A5. A total of 27 samples were retrieved from the perimeter boundaries of excavation, with a further 10 samples retrieved from excavation boundaries along the on-site surface water drain to confirm residual concentrations in the vicinity of the drain. A further sample was retrieved from the base of E4 at 3 m depth due to the presence of residual Made Ground at the interface of the groundwater. All sample results were found to comply with the remedial criteria and visual observations found no significant contamination to be present at the site boundaries.

#### **3.3 Material Re-Use**

Verification sampling was undertaken on material re-use at a frequency of one sample per 100 m<sup>3</sup>.

Samples were sent for solid chemical analysis as per Table 10 and results compared against the remedial criteria in Table 7. Sample references used a format of the grid reference as a prefix and then the word re-use as a suffix. For example the sample reference 'C3 re-use' would be the representative sample retrieved from the material re-used within grid reference C3.

All material sampled and subsequently re-used on-site was found to comply with the remediation criteria. The works were undertaken in accordance with the declared materials management plan with no deviation requirements and in accordance with the CL:AIRE DoWCoP. The material re-use chemical analysis data is included within Appendix G.

### 3.4 S/S Treatment

In order to demonstrate that the stabilised soils meet the remedial targets for the site, samples of treated soil were recovered at a rate of 1 sample of 250 m<sup>3</sup> and allowed to cure for 28 days in moulds kept at ambient temperatures. Following curing, the samples were subject to leachability tank testing in order to demonstrate the post-stabilisation immobilisation of the contaminants of concern. Testing was also undertaken to demonstrate the strength and durability of the stabilised material.

Samples taken for validation purposes were recovered from the treated material after blending with S/S additives, prior to any initial set or hardening occurring. The stabilisation tank test data is presented within Appendix D (to follow).

### 3.5 Waste Disposal

Waste materials were disposed off-site to appropriately licensed facilities. A desk-top check of the disposal facilities Environmental Permits / Exemptions and waste carrier details was undertaken prior to the waste movements. A check was also undertaken by following a wagon to ensure it went to the appropriate destination. The standard industrial classification (SIC) code for these activities was 39.00 (Remediation activities and other waste management services). A summary of the waste disposed off-site is provided within Table 9 and waste documentation is included within Appendix F (Export Data).

**Table 9 – Summary of Waste Disposal**

| Waste Carrier                  | Waste Destination                                                                  | Type of Waste & EWC             | Volume / Tonnage                   |
|--------------------------------|------------------------------------------------------------------------------------|---------------------------------|------------------------------------|
| South Coast Skips<br>CBDU44059 | Ford, Arundel BN18 0BS<br>WP3095HU/V002                                            | Green Waste (vegetation) 200201 | 4 no. loads (91.8 m <sup>3</sup> ) |
| South Coast Skips<br>CBDU44059 | Ford, Arundel BN18 0BS<br>WP3095HU/V002                                            | Bricks / Concrete 170107        | 8 loads (80 m <sup>3</sup> )       |
| Matthews Sussex<br>CBDU147665  | Knepp Castle Estate WEX 197027                                                     | Bricks / Concrete 170107        | 2 loads (20 m <sup>3</sup> )       |
| Robert Hopkins<br>CBDU80960    | Bullock Street, West Midlands<br>B70 7HE ZP3527SL                                  | Tarry wood (hazardous) 200137   | 1 load (8 tonnes)                  |
| Shield CBDU96863               | Unit 6 Frobisher Industrial<br>Centre, Budds Lane, Romsey<br>SO51 0EZ EPR/HB3308XU | Asbestos (hazardous) 170605     | 10 kg                              |
| Norris CBDU89511               | Station Approach, Orpington<br>BR5 2NB KP3695HU/V002                               | Car tyres 160103                | 1 load (86 tyres)                  |
| Norris CBDU89511               | Station Approach, Orpington<br>BR5 2NB KP3695HU/V002                               | Mixed construction 160103       | 6.76 tonnes                        |
| RM Pettett<br>CBDU85928        | Jury Lane, Chichester PO20 7PX<br>AB3503ZA/T001                                    | Metals                          | 5.5 tonnes                         |

### **3.6 Capping Layer**

Samples were recovered from imported materials used for the capping layer at a frequency of one sample per 100 m<sup>3</sup> with a minimum of three samples per source. Samples were sent for solid chemical analysis as per Table 10 and results compared against the remedial criteria in Table 7. A total of fourteen samples were retrieved and all results were found to comply with the remediation criteria.

The capping layer was also subject to on-site 450 mm plate CBR tests at a frequency of one test per 400 m<sup>2</sup>, with an aim to achieve a minimum CBR value of 5%. Ten tests were undertaken, and all achieved the minimum 5% requirement.

The capping layer sampling data and plate bearing test results are included within Appendix G.

### **3.7 Groundwater Quality**

Groundwater monitoring was undertaken prior to the start of excavation works, during excavation works and following remediation works, from the available on-site monitoring boreholes, to ensure groundwater concentrations of contaminants of concern do not present an unacceptable risk to controlled waters. Samples were recovered from the available boreholes and scheduled for liquid chemical analysis as per Table 11. The results from the sampling do not indicate any significant trends over the course of the remediation works. The groundwater data is included within Appendix E. During the remediation excavation works, several boreholes were decommissioned and removed as they inhibited access to remediate the areas. The boreholes decommissioned during the works included BH101s, BH101d, BH102, BH203 and BH204. Boreholes remaining at the site, following remediation works include BH201, BH202, BH104 and BH105.

### **3.8 Disposal to Foul Sewer**

A discharge consent was agreed with Southern Water with established criteria; however, as mentioned previously, no water was treated or discharged during the works.

### **3.9 Chemical Analysis Testing Suites**

The following tables provide the chemical analysis suites scheduled for solids (soils) and groundwater during the remediation works.

**Table 10 – Testing Suites Solids**

| Grouping           | Constituent COCs                                                                                                                                                                                                                                                  |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phenols            | 2,4,5-Trichlorophenol; 2,4,6-Trichlorophenol; 2,4-Dichlorophenol; 2,4-Dimethylphenol; 2-Chlorophenol; 2-Methylphenol; 2-Nitrophenol; 4-Chloro-3-methylphenol; 4-Methylphenol; total phenols.                                                                      |
| Metals             | Arsenic, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Zinc.                                                                                                                                                                                 |
| PAHs               | Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene. |
| BTEX               | Benzene, Toluene, Ethylbenzene, p&m-xylene, o-xylene.                                                                                                                                                                                                             |
| Cyanide            | Free Cyanide, Complex Cyanide, Total Cyanide.                                                                                                                                                                                                                     |
| TPH                | Speciated Aliphatic and Aromatic Hydrocarbons.                                                                                                                                                                                                                    |
| General inorganics | pH, Electrical Conductivity, Total Sulphate (as SO <sub>4</sub> ), Sulphide, Total Chloride, Ammonium as NH <sub>4</sub> , Total Organic Carbon.                                                                                                                  |
| Asbestos           | Asbestos ID, Asbestos quantification (for positive ID).                                                                                                                                                                                                           |

**Table 11 – Testing Suites Groundwater**

| Grouping           | Constituent COCs                                                                                                                                                                                                                                                  |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Phenols            | Catechol, Resorcinol, Ethylphenol & dimethylphenol, Cresols, Naphthols, Isopropylphenol, Phenol, Trimethylphenols, Total Phenols.                                                                                                                                 |
| Metals             | Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Zinc.                                                                                                                                                                                        |
| PAHs               | Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene. |
| BTEX               | Benzene, Toluene, Ethylbenzene, p&m-xylene, o-xylene.                                                                                                                                                                                                             |
| Cyanide            | Free cyanide, complex cyanide, total cyanide.                                                                                                                                                                                                                     |
| TPH                | Speciated aliphatic and aromatic hydrocarbons.                                                                                                                                                                                                                    |
| General inorganics | pH, Electrical Conductivity, Sulphate (as SO <sub>4</sub> ), Sulphide, Chloride, Ammonium as NH <sub>4</sub> , Total Organic Carbon, Total Suspended Solids.                                                                                                      |

In terms of quality assurance (QA) and quality control (QC), during groundwater sampling, a duplicate sample was retrieved (BH105a) during the 15/6/2021 monitoring event and field blanks (FB1 and FB2) were tested during the 7/7/2021 and 4/8/2021 monitoring events. A comparison of the duplicate sample results (BH105 and BH105a) does not indicate any significant deviations. The field blank sampling involved the filling up of sample containers with (laboratory provided) de-ionised water during the regular sampling, to check any handling/cross contamination issues. The results indicate trace concentrations of ammoniacal nitrogen (as NH<sub>4</sub>) and metals, which the laboratory have confirmed are linked to the particular water used and not to the accuracy or sensitivity of the laboratory result or contamination in the field. A Naphthalene concentration of 0.62 µg/l (compared to a laboratory detection limit of 0.01 µg/l) was also reported and is higher than that reported by the laboratory in their blank tests from the same source (and is routinely below their detection limit). The laboratory has confirmed that the data has been checked and found to be correctly integrated. This analyte can be picked up in the field and this concentration is therefore attributed to the samples' handling on-site.

## **4.0 ENVIRONMENTAL MONITORING UNDERTAKEN**

In order to address and manage potential nuisance emissions, mitigation and monitoring measures were deployed during the works. These mitigation and monitoring measures were agreed with the relevant regulatory bodies as part of Celtic's deployment of their Environmental Permit, planning consent (including the Construction Management Plan) and Section 61 (of the Control of Pollution Act 194) consent for works on construction sites. The environmental boundary monitoring point locations are illustrated on drawing D1820/5111/A4 within Appendix A. The following sections describe the agreed mitigation and monitoring requirements.

### **4.1 Dust**

Site and weather conditions were continually assessed throughout the works and mitigation measures were dynamically deployed to prevent the generation of dust as far as practicable. The presence of dust was visually assessed and also measured using on-site instrumentation on an ongoing daily basis. Dust monitoring (frisbee type) gauges were established at the site boundaries, which recorded dust settlement on fortnightly basis and also allowed directional analysis to be undertaken.

Dust mitigation measures were pro-actively undertaken as part of the normal site operations included:

- Deployment of fixed and mobile canon and spray misting units, designed specifically to suppress dust generation;
- Traffic routes were sprayed with water, using a towable water bowser fitted with a spray bar, to prevent potential dust generation and were subject to routine and regular inspection;
- The speed limit for the site was limited to 5 mph to minimise the potential generation of debris/dust; and
- Dust netting and fencing was erected across areas of site to further mitigate risks of cross boundary migration.

The results of the field monitoring together with the frisbee gauge data are included within Appendix H. There were no exceedances of the site criteria for dust during the remedial works.

### **4.2 Vapours and Gases**

Monitoring of volatile organic compounds (VOCs) was undertaken throughout the course of site works. A calibrated Photo Ionisation Detection meter (PID meter) was used for this purpose and the results of the monitoring are included within Appendix H.

Monitoring was carried out twice a day (AM and PM) at the boundary monitoring points and the 15-minute average for each location as well as maximum concentration was recorded. Typically, the monitoring was only undertaken once on a Friday as site works were usually terminated at midday to allow for staff travel time. There were no instances where elevated concentrations (above 0.0 parts per million) were detected.

### 4.3 Odour

Odour monitoring (olfactory sniff test) was undertaken twice daily at the boundary monitoring locations. This was undertaken by the site manager and was occasionally double checked by another member of site staff and the NEC3 Supervisor to check their opinion and manage the risk of desensitisation. Odour intensity and extent were measured and recorded on a 0-5 scale where:

#### Odour Intensity

- 0 – No detectable odour;
- 1 – Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 – Moderate odour (distinct odour detected while standing still);
- 3 – Moderately strong odour (detectable while walking & breathing normally, possibly offensive);
- 4 – Strong odour (bearable, but offensive odour);
- 5 – Very strong odour (very offensive possibly causing nausea).

#### Odour Extent

- 0 – No detectable odour;
- 1 – Local & transient (only during brief periods when wind drops or blows);
- 2 – Transient as above, but detected away from boundary);
- 3 – Persistent, but fairly localized;
- 4 – Persistent and pervasive up to 50 m from boundary;
- 5 – Persistent and widespread (odour detected >50 m from boundary).

The trigger criteria were as follows:

- **Action Levels** were set at 2 or above for intensity and extent at which point odour reduction measures should be put in place. This includes covering of stockpiles, limiting area of open excavations and deodorising sprays.
- **Stop Work Levels** shall be set at 3 or above for intensity and extent at which point works will cease until the odour problem can be rectified.

Celtic proactively deployed odour management measures by limiting the time that excavations were open, covering stockpiles of potentially odorous materials and deploying odour suppressing foam onto contaminated materials.

Levels of 1 for odour intensity (faint) and extent (local) were recorded along the northern boundary along Ford Road on a few days during the excavation and treatment of the contaminated soils in the northern corner of the site. Records of the odour monitoring can be found within Appendix H.

### 4.4 Monitoring/ Control of Noise and Vibration

Best practicable means of noise control were applied during the remediation works to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors arising from the remediation activities.

Celtic completed the works in accordance with a submitted Section 61 document and deployed mitigation measures as required. Mitigation and planning included the following:



- Restricting site working hours to 08:00 – 18:00 Monday to Friday;
- Positioning treatment activities as far away from sensitive receptors as reasonably practicable;
- Restricting the movement of plant and positioning haul routes away from the sensitive northwest and southwest site boundaries;
- Selecting plant and machinery in good working order and less than 3 years old and, where available, using quiet and low vibration equipment; and
- Vehicles and plant were maintained in a good and effective working order and operated in a manner to minimise noise emissions.

Noise monitoring was carried out by Celtic on a twice daily basis at the designated environmental monitoring points as per the other monitoring regimes. The monitoring was carried out using a calibrated and certified Decibel Noise Meter.

A 15 minute LAeq, or equivalent continuous sound pressure level, of 70 decibels (dB) was predicted at the site boundary and an action level of >73 dB was agreed where works would cease and require further mitigation measures. There were no instances when the noise exceeded the 15 minute LAeq at the monitoring locations during the course of the works. There was no vibration monitoring requirements identified during the remediation works. Records of the noise monitoring can be found within Appendix H.

#### **4.5 Asbestos Monitoring**

Background, reassurance, asbestos air monitoring was undertaken on a weekly basis during excavation works and was completed by a specialist 3<sup>rd</sup> party sub-contractor (enQuin Environmental) with all results provided on the day of testing to allow a proactive and immediate review and response based on any identified elevated concentrations.

The monitoring was undertaken at the same boundary monitoring locations as the other environmental monitoring and was also undertaken within the site welfare compound and within the cabs of on-site machines (excavator and dumper).

There were no instances of fibres being recorded above the control limit of 0.01 fibres/ml – cm<sup>3</sup>. Records of the reassurance air monitoring can be found within Appendix H.

## 5.0 FINAL SITE CONDITIONS

### 5.1 Potential Constraints

The site has been left in a safe and secure manner and handed back to the Client. The site is deemed to be appropriate for the intended agreed end use of 'Commercial Open Storage'. There remains however, several features which may represent potential constraints to future site use.

The concrete (former gasholder) base (feature no. 8 on D1820/5111/A2, Appendix A) in the western corner of site has been left in-situ at approximately 2.5 mAOD. The concrete (former gasholder) base (feature no. 15 on D1820/5111/A2, Appendix A) in the southern corner of site has been left in-situ at approximately 2 mAOD. The concrete (former gasholder) base (feature no. 4 on D1820/5111/A2, Appendix A) on the northwestern boundary has been left in-situ at approximately 1.8 mAOD and its brick walls remain in-situ from approximately 2.8 mAOD. Further brick walls are present to the southeast, as shown on drawing D1820/5111/A7 Appendix A, which are present between approximately 0.8 to 2.8 mAOD.

Stabilised materials are present within the areas as shown on drawing D1820/5111/A7, Appendix A and these will be encountered approximately 0.8 to 1 m below the current site levels. The level of the stabilised material is at approximately 2.9 to 3.1 mAOD in the northern part of the site and at approximately 2.5 to 2.7 mAOD in the central area of the site.

The 300 mm diameter concrete surface water drain and two access chambers are present across the central area of the site. Remnant cast iron pipework exiting the site is also present along the northeastern and northwestern boundaries as illustrated on drawing D1820/5111/A7, Appendix A.

A live electrical sub-station (currently operated by SSE) is present on the northeastern boundary with high voltage as well as low voltage cables exiting the sub-station below ground on its southeastern side and crossing under the site access gate before turning and veering north and northwest along the verge of the current access track (towards Ford Road), as illustrated on drawing D1820/5111/A3, Appendix A.

A pot-ended low pressure (25 mm PE) gas pipe is also present below ground near the northwestern site boundary. The gas pipe is not shown on any SGN plans and was not identified prior to the remediation works. Celtic only became aware of its presence when it was struck during the course of the remediation works (as described within Section 2.3.4) and was immediately repaired by SGN. No metallic strips were evident and its presence was not identified during utilities surveying. The position of the pipe is approximately 10 m in from the northeast site boundary gate and 1.2 m in from the internal northwest boundary fence. Its depth is approximately 0.8 m below ground level or 3.2 mAOD and its location is illustrated on drawing D1820/5111/A6.

Groundwater monitoring boreholes are also present on-site as shown on drawing D1820/5111/A6. The remaining boreholes are denoted as BH104, BH105, BH201 & BH202. There is not considered to be a requirement for further groundwater monitoring as part of these remediation works; however, they have been left in place for the time being should any future monitoring requirements be identified.

## **5.2 Post Remediation Risk Assessment**

All materials re-used on-site comply with the remedial criteria and are deemed to be suitable for re-use as per the Remediation Implementation and Verification Plan (report ref, R1820/21/5045 rev2, by Celtic March 2021). The Materials Management Plan was adhered to with no deviations from initial proposals. The remediation works are therefore deemed to comply with the CL:AIRE DoWCoP.

The relevant pollutant linkages for the continued 'commercial open storage' use of the site are deemed to have been successfully addressed by the remediation works undertaken. Based on the collected lines of evidence presented within this report, the remediation criteria and objectives have been successfully achieved.

The capping layer has been appropriately placed and will just need to be appropriately maintained should any works on-site compromise it. Appropriate maintenance of the perimeter fencing will also be required to ensure the ongoing security of the site.

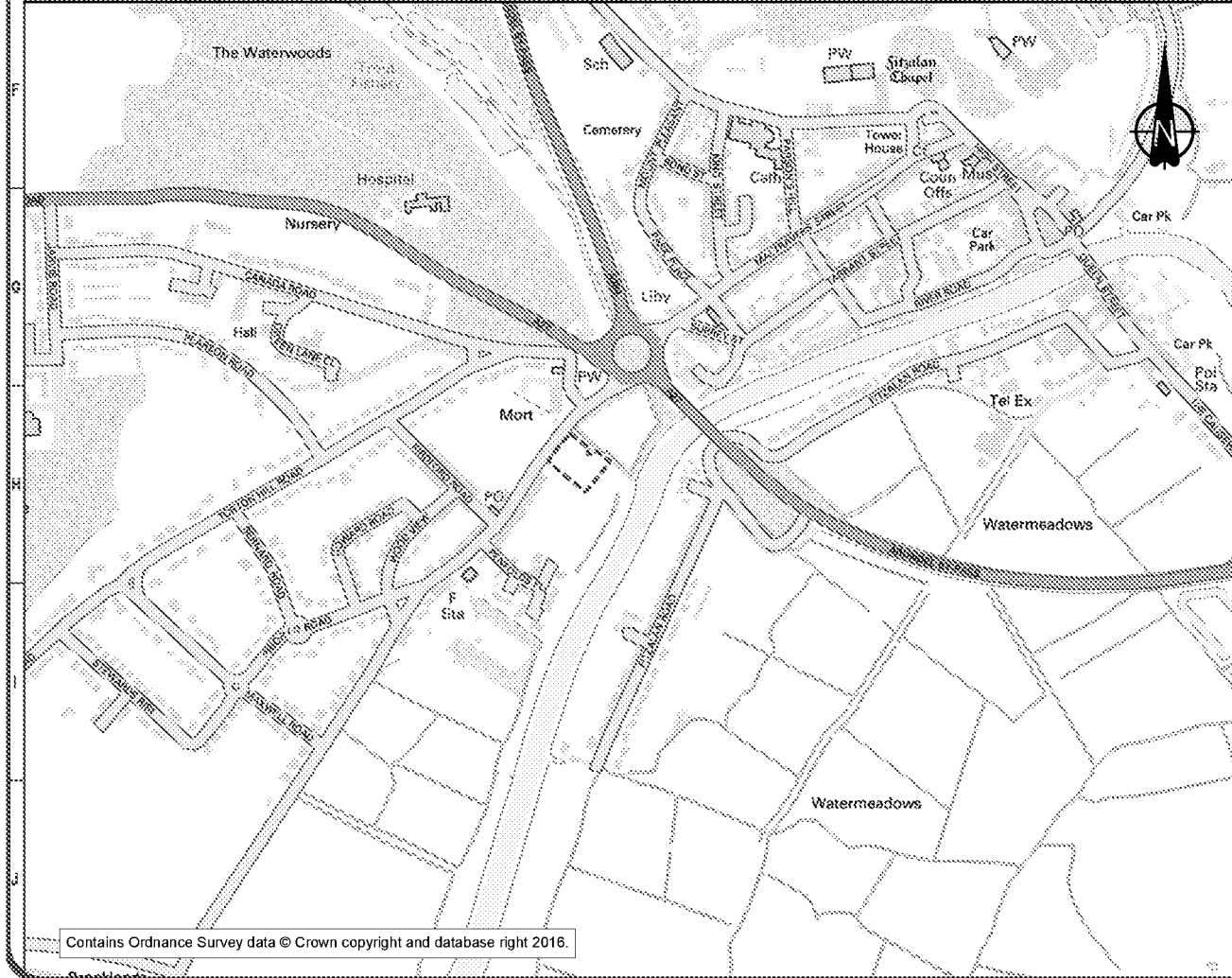
## **APPENDICES**

|                   |                                                 |
|-------------------|-------------------------------------------------|
| <b>APPENDIX A</b> | <b>DRAWINGS</b>                                 |
| <b>APPENDIX B</b> | <b>REGULATORY CORRESPONDENCE</b>                |
| <b>APPENDIX C</b> | <b>PHOTOGRAPHS</b>                              |
| <b>APPENDIX D</b> | <b>STABILISATION TANK TEST DATA (TO FOLLOW)</b> |
| <b>APPENDIX E</b> | <b>EXPORT DATA</b>                              |
| <b>APPENDIX F</b> | <b>IMPORT DATA</b>                              |
| <b>APPENDIX G</b> | <b>LABORATORY ANALYSIS</b>                      |
| <b>APPENDIX H</b> | <b>ENVIRONMENTAL MONITORING DATA</b>            |

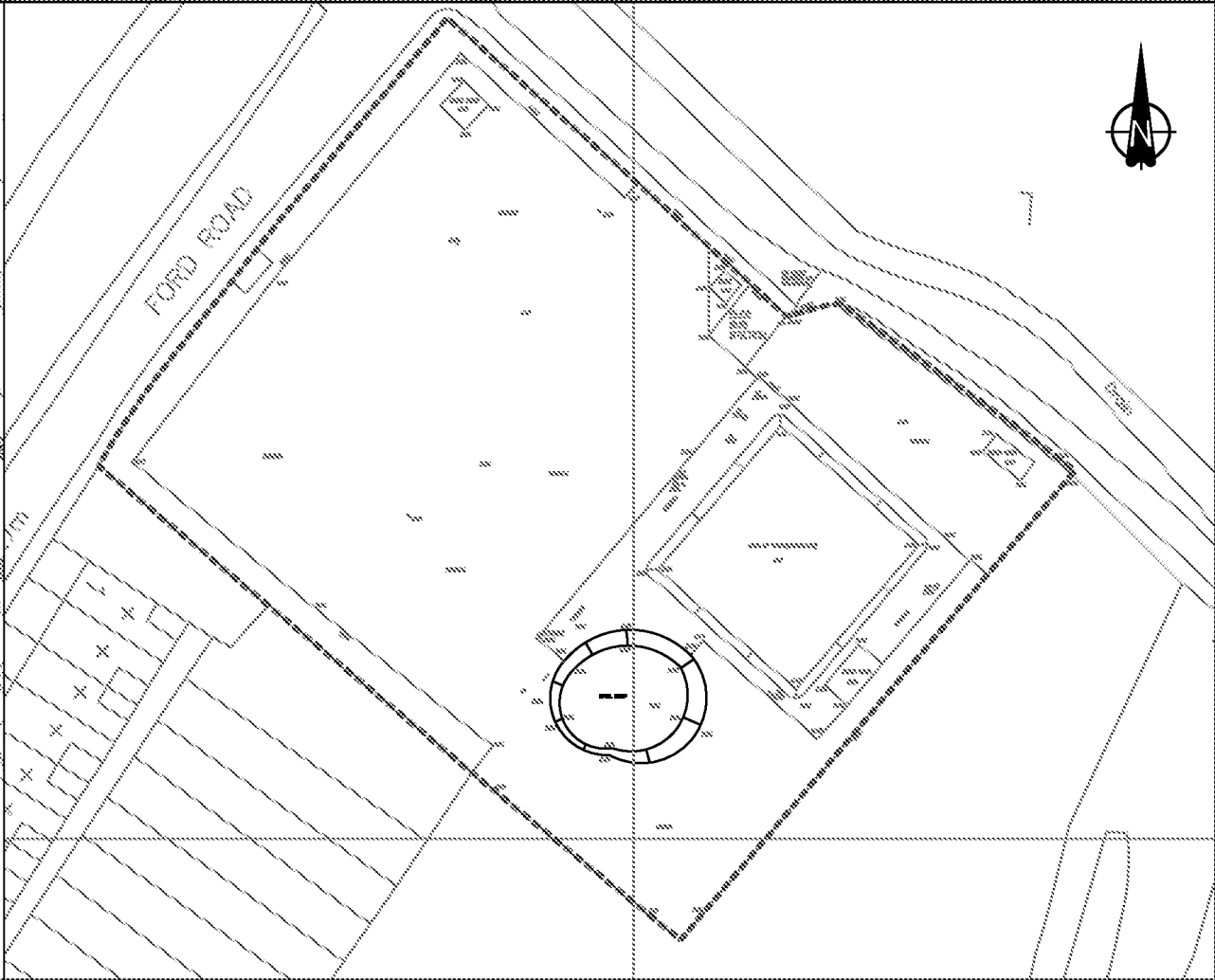
## **APPENDIX A      DRAWINGS**



Google 2018



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Legend

National Grid Property Holdings Ltd  
Site Boundary

0 First Issue 08.09.21  
REV COMMENT DATE

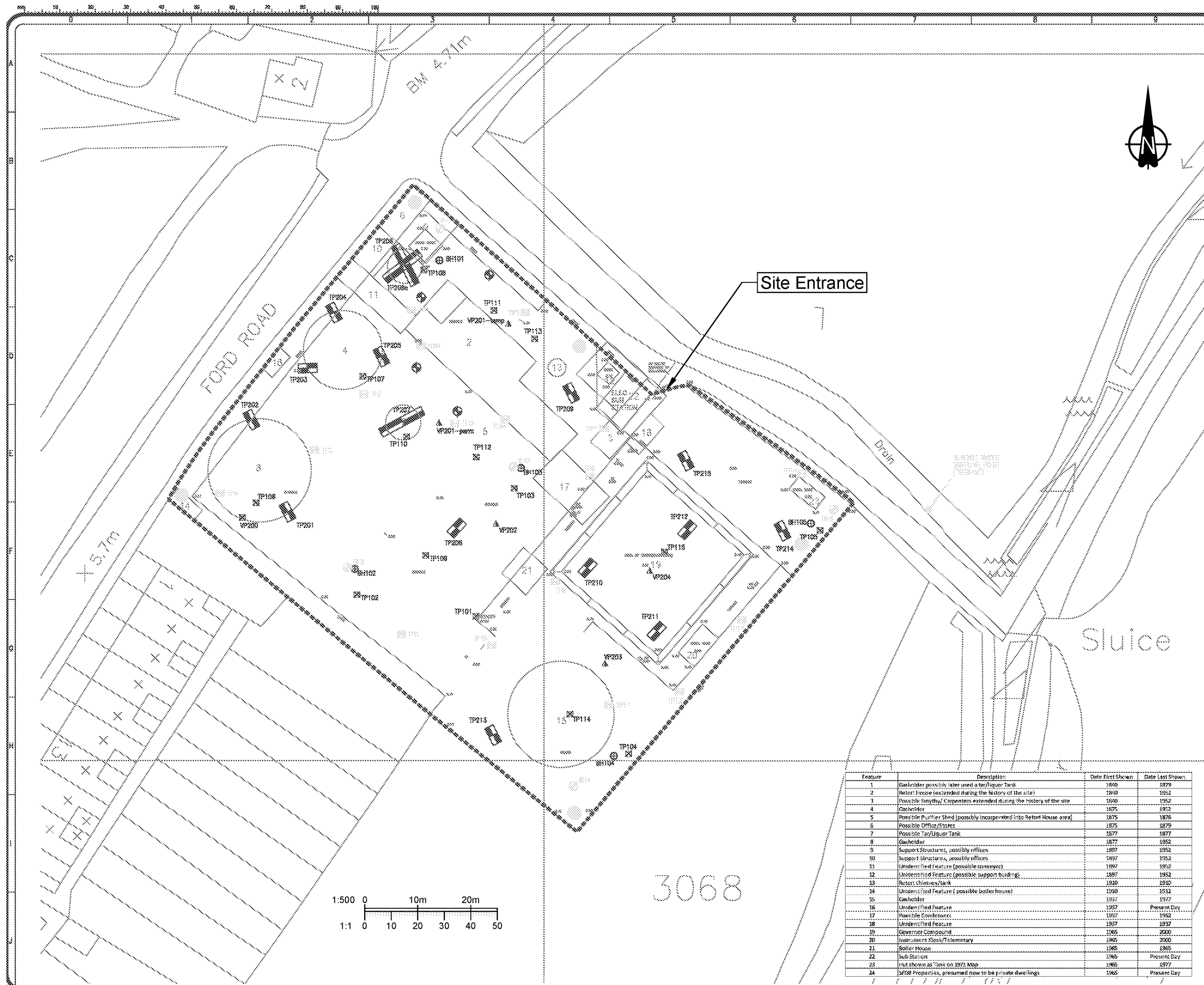
Celtic  
enGlobe  
Columbus House  
Village Way  
Cardiff  
CF15 7NE  
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enquiries@celtic-ld.com  
www.celtic-ld.com

Client  
nationalgrid

Project  
Arundel Gas Works  
Ford Road, Arundel  
Title  
Site Location Plan

|                         |                  |                  |                    |
|-------------------------|------------------|------------------|--------------------|
| Drawn by<br>JS          | Checked<br>SG    | Date<br>08.09.21 | Authorised<br>Date |
| Original Scale<br>N.T.S | Date<br>08.09.21 | Rev<br>0         | Paper<br>A3        |
| Drawing Number          |                  |                  |                    |

D1820/5011/A1



- Legend
- National Grid Property Holdings Site Boundary
  - Celtic Trial Pit
  - Celtic Borehole Location
  - 2000 Atkins Borehole Location
  - 2000 Atkins Trial Pit Location
  - 2000 Trial Trench Location
  - 2011 Atkins Borehole Location
  - 2011 Atkins Trial Pit Location
  - 2011 Vapour Well
  - Historical Features

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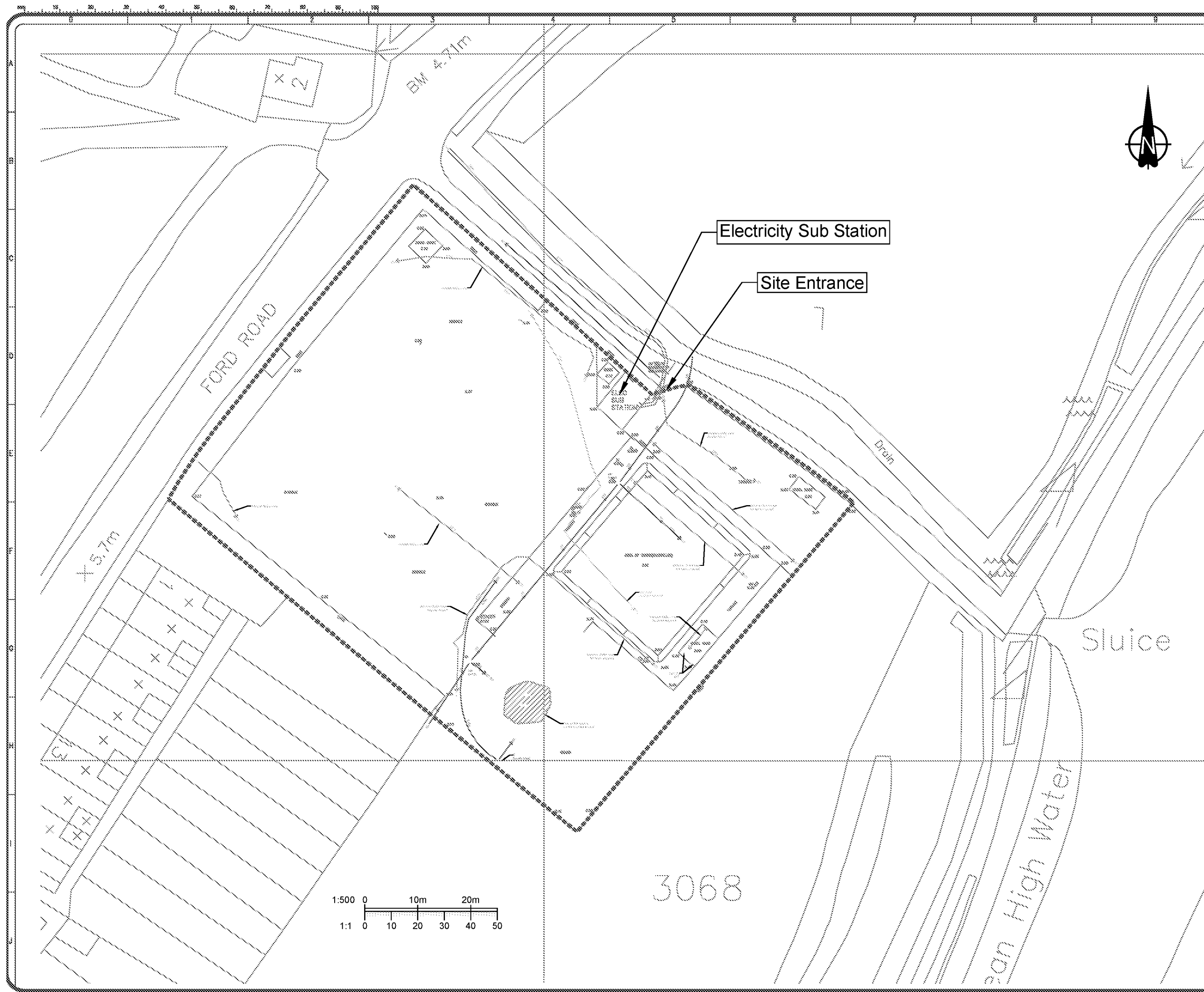
Project  
Arundel Gas Works  
Ford Road, Arundel  
Title  
Historical Features and  
Investigation Locations

Drawn by  
JS  
Checked  
SG 08.09.21  
Date  
08.09.21  
Authorised  
Date  
0  
Original Scale  
1:500  
Date  
08.09.21  
Rev  
0  
Paper  
A3  
Drawing Number  
D1820/5011/A2

| Feature | Description                                                           | Date First Shown | Date Last Shown |
|---------|-----------------------------------------------------------------------|------------------|-----------------|
| 1       | Gasholder possibly later used as tar/liquor Tank                      | 1840             | 1879            |
| 2       | Retort House (extended during the history of the site)                | 1840             | 1952            |
| 3       | Possible Smyth/ Carpenters extended during the history of the site    | 1940             | 1952            |
| 4       | Gasholder                                                             | 1875             | 1952            |
| 5       | Possible Purifier Shed (possibly incorporated into Retort House area) | 1875             | 1876            |
| 6       | Possible Office/Stores                                                | 1875             | 1879            |
| 7       | Possible Tar/Liquor Tank                                              | 1877             | 1877            |
| 8       | Gasholder                                                             | 1877             | 1952            |
| 9       | Support Structures, possibly offices                                  | 1897             | 1952            |
| 10      | Support Structures, possibly offices                                  | 1897             | 1952            |
| 11      | Unidentified Feature (possible conveyer)                              | 1897             | 1952            |
| 12      | Unidentified Feature (possible support building)                      | 1897             | 1952            |
| 13      | Retort chimney/tank                                                   | 1910             | 1910            |
| 14      | Unidentified Feature (possible boiler house)                          | 1910             | 1912            |
| 15      | Gasholder                                                             | 1917             | 1917            |
| 16      | Unidentified Feature                                                  | 1917             | Present Day     |
| 17      | Possible Gasometer                                                    | 1917             | 1952            |
| 18      | Unidentified Feature                                                  | 1917             | 1917            |
| 19      | Governor Compound                                                     | 1965             | 2000            |
| 20      | Instrument Room/Telemetry                                             | 1965             | 2000            |
| 21      | Boiler House                                                          | 1965             | 1965            |
| 22      | Sub Station                                                           | 1965             | Present Day     |
| 23      | Hut shown as Tank on 1871 Map                                         | 1965             | 1977            |
| 24      | SG08 Properties, presumed now to be private dwellings                 | 1965             | Present Day     |

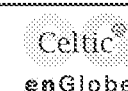
3068





| Legend |                                               |
|--------|-----------------------------------------------|
|        | National Grid Property Holdings Site Boundary |
|        | Foul Drainage                                 |
|        | Surface Drainage                              |
|        | Combined Drainage                             |
|        | Electricity                                   |
|        | Electricity High Voltage                      |
|        | Electricity Low Voltage                       |
|        | Gas                                           |
|        | Ground Probing Radar                          |
|        | Water                                         |
|        | Cable Television                              |
|        | Close Circuit Television                      |
|        | Communication                                 |
|        | British Telecom                               |
|        | Compressed Air                                |
|        | Offset Fill-Line                              |
|        | Oil Pipe                                      |
|        | Pipe                                          |
|        | Ventilation                                   |
|        | Fuel Line                                     |
|        | Vapour Recovery                               |
|        | Gauge Line                                    |
|        | Telemetry                                     |
|        | Fibre Optics                                  |
|        | Unknown                                       |
|        | Fence                                         |
|        | Edge of Canopy                                |
|        | Gully Run                                     |

|     |             |          |
|-----|-------------|----------|
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| REV | COMMENT     | DATE     |



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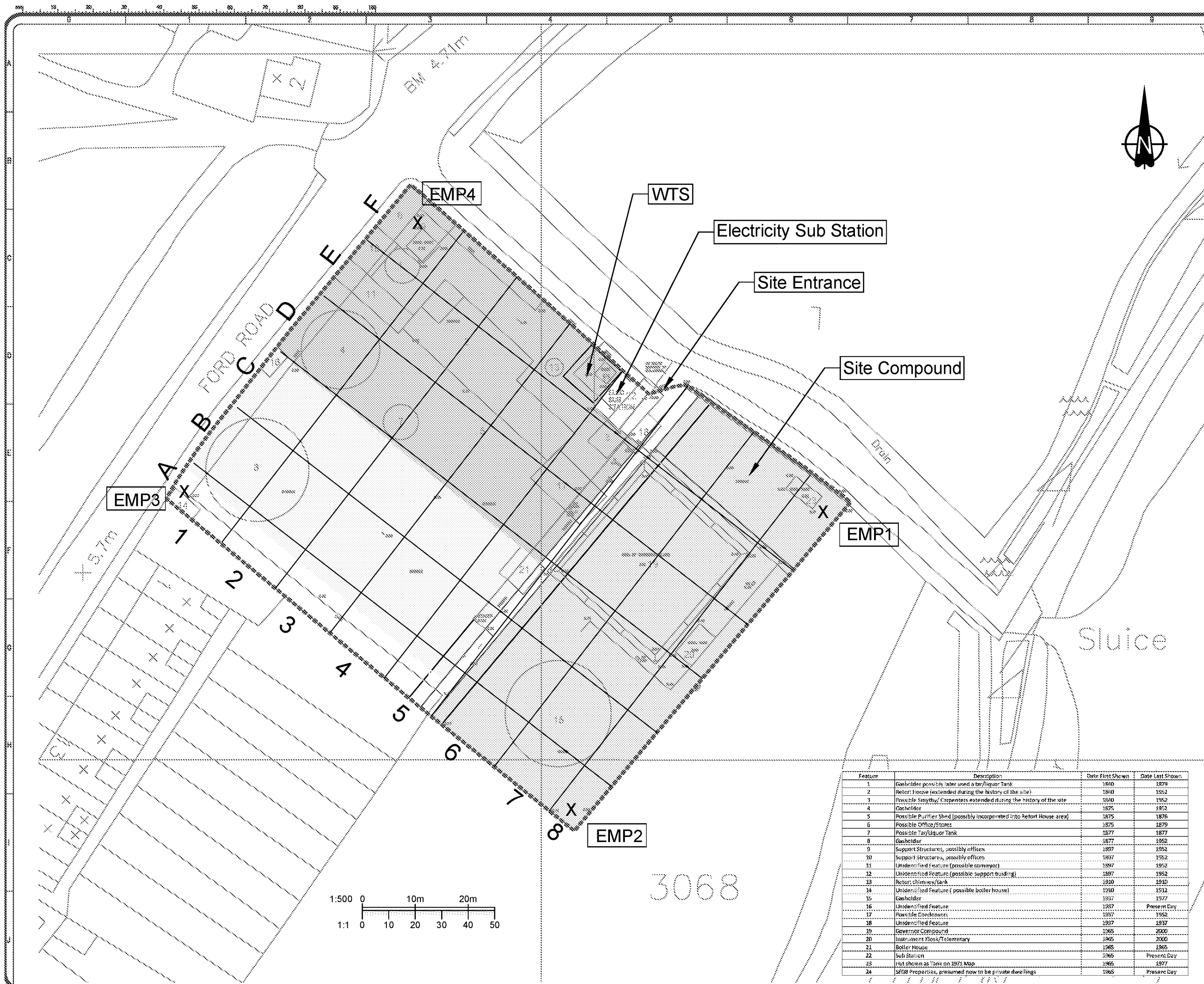
Client  
**nationalgrid**

Project  
**Arundel Gas Works  
Ford Road, Arundel**

Title  
**Utilities Survey**

|                                        |                         |                         |                           |
|----------------------------------------|-------------------------|-------------------------|---------------------------|
| Drawn by<br><b>JS</b>                  | Checked<br><b>SG</b>    | Date<br><b>08.09.21</b> | Authorised<br><b>Date</b> |
| Original Scale<br><b>1:500</b>         | Date<br><b>08.09.21</b> | Rev<br><b>0</b>         | Paper<br><b>A3</b>        |
| Drawing Number<br><b>D1820/5011/A3</b> |                         |                         |                           |





Legend

- National Grid Property Holdings Site Boundary
- Site Compound
- Water Treatment System
- Area 1
- Area 2
- Area 3
- Area 4
- Surface Water Easement
- Historical Features
- X Environmental Monitoring Point Locations (EMP)

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Project  
Arundel Gas Works  
Ford Road, Arundel  
Title  
Remedial Areas with Grid

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Date  
08.09.21  
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Date  
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Date  
08.09.21  
Rev  
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Paper  
A3  
Drawing Number  
D1820/5011/A4

| Feature | Description                                                           | Date First Shown | Date Last Shown |
|---------|-----------------------------------------------------------------------|------------------|-----------------|
| 1       | Gasholder possibly later used a tar/liquor Tank                       | 1840             | 1879            |
| 2       | Retort House (extended during the history of the site)                | 1840             | 1952            |
| 3       | Possible Smithy/ Carpenters extended during the history of the site   | 1940             | 1952            |
| 4       | Gasholder                                                             | 1875             | 1952            |
| 5       | Possible Purifier Shed (possibly incorporated into Retort House area) | 1875             | 1876            |
| 6       | Possible Office/Stores                                                | 1875             | 1879            |
| 7       | Possible Tar/Liquor Tank                                              | 1877             | 1877            |
| 8       | Gasholder                                                             | 1877             | 1952            |
| 9       | Support Structures, possibly offices                                  | 1897             | 1952            |
| 10      | Support Structures, possibly offices                                  | 1897             | 1952            |
| 11      | Unidentified Feature (possible conveyer)                              | 1897             | 1952            |
| 12      | Unidentified Feature (possible support building)                      | 1897             | 1952            |
| 13      | Retort chimneys/tank                                                  | 1910             | 1910            |
| 14      | Unidentified Feature (possible boiler house)                          | 1910             | 1912            |
| 15      | Gasholder                                                             | 1917             | 1977            |
| 16      | Unidentified Feature                                                  | 1917             | Present Day     |
| 17      | Possible Gasometers                                                   | 1917             | 1952            |
| 18      | Unidentified Feature                                                  | 1917             | 1937            |
| 19      | Governor Compound                                                     | 1965             | 2000            |
| 20      | Instrument House/Telemetry                                            | 1965             | 2000            |
| 21      | Boiler House                                                          | 1965             | 1965            |
| 22      | Sub Station                                                           | 1965             | Present Day     |
| 23      | Hut shown as Tank on 1871 Map                                         | 1965             | 1977            |
| 24      | SGS Properties, presumed now to be private dwellings                  | 1965             | Present Day     |

3068



Legend

- National Grid Property Holdings Site Boundary
- Site Compound
- Water Treatment System
- Area 1
- Area 2
- Area 3
- Area 4
- Surface Water Easement

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Client  
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Project  
Arundel Gas Works  
Ford Road, Arundel

Title  
Validation Testing Locations

Drawn by  
JS

Checked  
SG

Date  
08.09.21

Authorised  
Date

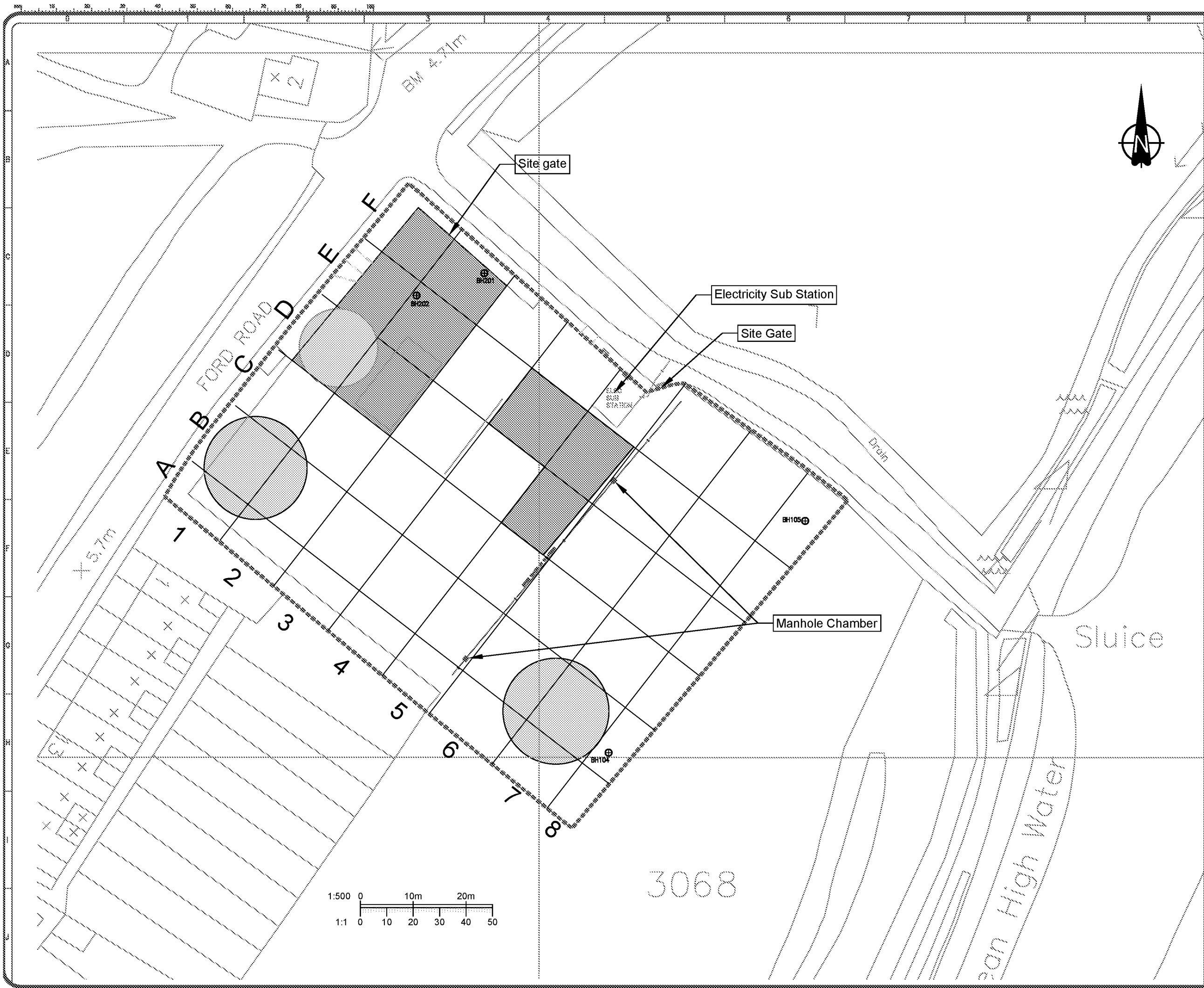
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08.09.21

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Paper  
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Drawing Number  
D1820/5011/A5



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**Legend**

- National Grid Property Holdings Site Boundary
- Stabilised Materials
- Concrete Gasholder Base
- Below Ground Brick Wall
- Below Ground Remnant Cast Iron Pipework
- Below Ground Redundant Gas Pipe (25mm PE)
- Surface Water Drain

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Client

National Grid Logo .JPG

Project

**Arundel Gas Works**  
Ford Road, Arundel

Title

**Constraints Plan**

|          |         |          |            |      |
|----------|---------|----------|------------|------|
| Drawn by | Checked | Date     | Authorised | Date |
| JS       | SG      | 08.09.21 |            |      |

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| Original Scale | Date     | Rev | Paper |
| 1:500          | 08.09.21 | 0   | A3    |

Drawing Number

**D1820/5011/A6**



Legend

- National Grid Property Holdings Site Boundary
- Surface Contours  
(0.1m increments illustrated)  
(0.5m increments labelled)



|     |             |          |
|-----|-------------|----------|
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Client  
nationalgrid

Project  
Arundel Gas Works  
Ford Road, Arundel

Title  
Final Site  
Topographic Levels

|                         |                  |                  |                    |
|-------------------------|------------------|------------------|--------------------|
| Drawn by<br>JS          | Checked<br>SG    | Date<br>08.09.21 | Authorised<br>Date |
| Original Scale<br>1:500 | Date<br>08.09.21 | Rev<br>0         | Paper<br>A3        |

Drawing Number  
D1820/5011/A7

## **APPENDIX B      REGULATORY CORRESPONDENCE**

**Application for Planning Permission**

**DECISION NOTICE**

**Application Ref: AB/45/21/PL**

**1 To Addressee**

Celtic Technologies Ltd  
Columbus House  
Greenmeadow Springs  
Tongwynlais  
Cardiff  
CF15 7NE

**2 Site Address**

Former Gasholder Station  
(land opposite Arundel Cemetery)  
Ford Road  
Arundel

**3 Description of Development**

Remediation works to mitigate potential liabilities associated with ground conditions resulting from the site's historic use as a gasworks. This site is in CIL Zone 1 (Zero Rated) as other development.

**4** In pursuance of their powers under this Act and related Orders and Regulations the Council **PERMIT** this development to be carried out in accordance with the application and plans and subject to the following conditions.

- 1 The development hereby permitted shall be begun before the expiration of 3 years from the date of this permission.

Reason: To comply with Section 91 of the Town and Country Planning Act 1990 (as amended).

- 2 The development hereby approved shall be carried out in accordance with the following approved plans and reports:  
Location Plan P6100/2410/4986/Fig A1 rev0  
Detailed Quantitative Risk Assessment Report  
Analytical Report No 11-28269  
Site Investigation Report

Reason: For the avoidance of doubt and in the interests of amenity and the environment in accordance with policy D DM1 of the Arun Local Plan.

- 3 As per the National Planning Policy Framework (NPPF) (updated February 2019) air quality should be considered at the design stage and incorporate appropriate and effective mitigation.

The applicant must follow the Air Quality & Emissions Mitigation Guidance for Sussex (2013), available at:

<http://www.sussex-air.net/Consultation/AirQualitydocument.pdf>

This countywide adopted guidance states that where a major sized development is proposed a number of checklists

should be followed in order to determine the likely impact of the development on air quality. The intention of the guidance is to identify any air quality impacts through an impact assessment and ensure the integration of appropriate mitigation into a scheme at the design stage, so the damage costs on health can be properly mitigated. The air quality impact assessment can follow the procedures contained within the Institute of Air Quality Management (IAQM) Guidance entitled: 'Land-Use Planning & Development Control: Planning For Air Quality' (January 2017), available at:

<http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>

Reason: To protect the amenity of local residents in accordance with Policy QE SP1 of Arun Local Plan.

- 4 Following completion of development a verification report demonstrating completion of the works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

Reason: To protect the environment and prevent harm to human health by ensuring that the remediated site has been reclaimed in an appropriate standard in accordance with Arun Local Plan policies QE SP1 and QE DM4.

- 5 If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until a remediation strategy detailing how this contamination will be dealt with has been submitted to, and approved in writing by, the Local Planning Authority. The remediation strategy shall be implemented as approved. If no such contaminated material is identified during the development, a statement to this effect must be submitted in writing to the Local Planning Authority.

Reason: To ensure that the development does not contribute to, is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution from previously unidentified contamination sources at the development site in accordance with policies QE SP1 and QE DM4 of Arun Local Plan and paragraph 170 of the National Planning Policy Framework.

- 6 Development shall proceed in accordance with the submitted Construction Management Plan ref R1820/21/5089 rev 0 dated June 2021 and the plan shall be adhered to throughout the entire restoration period.

Reason: In the interests of the amenities of the area in accordance with policy QE SP1 of the Arun Local Plan.

#### INFORMATIVE:

Requirement for an Environmental permit

The dewatering and remediation works associated with this development will require an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2016, from the Environment Agency, unless an exemption applies. The applicant is advised to contact the Environment Agency on 03708 506 506 for further advice and to discuss the issues likely to be raised. You should be aware that there is no guarantee that a permit will be granted.



Additional 'Environmental Permitting Guidance' can be found at: <https://www.gov.uk/environmental-permit-check-if-you-need-one>.

#### Waste on-site

The CL:AIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/ or land development works are waste or have ceased to be waste. Under the Code of Practice:

- excavated materials that are recovered via a treatment operation can be re-used onsite providing they are treated to a standard such that they fit for purpose and unlikely to cause pollution
- treated materials can be transferred between sites as part of a hub and cluster project
- some naturally occurring clean material can be transferred directly between sites

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

Developers should refer to:

- the position statement on the Definition of Waste: Development Industry Code of Practice
- The waste management page on GOV.UK

#### Waste to be taken off-site

Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016
- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005

'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on GOV.UK for more information.

INFORMATIVE: Statement pursuant to Article 35 of the Town and Country Planning (Development Management Procedure)(England) Order 2015. The Local Planning Authority has acted positively and proactively in determining this application by assessing the proposal against all material considerations, including planning policies and any representations that may have been received and subsequently determining to grant planning permission in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.



Neil Crowther  
Group Head of Planning

Case Officer:

Mrs A Gardner

Arun District Council



Decision Issued: **4th June 2021**

The Arun Civic Centre  
Maltravers Road  
Littlehampton  
West Sussex BN17 5LF

**IT IS IMPORTANT THAT YOU READ THE NOTES ATTACHED TO THIS DOCUMENT**

## **APPEALS TO THE SECRETARY OF STATE**

If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

If this is a decision on a planning application relating to the same or substantially the same land and development as is already the subject of an enforcement notice, and you want to appeal against this planning application decision, then you must do so within 28 days of the date of this notice.

If an enforcement notice is served relating to the same or substantially the same land and development as in your application and you want to appeal against this planning application decision, then you must do so within 28 days of the date of service of the enforcement notice, or within 6 months of the date of this notice, whichever period expires earlier.

Otherwise, if you want to appeal against this decision then you must do so within 6 months of the date of this notice.

Appeals must be using a form which you can get from the Secretary of State at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN (Tel: 0303 444 5000) or online at <http://acp.planninginspectorate.gov.uk>

The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

If you intend to submit an appeal that you would like examined by inquiry then you must send notice to the Local Planning Authority and Planning Inspectorate([inquiryappeals@planninginspectorate.gov.uk](mailto:inquiryappeals@planninginspectorate.gov.uk)) at least 10 days before submitting the appeal. Further details can be found at [www.GOV.uk](http://www.GOV.uk)

## **PURCHASE NOTICES**

If either the local planning authority or the Secretary of State refused permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council (that is, where the land is situated in a National Park, the National Park authority for the Park, or in any other case the district council in whose area the land is situated). This notice will require the Council to purchase the owner's interest in the land in accordance with the provisions of Chapter 1 of Part VI of the Town & Country Planning Act 1990.

Please note that this decision notice only relates to matters under the Planning Acts and does not give consent under any other legislation that may apply to the development. You will need to carry out your own checks to determine whether any other consents or permissions are required. For example, the Building Regulations are likely to apply to most developments, and a Highways Licence may be required from West Sussex County Council for any development within the public highway (including the placing of skips on

highway land).

Arun District Council  
Development Control  
1, Arun Civic Centre Maltravers Road  
Littlehampton  
West Sussex  
BN17 5LF

**Our ref:** HA/2021/123131/01-L01  
**Your ref:** AB/45/21/PL  
**Date:** 11 May 2021

Dear Sir/Madam

**THE PLANNING APPLICATION IS FOR REMEDIATION WORKS TO MITIGATE POTENTIAL LIABILITIES ASSOCIATED WITH GROUND CONDITIONS RESULTING FROM THE SITE'S HISTORIC USE AS A GASWORKS.**

**FORMER GASHOLDER STATION (LAND OPPOSITE ARUNDEL CEMETRY) FORD ROAD ARUNDEL**

Thank you for consulting the Environment Agency on the above application.

### **Environment Agency Position**

We have **no objection** to the proposed development as submitted, **subject to the inclusion of the following 2 conditions**, in any permission granted.

We consider that planning permission could be granted to the proposed development, as submitted, if the following planning conditions are included as set out below. Without these conditions, the proposed development on this site poses an unacceptable risk to the environment and we would object to the application.

### **Conditions**

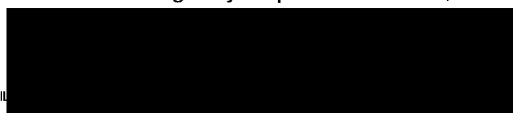
#### Condition 1 – Verification report

A verification report is required, demonstrating the completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to, and approved in writing, by the local planning authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.

#### Reason(s)

This condition is required to ensure that the site does not pose any further risk to human health or the water environment by demonstrating that the requirements of the approved verification plan have been met and that remediation of the site is complete. This is in line with paragraph 170 of the National Planning Policy Framework.

Environment Agency  
Environment Agency Depot Canal Walk, Romsey, Hampshire, SO51 7LP.



*We have reviewed the Supplementary Site Investigation Factual Report (Dec 2020) and Remediation Implementation and Verification Plan (March 2021). We note the intended end use and remediation measures are based on an intended open storage end use and a programme of site excavation and turnover is proposed to identify, segregate and treat contaminated soils where appropriate. Groundwater treatment is proposed to deal with NAPL contamination and impacted perched water during excavation works.*

#### Condition 2 – Previously unidentified contamination

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the local planning authority) shall be carried out until a remediation strategy detailing how this contamination will be dealt with has been submitted to, and approved in writing by, the local planning authority. The remediation strategy shall be implemented as approved.

#### Reason(s)

To ensure that the development does not contribute to, is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution from previously unidentified contamination sources at the development site. This is in line with paragraph 170 of the National Planning Policy Framework.

#### **Advice to Local Planning Authority/Applicant**

The site comprises made ground, overlying superficial alluvial deposits which sit upon the Spetisbury Chalk principal aquifer. Groundwater is very shallow, only 1-3m below ground level and the River Arun is 40m to the south east. Groundwater flow is generally towards the river to the east, however it is tidally influenced.

There is widespread contamination in the made ground across the site, which is higher in the north and east associated with the gas holder and associated infrastructure. Deeper hydrocarbon and NAPL contamination tends to be focused in the soils and perched water to the north east.

We would highlight that this application only addresses the current contamination aspects, relating to continued use for open storage following remediation. Our response covers this continuation of current use for open storage. Any additional future development could create additional pathways, such as through site drainage or piling, and may result in the need for additional remediation in the future which would be dealt with through the planning system.

#### Requirement for an Environmental permit

The dewatering and remediation works associated with this development will require an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2016, from the Environment Agency, unless an exemption applies. The applicant is advised to contact the Environment Agency on [REDACTED] for further advice and to discuss the issues likely to be raised. You should be aware that there is no guarantee that a permit will be granted. Additional 'Environmental Permitting Guidance' can be found at: <https://www.gov.uk/environmental-permit-check-if-you-need-one>.

#### Waste on-site

The CL:AIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/ or land development works are waste or have ceased to be waste. Under the Code of Practice:

- excavated materials that are recovered via a treatment operation can be re-used on-site providing they are treated to a standard such that they fit for purpose and unlikely to cause pollution

- treated materials can be transferred between sites as part of a hub and cluster project
- some naturally occurring clean material can be transferred directly between sites

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

We recommends that developers should refer to:

- the position statement on the Definition of Waste: Development Industry Code of Practice
- The waste management page on GOV.UK

#### Waste to be taken off-site

Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016
- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on GOV.UK for more information.

Should you have any further queries please do not hesitate to contact me.

Yours faithfully

**Miss Hannah Brothwell**  
**Sustainable Places Advisor**



cc Celtic Technologies Limited

The Company Director and/or Secretary  
Celtic Technologies Limited  
1210  
Arlington Business Park  
Reading  
RG7 4TY

**Our ref:** AP3195FG/W0075

**Date:** 14 May 2021

Dear Sir/Madam,

### **Environmental Permitting (England and Wales) Regulations 2016**

**Deployment ref:** AP3195FG/W0075

**Permit holder:** Celtic Technologies Limited

**Location of the deployment:** Ford Road, Arundel, West Sussex, BN18 9DX.

Following assessment of your deployment notification reference number AP3195FG/W0075 I can confirm that we have agreed your deployment form and you may now start to operate.

This deployment lasts for one year from the date the activity starts on site. If you wish to continue beyond this one year period you must re-notify.

You must comply with your permit and carry out the activities in accordance with the requirements of the agreed deployment form and:

- further information including an updated site plan, a summary of the proposal, clarification on the noise monitoring & pollution control measures and confirmation of the mitigation in place throughout the stabilisation process received by us on 12 May 2021 at 12:56 and 14 May 2021 at 09:43.

You must seek written permission from us if any of the details provided in the deployment form change.

This approval letter is associated with the mobile plant permitting regime only. As the operator, it is your responsibility to agree other authorisations, for example, planning permission, remedial strategy, abstraction or discharge consents with the relevant regulatory authority.

Please note that operating under your Mobile Plant Permit / Mobile Treatment Licence does not imply that the remediation processes used will be suitable for meeting any remediation objectives specified. These issues must be considered separately by the developer/consultant and our local area Groundwater and Contaminated Land team. These must be defined in the site remedial strategy which sets out the remediation options to reduce or control the risks from pollution linkages associated with the site as a whole. You

may need to carry out further remediation if an unacceptable risk to the environment remains at the site.

Please notify us at least seven days prior to starting the remediation activities, at [psc@environment-agency.gov.uk](mailto:psc@environment-agency.gov.uk) & Penfold [SSD@environment-agency.gov.uk](mailto:SSD@environment-agency.gov.uk)

If you have any queries about this matter please contact us by telephone on 03708 506 506 or email us at [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk) quoting your deployment application reference AP3195FG/W0075.

Yours faithfully,

**Grant Wilson**

**Team Leader,  
National Permitting Service**





# APPLICATION FOR PRIOR CONSENT FOR WORKS ON CONSTRUCTION SITES

## Control of Pollution Act 1974 Part III Section 61

To: Head of Environmental Health  
Arun District Council  
Civic Centre  
Maltravers Road  
LITTLEHAMPTON  
West Sussex BN17 5LF

Complete in full, using block letters, sign and send to address  
opposite by post or by hand or by DX (DX 57406 Littlehampton)  
or [pollution@arun.gov.uk](mailto:pollution@arun.gov.uk)

1. ~~I/We~~ apply <sup>1</sup> to you for a consent under Section 61(1) of the Control of Pollution Act 1974 with regard to [noise limits on] the carrying out of construction works.

~~I/We~~ propose to carry out works on the following premises: *(describe the premises)*<sup>2</sup>

Former Gasholder Station (land opposite Arundel cemetery) comprising 0.44 hectares off Ford Road, Arundel, West Sussex BN18 9DX. The site comprises commercial (open storage) land use, with no above ground buildings or structures on-site. There is no proposed change of land use and the works are being undertaken under planning application AB/45/21/PL.

2. The works will be carried out using the following methods<sup>3</sup> *(describe the working methods which can be by reference to an attached Schedule)*.

The works comprise remediation activities to mitigate potential liabilities to controlled waters and human health associated with ground conditions resulting from the site's historic use as a gasworks. The works will involve excavation, using mechanical tracked 360 excavators, of soils and below ground structures and the ex-situ treatment of soils using cementitious stabilisation (regulated by an Environmental Permit deployed in agreement with the Environment Agency). Hydraulic breakers attached to the excavators will be required, on a limited basis, to break out below ground structures to access soils requiring treatment. A water treatment system will be established to deal with any perched groundwaters on-site with disposal of treated (trade effluent) waters to foul sewer under agreement and consent to discharge from Southern Water.

3. ~~I/ We~~ will take the following steps to minimise the levels of noise generated by the works: *(describe the steps to be taken i.e restricted hours of work)*.

- Working hours are restricted to 08:00 to 18:00 Monday to Friday with no weekend or bank holiday works;
- Excavation, haul routes and treatment activities shall be positioned as far away from sensitive receptors as reasonably practicable;
- We shall select plant and machinery in good working order and less than 3 years old where available;
- Equipment will be appropriately maintained in a good and effective working order and operated in a manner to minimise noise emissions;
- Equipment will be switched off when not in use;
- Where available quieter equipment will be selected and noise damping fitted where practicable; and
- Acoustic barriers will be available on-site and erected around activities to minimise noise emissions.

4. Should you require any further information, any communications regarding this matter should be made to *(address / telephone number / name of the person dealing with the matter)*

Steve Gronow, Celtic Technologies Ltd, Columbus House, Greenmeadow Springs, Tongwynlais, Cardiff CF15 7NE.  
Tel: 07985 836252; email [steve.gronow@celtic-ltd.com](mailto:steve.gronow@celtic-ltd.com)

Dated: 14 May 2021

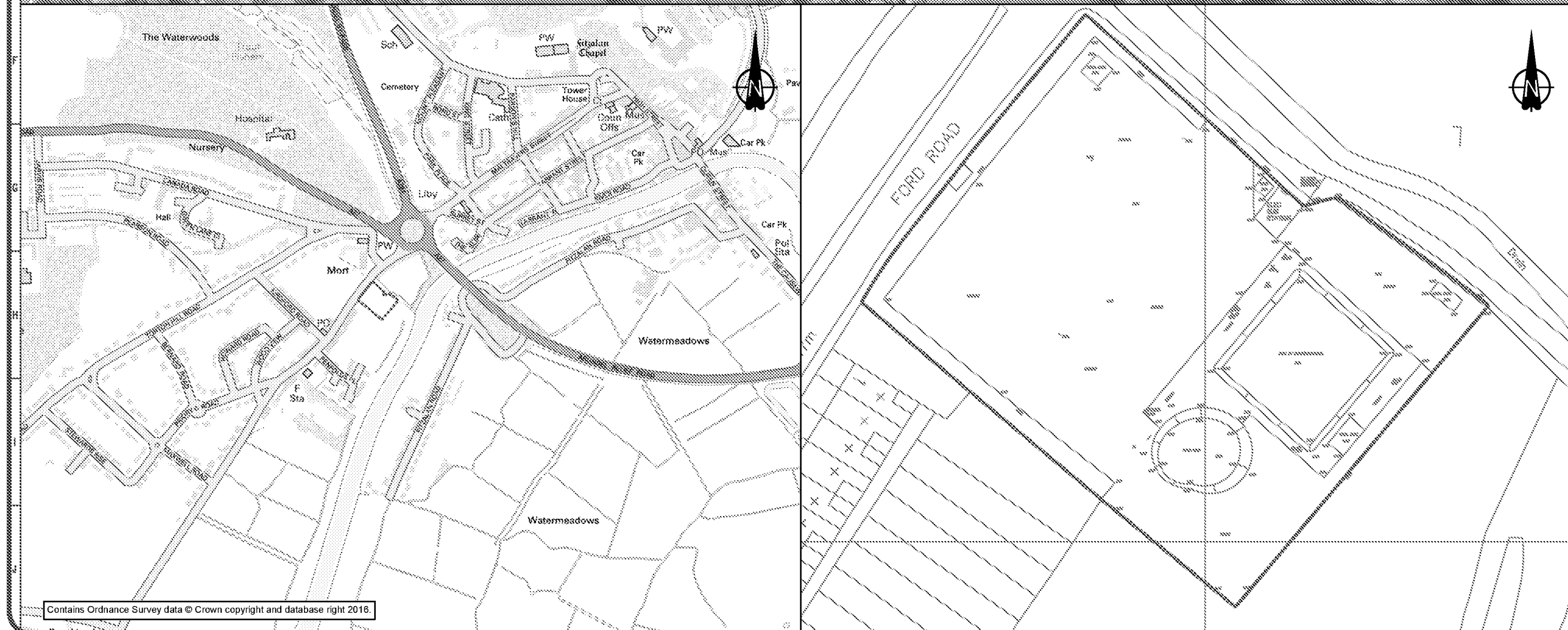
Signed:

(signature of (or on behalf of) the applicant)

- 1 Any person who intends to carry out works to which the Control of Pollution Act 1974 s.60 applies may apply in advance to the Local Authority for a consent for the works which are going to be carried out, and the mitigation measures to be used. Note that where the building works require approval under the Building Regulations 1985, SI 1985/1065 as amended, the Section 61 application must be made either at the same time as the Building Regulations application or after approval has been obtained: Control of Pollution Act 1974 s.61(2) as amended by the Building Act 1984, s.133(2), Sch 7.
- 2 It may be helpful to describe the premises by reference to a marked-up plan.
- 3 A Section 61 application must contain the particulars of the works, the method by which they are to be carried out, and also the steps which are proposed to be taken to minimise the noise resulting from the works: Control of Pollution Act 1974 s.61(3).

#### **DATA PROTECTION**

The information contained in this form will be used by Arun District Council for the purposes indicated and will be further used or transferred to other organisations or individuals, only as the law permits.



**Legend**

XXXXXXXXXXXX National Grid Property Holdings Ltd  
Site Boundary

|     |             |          |
|-----|-------------|----------|
| 0   | First Issue | 22/11/19 |
| REV | COMMENT     | DATE     |



Columbus House  
Village Way  
Cardiff  
CF15 7NE  
029 2036 8636

enquiries@celtic-ltd.com  
www.celtic-ltd.com

Client **nationalgrid**

|         |                                         |
|---------|-----------------------------------------|
| Project | Arundel Gas Works<br>Ford Road, Arundel |
| Title   | Site Location Plan                      |

|                                |                                    |                                       |                    |
|--------------------------------|------------------------------------|---------------------------------------|--------------------|
| Drawn by<br><b>GEP</b>         | Checked Date<br><b>GR 19/11/19</b> | Authorised Date<br><b>KD 22/11/19</b> |                    |
| Original Scale<br><b>N.T.S</b> | Date<br><b>19/11/19</b>            | Rev<br><b>0</b>                       | Paper<br><b>A3</b> |

P6100/2410/4986/Fig A1

## Steve Gronow

---

**From:** Malcolm Earl [REDACTED]  
**Sent:** 15 June 2021 10:20  
**To:** Steve Gronow  
**Subject:** FW: CL:AIRE Def. of Waste Code of Practice Declaration - 11/06/2021 08:12:52

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**ATTENTION:** Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.  
**CAUTION:** Do not click on links or open attachments you do not trust.

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Hi Steve

See below the receipt from Claire for Arundel declaration.

Any queries please call me.

Regards

Malcolm

Malcolm Earl

Intégral Géotechnique (Wales) Limited  
7 Beddau Way  
Castlegate Business Park  
Caerphilly  
CF82 2AX

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**From:** Yueming Lu [REDACTED]  
**Sent:** 15 June 2021 10:15

**Subject:** CL:AIRE Def. of Waste Code of Practice Declaration - 11/06/2021 08:12:52

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|                                                                                           |                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Timestamp                                                                                 | 11/06/2021 08:12:52                                                                                                                                                                                       |
| Qualified Person Name                                                                     | Malcolm Earl                                                                                                                                                                                              |
| Qualified Person Number                                                                   | QP175                                                                                                                                                                                                     |
| 1. This Declaration relates to -                                                          | Site of Origin - Route A: Land affected by contamination or suspected of being affected by contamination.                                                                                                 |
| 2. Proposed Volumes                                                                       | 4900                                                                                                                                                                                                      |
| 3a. Site of origin - name of site owner, address & contact details                        | National Grid Property Holdings Ltd, National Grid House, Warwick Technology Park, Gallows Hill, Warwick CV34 6DA. Tel: 01926 [REDACTED]                                                                  |
| 3b. Site of origin - site name & address                                                  | Former Holder Station, Ford Road, Arundel BN18 9DX                                                                                                                                                        |
| 3c. Site of origin - developer name, address & contact details                            | National Grid Property Holdings Ltd, National Grid House, Warwick [REDACTED]                                                                                                                              |
| 4a. Donor Site - developer name, address & contact details                                | [REDACTED]                                                                                                                                                                                                |
| 4b. Donor Site - site name & address                                                      |                                                                                                                                                                                                           |
| 4c. Receiver Site - developer name, address & contact details                             |                                                                                                                                                                                                           |
| 4d. Receiver Site - site name & address                                                   |                                                                                                                                                                                                           |
| 5a. Soil Treatment Facility / Hub site owner / operator - name, address & contact details | Celtic Technologies Ltd, Columbus House, Greenmeadow Springs, Tennysonalein, Co [REDACTED]                                                                                                                |
| 5b. EA / NRW Permit number for Mobile Treatment Plant or Fixed Soil Treatment site        | Celtic Technologies Ltd Permit no. is EPR/AP3195FG                                                                                                                                                        |
| 5c. Donor site - developer name, address & contact details                                |                                                                                                                                                                                                           |
| 5d. Donor site - name & address                                                           |                                                                                                                                                                                                           |
| 5e. Receiver site - developer name, address & contact details                             |                                                                                                                                                                                                           |
| 5f. Receiver site name and address                                                        |                                                                                                                                                                                                           |
| 6a. Local Authority name, address                                                         | Arun District Council, Arun Civic Centre, Maltravers Road, Littlehampton, West Sussex BN17 5LF. Tel: 01903 737755                                                                                         |
| 6b. Local Authority - name and contact details:                                           | Arun District Council, Arun Civic Centre, Maltravers Road, Littlehampton, West Sussex BN17 5LF. Tel: 01903 737755<br>LA Environmental Protection Officer contact name is Chima Umunnakwe ([REDACTED]) 336 |
| 6c. Environment Agency / Natural Resources Wales local office address & contact details   | [REDACTED]                                                                                                                                                                                                |
| 7. How will payment be made                                                               |                                                                                                                                                                                                           |

|                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8. Who will pay the Declaration fee?</b>                                                                                                                                                                                                                                                                                                             | Celtic Technologies Ltd – Ruth Dill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>9. Email address of person identified in Q8</b>                                                                                                                                                                                                                                                                                                      | Ruth D [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>10. Terms &amp; Conditions</b>                                                                                                                                                                                                                                                                                                                       | Person identified in Q8 has read and agreed to the Terms & Conditions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>11. Please provide a purchase order number</b>                                                                                                                                                                                                                                                                                                       | Quote - Arundel MMP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>12a. I confirm that -</b>                                                                                                                                                                                                                                                                                                                            | I satisfy the Qualified Person requirements set out in Appendix 6 of the Definition of Waste: Development Industry Code of Practice to complete this Declaration. I have reviewed the Materials Management Plan for the above project. I have reviewed the risk assessment. I have reviewed the Remediation Strategy/Design Statement covering the above site. I have requested correspondence / documentation relating to the development and how that relates to the use of materials.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>12b. Please provide a reference for the Materials Management Plan</b>                                                                                                                                                                                                                                                                                | Celtic Technologies - Former Holder Station, Ford Road, Arundel R1820.21.5083 rev 2 Arundel MMP.doc 28/05/21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>12c. Please provide a reference for the Risk Assessment</b>                                                                                                                                                                                                                                                                                          | Celtic Technologies - Remediation Implementation & Verification Plan R1820/21/5045, March 2021. Section 3.0 Detailed quantitative Risk Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>12d. Please provide a reference for the Remediation Strategy or Design Statement documents.</b>                                                                                                                                                                                                                                                      | Ford Road, Arundel National Grid Property Holdings<br>R1820/21/5045 Rev 2 March 2021<br>Remediation Implementation And Verification Plan<br>D1820/A1: Location Plan of Site,<br>D1820/A4 Remediation Areas<br>D1820/A5 Remediation Layout Plan.<br>Specification - Remediation Implementation & Verification Plan<br>R1820/21/5045, March 2021 Section 3.4 Adopted SACS Table 6 Soil SAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>12e. Please provide a reference for the Verification Plan</b>                                                                                                                                                                                                                                                                                        | Celtic Technologies – Remediation Implementation & Verification Plan R1820/21/5045                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>12f. Identify the organisation and individual(s) (email address / contact details) with responsibility for producing the Verification Report</b>                                                                                                                                                                                                     | [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>12g. Please provide an estimated production date for the Verification Report.</b>                                                                                                                                                                                                                                                                    | 30/09/2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>12h. Please reference other supporting documents as required in the MMP. e.g. as a minimum this must include - location plans, schematics, Desk Top Study, mass balance calculations, contingency arrangements, tracking system. Where these are part of another document, this should be explained here. It is recommended each item is listed.</b> | Ford Road, Arundel National Grid Property Holdings<br>R1820/21/5045 Rev 2 March 2021<br>Remediation Implementation And Verification Plan<br>D1820/A4 Remediation Areas and D1820/A5 Remediation Layout Plan, show the areas of excavation together with the stockpiling and processing areas. The materials will generally be replaced within their areas of excavation, following appropriate assessment and processing requirements.<br>D1820/A1: Location Plan of Site<br><br>Tracking system is compliant. A description is included within the Remediation Implementation and Verification Plan report (ref R1820/21/8045) and the material movements will be recorded within the attached tracker.<br><br>The contingency arrangements will on the whole be the responsibility of Celtic Technologies as the contract is an all-risk basis, but as it's an NEC3 format, we will have the ability to raise compensation events for unexpected conditions, which if accepted become the financial responsibility of the client. |



|                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>13a. I confirm that I have reviewed the following correspondence / documentation relating to the development and how that relates to the use of materials from:</b></p> | <p>a) The Local Authority, b) Environment Agency / NRW, c) Other relevant environmental regulatory bodies associated with the development, e.g. Defra, Natural England</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>13b. Please reference the correspondence with the Local Authority.</b></p>                                                                                              | <p>Planning Permission 04-Jun-2021 Application Number: AB/45/21/PL<br/>Particulars and location of development:<br/>Remediation works to mitigate potential liabilities associated with ground conditions resulting from the site's historic use as a gasworks.<br/>LA Document references:<br/>Email from Chima Umunnakwe (Environmental Protection Officer) dated 18 May 2021</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p><b>13c. Please reference the correspondence with the EA / NRW.</b></p>                                                                                                     | <p>EA Document references:<br/>Letter from Hannah Brothwell (Sustainable Places Advisor) dated 11 May 2021</p> <p>There has been engagement with the Environment Agency directly as well as through the appropriate planning channels</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><b>13d. Please reference the correspondence with other relevant regulatory bodies</b></p>                                                                                  | <p>Note from James Kenny (archaeological advisor) dated 7 May 2021</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p><b>14a. I have reviewed the planning consent including planning conditions</b></p>                                                                                         | <p>Planning Permission No. 20/0310/PA</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><b>14b. I have reviewed correspondence concerning the planning consent regarding the development from:</b></p>                                                             | <p>a) The Local Authority , b) Environment Agency / NRW, c) Other relevant environmental regulatory bodies</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>14c. Please list correspondence reviewed in 14b.</b></p>                                                                                                                | <p>Planning Permission 04-Jun-2021 Application Number: AB/45/21/PL<br/>The planning permission includes the remediation works to mitigate potential liabilities associated with ground conditions resulting from the site's historic use as a gasworks.<br/>4 Following completion of development a verification report demonstrating completion of the works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met.<br/>Letter from Hannah Brothwell (EA) (Sustainable Places Advisor) dated 11 May 2021<br/>LA Document references:<br/>Email from Chima Umunnakwe (Environmental Protection Officer) dated 18 May 2021</p>                                                                                                                                                                                                                                                           |
| <p><b>15. If planning consent is not required please explain why</b></p>                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p><b>16. I confirm that the MMP contains the information required:-</b></p>                                                                                                  | <p>The risk assessment assesses human health and environmental risks in relation to the proposed uses of all the materials in the MMP. The risk assessment concludes that the objectives of preventing harm to human health and pollution of the environment will be met if materials are used in the proposed manner., The Local Authority, the Environment Agency / Natural Resources Wales and other relevant environmental regulatory bodies have not objected to the proposed development / land remediation on the basis that the use of any material is likely to cause harm to human health or pollution of the environment. [This confirmation should be given regardless of whether planning consent is required for the activity. Also see paragraph 3.37 of the CoP.], The EA/NRW have not objected to the reuse of materials on the grounds that it a.) constitutes a waste management operation or b.) has had a previous application for an environmental permit for waste recovery refused (on the grounds that the project represents waste disposal)., The project or phase to which this Declaration applies has not yet commenced; this is not a retrospective application</p> |

of the DoW CoP., The project does not involve land-spreading / agricultural re-profiling.

Kind regards

---

**CL:AIRE**

Web: 

Leading Sustainable Land Reuse

*CL:AIRE is a Charitable Company Limited by Guarantee/Registered in England No. 3740055/Entrust Enrolment No. 118820/Registered Charity No. 1075611*





Consent ID: 17742

## TEMPORARY CONSENT TO DISCHARGE EFFLUENT

Southern Water Services hereby permit Celtic Technologies Ltd, Unit 7-8, Commerce Park, Brunel Road Theale, RG7 4AB to discharge effluent from Former Arundel Gasworks, FORD ROAD, ARUNDEL, BN18 9DX into the adjacent foul sewerage system, subject to the following conditions:

### 1. Nature of the effluent

The effluent shall consist only of Abstraction of contaminated water from site-wide excavation dewatering operations. No change may be made without the written permission of Southern Water Services.

### 2. Location of the site and sewers affected

The effluent shall only be discharged into the foul sewerage system located at Ford Road. No change shall be made in location of the discharge point(s) without written permission of Southern Water Services.

### 3. Maximum quantity to be discharged in any one day

The maximum quantity of effluent discharged in any one period of twenty-four hours shall not exceed 85 cubic metres without the written consent of Southern Water Services.

### 4. Maximum rate of discharge

The maximum rate at which The Trade Effluent may be discharged shall not exceed 1 litres/sec.

### 5. Time of discharge

No effluent shall be discharged except between the hours of 08:00 hours and 18:00 hours in any one day.

### 6. Matters strictly prohibited from entry to the sewer

The following substances are strictly prohibited from entry to the Company's sewers and shall not be contained in the effluent:

6.1 Any petroleum spirit or other inflammable solvents.

6.2 Calcium Carbide.

6.3 Any organic solvents

6.4 Any other substances, either alone or in combination with any other matter lawfully present in the Company's sewers, likely to injure the said sewers or to interfere with the free flow of their contents or to affect prejudicially the treatment and disposal of their contents or to be dangerous to the health of the men working in the sewers or at the Wastewater Treatment Works or to make specially difficult or expensive any process of purification or to pollute in any way the watercourse, estuary or coastal water into which the effluent will eventually discharge.

### 7. Limitations on effluent composition

The effluent must not contain any substance currently on the Priority Substances 2008/105/EC (as amended) listing in greater than background concentration.

### 8. Measurement and monitoring of the discharge

8.1 The method of measuring and recording the volume of effluent discharged under the terms of this Temporary Consent shall be as previously agreed in writing with Southern Water Services. The Consentee shall keep records of the volume of effluent discharged and return those records to Southern Water Services on demand.

8.2 The Consentee is responsible for ensuring the effluent discharged complies with the terms of this Temporary Consent. Southern Water Services may carry out additional monitoring of the discharge that will be recharged to the Consentee.

## **9. Payment**

The Consentee shall pay to their Sewerage Retailer charges for compliance monitoring of this temporary discharge and the disposal of the effluent, as previously notified and agreed in writing by the Consentee. All such charges shall become due and payable on demand.

## **10. Duration of the Temporary Consent**

The effluent may only be discharged during the period commencing from the date of this Temporary Consent and ending 6 calendar months thereafter.

## **11. Termination**

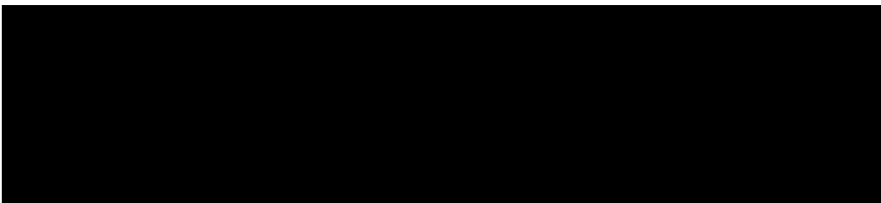
Southern Water Services may terminate this licence on 24 hours written notice if the Consentee breaches any of the terms of this Temporary Consent.

## **12. Waiver**

Failure by Southern Water Services to enforce any of the terms of this Temporary Consent shall not be a waiver of them nor of the right at any time subsequently to enforce all the terms of this Temporary Consent.

Dated this 11/05/2021.

Signed:

A large black rectangular box redacting the signature of the Trade Effluent Inspector.

Trade Effluent Inspector

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** RE: Deployment Application for Arundel Gasworks  
**Date:** 06 August 2021 07:45:53  
**Attachments:** [image008.png](#)  
[image009.jpg](#)  
[image010.jpg](#)  
[image011.jpg](#)  
[image012.jpg](#)  
[image013.jpg](#)  
[image014.png](#)  
[image015.png](#)

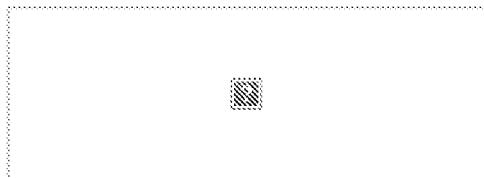
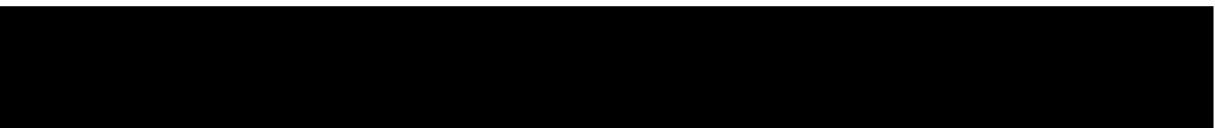
**ATTENTION:** Assurez-vous que le contenu soit de confiance avant d'ouvrir une pièce jointe ou un hyperlien.  
**CAUTION:** Do not click on links or open attachments you do not trust.

Good Morning,

Thank you for informing us of the end of works at this site and we acknowledge receipt of your notification.

Kind regards

**Nicola Waller**  
Permitting Support Advisor – National Permitting Service



---

**From:** Steve Gronow [mailto:Steve.Gronow@arkis-uk.com]  
**Sent:** 05 August 2021 16:02  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** RE: Deployment Application for Arundel Gasworks

Dear sir/madam,

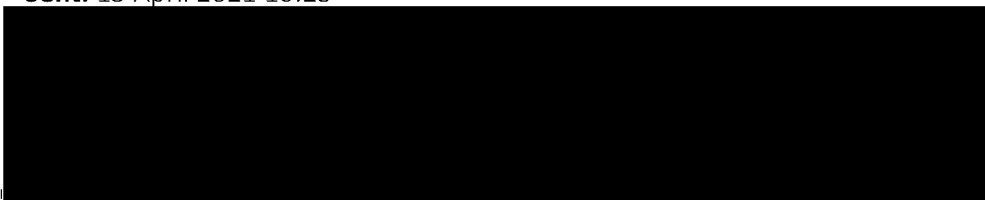
Further to the deployment of our Environmental Permit (mobile treatment plant) reference EPR/AP3195FG, deployed at the Arundel Gasworks, I can confirm that the works have now been successfully completed and we no longer require the deployment at this site. If you could please confirm receipt of this notification, it would be much appreciated. If you have any queries or require any further information, please do not hesitate to contact me.

Kind regards

Steve

---

**From:** Steve Gronow  
**Sent:** 15 April 2021 16:23



**Subject:** Deployment Application for Arundel Gasworks

Please see attached deployment application for Celtic's Environmental Permit (mobile treatment plant) reference EPR/AP3195FG, which we are wanting to deploy at Arundel Gasworks. The reference for the payment that has been made is PSCDEPCELTIC820.

If you have any queries or require any further information, please let me know.

Kind regards

Steve

Steve Gronow, *BSc (Hons), MCIWM*

Project Manager

Celtic Technologies & Biogenie, subsidiaries of EnGlobe Corp.

Columbus House

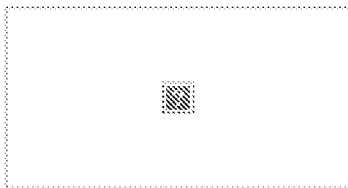
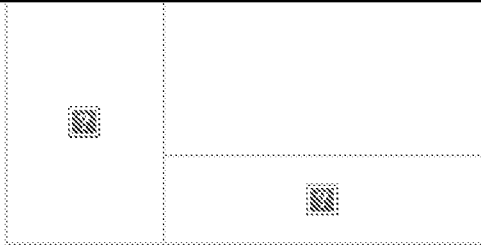
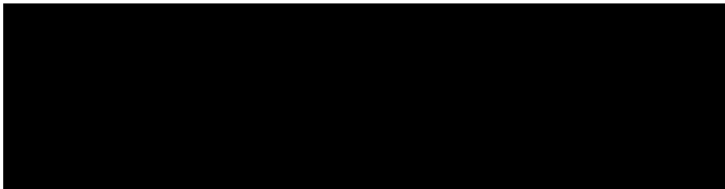
Greenmeadow Springs

Tongwynlais

Cardiff

CF15 7NE

United Kingdom



**Following government requirements on us all to limit non-essential travel, we are currently only working on a minimal number of deemed “operationally essential” remediation sites, identified to us to be essential work by clients where they have to maintain progress. All works are proceeding following strict social distancing guidelines and comprehensive Englobe company procedures. These include our Soil Treatment facilities (STF’s) across the UK. All Englobe UK staff that are home office working are contactable through our standard phone systems, emails and mobiles and as always available to support your enquiry.**

**We intend to continue with as near “normal” working to deliver environmental remediation contracting and hazardous Soil Treatment, as these exceptional circumstances permit.**

Contaminated Soil to treat offsite? Have you visited Biogenie's website?





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Follow Celtic's Twitter feed



@CelticTechLtd



Please consider the environment, only print this email if necessary

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## **APPENDIX C      PHOTOGRAPHS**

Plate 1 – View of access track from Ford Road prior to works



Plate 2 – View of Original Site Gate



Plate 3 – View of new gate



Plate 4 – View from western corner looking east from Ford Road





Plate 5 – View of SSE sub-station



Plate 6 – Excavation of F4 in readiness for water treatment system area



Plate 7 – View of water treatment system



Plate 8 – View of vegetation clearance stockpile



Plate 9 – View of Area 1 stockpiling overburden from gas governor area

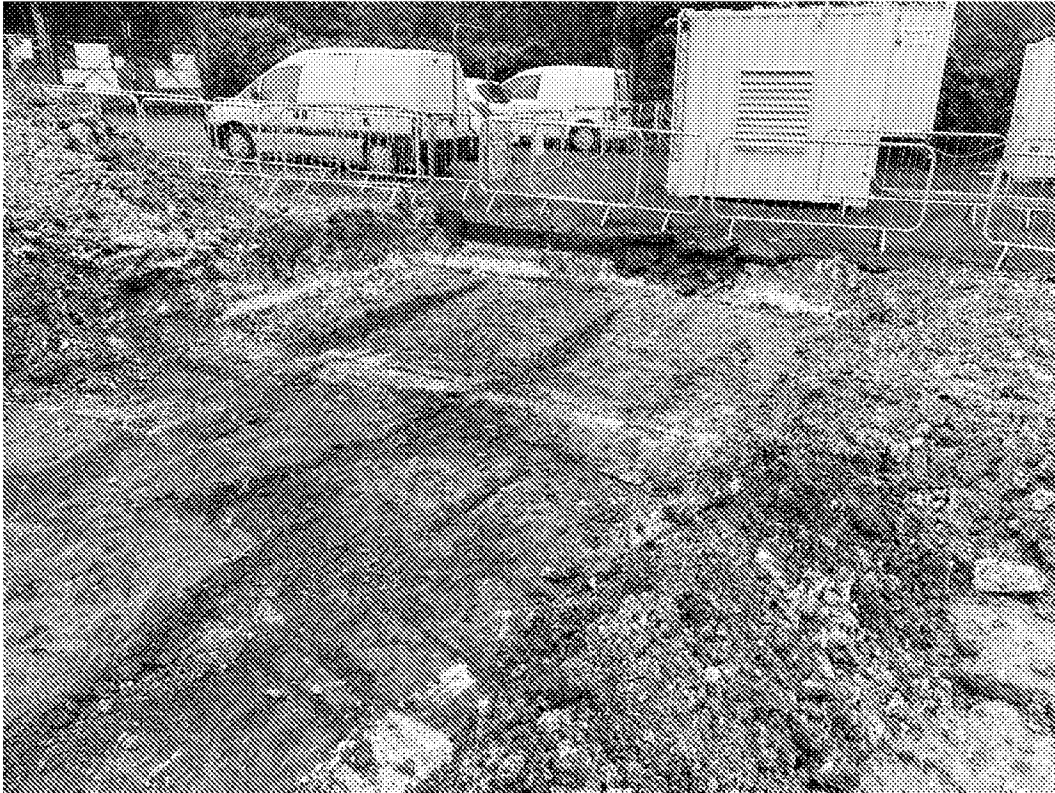


Plate 10 – View of Area 1 exposed below ground concrete chambers looking north (Grid D7)





Plate 11 – View of Area 1 Grid E7 made ground being excavated



Pate 12 – View of Area 1 car tyres encountered within concrete chamber



Plate 13 – View of Area 1 concrete chamber after removal



Plate 14 – View of Area 1 following removal of concrete obstruction (Grid E6)



Plate 15 – View of further concrete chambers being removed





Plate 16 – View of natural soils encountered following made ground removal (Grid E7)



Plate 17 – View of concrete chambers following removal in Area 1



Plate 18 – View of natural soils encountered following made ground removal (Grid D7)



Plate 19 – View of natural soils encountered following made ground removal (Grid D6)





Plate 20 – View of made ground and natural soils encountered around gas holder base in grid A7



Plate 21 – Exposing the gas holder base across grid A7



Plate 22 – Exposing the gas holder base across grid B7



Plate 23 – Exposing the gas holder base across grid B7/C7





Plate 24 – Re-compacting the made ground across Area 1



Plate 25 – Capping layer placed across Area 1



Plate 26 – Excavating to natural ground in Area 2



Plate 27 – Re-compacting the made ground in Area 2



Plate 28 – Capping layer placed across Area 2





Plate 29 – Gasholder base in Area 3



Plate 30 – Excavation to natural ground in Area 3 Grids B1 – B4



Plate 31 – Segregation of small amounts of contamination encountered from Areas 1-3



Plate 32 – Excavation to natural ground in grid C5





Plate 33 – Excavation to natural ground in grid C1 / C2



Plate 34 – Re-compacting made ground across Area 3



Plate 35 – Tarry wood exposed in historic feature no. 4 within Area 4



Plate 36 – Covering contaminated materials with odour suppressing foam



Plate 37 – Contaminated materials within former gasholder (feature no. 4)





Plate 38 – Excavating contaminated materials within former gasholder (feature no. 4)



Plate 39 – Stabilisation treatment of contaminated materials within former gasholder  
(feature no. 4)



Plate 40 – Looking east whilst excavating contaminated materials and exposing below ground brick wall structures in grid B2



Plate 41 – Looking northwest of same area as above in grid B2





Plate 42 – Contaminated materials being excavated in grid E2



Plate 43 – Addition of PFA and cement grout to contaminated materials in grid E2



Plate 44 – Stabilisation treatment in grid E2



Plate 45 – Stabilisation treatment in grid F1



Plate 46 – Exposed low pressure gas pipe in grid ref E1, Area 4



Plate 47 – Stabilisation treatment in grid F2





Plate 48 – Made ground backfilled in Grid refs E3 and F3 within Area 4



Plate 49 – Grout mixing area with water mist sprayer to dampen potential dust emissions





Plate 50 – Environmental monitoring point 4 in northern corner



Plate 51 – Scrap metal stockpile



Plate 52 – Further concrete obstructions removed from Area 4



Plate 53 – Use of dust suppression bowser along haul route



Plate 54 – View of site following placement of capping layer



**APPENDIX D      STABILISATION TANK TEST DATA (TO FOLLOW)**

## APPENDIX E      EXPORT DATA

## Registration CBDU44059 – SOUTH COAST SKIPS LTD

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Registration number | CBDU44059                                                                      |
| Business name       | SOUTH COAST SKIPS LTD                                                          |
| Company number      | 04796275                                                                       |
| Registered as       | Carrier, Broker, Dealer - Upper Tier<br><a href="#">» Help with tier types</a> |
| Applicant type      | Company                                                                        |
| Registration date:  | 11/02/2019                                                                     |
| Expiry date:        | 10/02/2022                                                                     |

### Business address

|          |                                                     |
|----------|-----------------------------------------------------|
| Address  | SOUTH COAST SKIP HIRE, FORD ROAD, ARUNDEL, BN18 0BD |
| Postcode | BN18 0BD                                            |

## Registration CBDU89511 – PETER NORRIS (HAULAGE) LTD

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Registration number | CBDU89511                                                                      |
| Business name       | PETER NORRIS (HAULAGE) LTD                                                     |
| Company number      | 01047883                                                                       |
| Registered as       | Carrier, Broker, Dealer - Upper Tier<br><a href="#">» Help with tier types</a> |
| Applicant type      | Company                                                                        |
| Registration date:  | 12/04/2019                                                                     |
| Expiry date:        | 15/05/2022                                                                     |

### Business address

|          |                                                                  |
|----------|------------------------------------------------------------------|
| Address  | PETER NORRIS (HAULAGE) LTD, STATION APPROACH, ORPINGTON, BR5 2NB |
| Postcode | BR5 2NB                                                          |

## Registration CBDU147665 – MATTHEWS (SUSSEX) LTD

|                     |                                                                       |
|---------------------|-----------------------------------------------------------------------|
| Registration number | CBDU147665                                                            |
| Business name       | MATTHEWS (SUSSEX) LTD                                                 |
| Company number      | 02682383                                                              |
| Registered as       | Carrier Dealer - Upper Tier<br><a href="#">▶ Help with tier types</a> |
| Applicant type      | Company                                                               |
| Registration date:  | 06/12/2019                                                            |
| Expiry date:        | 24/12/2022                                                            |

### Business address

|          |                                                             |
|----------|-------------------------------------------------------------|
| Address  | MATTHEWS M CONTRACTORS, STEPHENSON PLACE, CRAWLEY, RH10 1TL |
| Postcode | RH10 1TL                                                    |

## Registration CBDU80960 – ROBERT HOPKINS ENVIRONMENTAL SERVICES LTD

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Registration number | CBDU80960                                                                      |
| Business name       | ROBERT HOPKINS ENVIRONMENTAL SERVICES LTD                                      |
| Company number      | 03604826                                                                       |
| Registered as       | Carrier, Broker, Dealer - Upper Tier<br><a href="#">▶ Help with tier types</a> |
| Applicant type      | Company                                                                        |
| Registration date:  | 06/02/2019                                                                     |
| Expiry date:        | 18/02/2022                                                                     |

### Business address

|          |                                                                     |
|----------|---------------------------------------------------------------------|
| Address  | ENVIRONMENTAL SERVICES LTD, BULLOCK STREET, WEST BRIDGMICH, B75 7HE |
| Postcode | B75 7HE                                                             |



## Registration CBDU85928 – R M PETTETT LTD

|                     |                                                                       |
|---------------------|-----------------------------------------------------------------------|
| Registration number | CBDU85928                                                             |
| Business name       | R M PETTETT LTD                                                       |
| Company number      | 04665752                                                              |
| Registered as       | Carrier Dealer - Upper Tier<br><a href="#">» Help with tier types</a> |
| Applicant type      | Company                                                               |
| Registration date:  | 28/01/2019                                                            |
| Expiry date:        | 23/02/2022                                                            |

### Business address

|          |                                                |
|----------|------------------------------------------------|
| Address  | STANE FARM, STANE STREET, PULBOROUGH, RH20 1BL |
| Postcode | RH20 1BL                                       |

## Registration CBDU96863 – Shield Environmental Services Ltd.

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Registration number | CBDU96863                                                                      |
| Business name       | Shield Environmental Services Ltd.                                             |
| Company number      | 01889667                                                                       |
| Registered as       | Carrier, Broker, Dealer - Upper Tier<br><a href="#">» Help with tier types</a> |
| Applicant type      | Company                                                                        |
| Registration date:  | 27/02/2019                                                                     |
| Expiry date:        | 02/04/2022                                                                     |

### Business address

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| Address  | SHIELD ENVIRONMENTAL SERVICES LTD, CROWN WAY, BRISTOL, BS30 6XJ |
| Postcode | BS30 6XJ                                                        |



Unit 9, Mango 2, Rodford Industrial Estate



Tipper Hire • Plant Hire • Cartway  
Construction Waste Recycling  
Hoggin • Crushed Concrete  
Chalk • Bulk FFI Materials  
As Dig & Screened Topsoil

## CONVEYANCE WASTE TRANSFER NOTE

39653

### COLLECTED FROM

Customer Name GRS Road Stone Date 6.7.21  
Site Address Ford Rd, Arundel Time on Site \_\_\_\_\_ Time off site \_\_\_\_\_

Quantity 1x Load

### DESCRIPTION OF MATERIALS

Hard Core

Waste/Material received from:

### Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. OR044059 Reg. Authority East of Chichester  
Signature \_\_\_\_\_ Vehicle Reg. [Redacted]

CUBIC METRES

TONNE

DAY WORK

Gross Weight

Total Hours

Tare Weight

Less Breaks

Net Weight

Excess Time

HOURS

1x Load

### Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. \_\_\_\_\_ Issued by \_\_\_\_\_  
Registered Waste Carrier \_\_\_\_\_ Issued by \_\_\_\_\_  
Signature for Receipt of Waste/Material \_\_\_\_\_ Date 6.7.21

Certified that the above parties  
which Waste/Material is being  
metre or tonne.

ing conveyed in the vehicle described,  
for the sole thereof made by the cubic

MINIMUM HIRE & HOURS  
Customers ordering vehicles off

15 minutes for Machine Loading  
ability



Unit 9, Hangar 3, Rufford Industrial Estate  
East, Rufford, Cheshire, S611 0PS

Tipper Hire • Plant Hire • Cartway  
Construction Waste Recycling  
Hoggin • Crushed Concrete  
Chalk • Bulk Fill Materials  
As Dug & Screened Topsoil

CONVEYANCE  
WASTE TRANSFER NOTE  
40919

COLLECTED FROM

Customer Name GRS Rockliffe Date 6/7/2021  
Site Address C10 Spa Works Time on Site --- Time off site ---  
Ford Rd. BN18 9DX Quantity 1x Load

DESCRIPTION OF MATERIALS

Hardware

Waste/Material received from:

Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. 080U44059 Reg. Authority [Redacted]  
Signature [Redacted] Vehicle Reg No. [Redacted]

CUBIC METRES

1x Load

TOLINE

Gross Weight

---

Tare Weight

---

Net Weight

---

DAY WORK

Total Hours

---

Less Breaks

---

Trav. Time

---

HOURS

---

Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material [Redacted] Date 6/7/2021

Certified that the above particulars are true and relate to the Waste/Material, being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metre or tonnes.

MINIMUM HIRE & HOURS: All Hires are charged Drop in Drop. Maximum 15 minutes for Machine Loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.



Unit 9, Hangar 1, Redford Industrial Estate  
Ford, Arundel, West Sussex BN18 1RS



Tipper Hire • Plant Hire • Cartaway  
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Chalk • Bulk Fill Materials  
As Dig & Screened Topsoil

CONVEYANCE  
WASTE TRANSFER NOTE  
40917

COLLECTED FROM

Customer Name GRS Roadstone Date 6/7/2011  
Site Address C10 Sea Works Time on Site --- Time off site ---  
Ford Rd. BN18 9DA  
Quantity 1.5 Load

DESCRIPTION OF MATERIALS

Manholes

Waste/Material received from:

Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. CSD144059 Reg. Authority E. A. Stifford  
Signature --- Vehicle Reg. No. ---

CUBIC METRES

1.5 Load

TONNE

Gross Weight ---

Tare Weight ---

Net Weight ---

DAY WORK

Total Hours ---

Less Breaks ---

Work Time ---

HOURS ---

Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material --- Date 6/7/2011

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metre or tonne.

MINIMUM HIRE & HOURS: All Hires are charged Depot to Depot. Maximum 15 minutes for Machine Loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.



Unit 9, Hanger 1, Rufford Industrial Estate  
Rufford, Arundel, West Sussex BN15 8BE

Tipper Hire • Plant Hire • Cartway  
Construction Waste Re-cycling  
Hoggin • Crushed Concrete  
Chalk • Bulk Fill Materials  
As Dug & Screened Topsoil

CONVEYANCE  
WASTE TRANSFER NOTE  
40903

COLLECTED FROM

Customer Name GRS Roadworks Date 11/11/2011  
Site Address C10 Sea Nook Time on Site --- Time off site ---  
Ford Rd, BN15 9DA  
Quantity 1 x Load

DESCRIPTION OF MATERIALS

Hardcore 170/0%

Waste/Material received from

Company/Person Collecting Waste

Name JCS  
Address Ford  
Registered Certificate No. CBDU44059 Reg. Authority E. A. Sheffield  
Signature \_\_\_\_\_ Vehicle Reg. No. [REDACTED]

CUBIC METRES

TONNE

DAY WORK

1 x Load

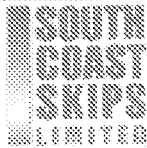
|              |            |             |            |
|--------------|------------|-------------|------------|
| Gross Weight | <u>---</u> | Total Hours | <u>---</u> |
| Tare Weight  | <u>---</u> | Less Breaks | <u>---</u> |
| Net Weight   | <u>---</u> | Trav. Time  | <u>---</u> |
|              |            | HOURS       | <u>---</u> |

Person/Company/Authority receiving Waste/Material

Name JCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material \_\_\_\_\_ Date 11/11/2011

Confirmed that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metres or tonne.

MINIMUM HIRE & HOURS: All hires are charged Depot to Depot. Maximum 15 minutes for Machine Loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.



Unit 9, Hangar 3, Rufford Industrial Estate  
Ford, Arundel, West Sussex, BN11 8 8EG

Tipper Hire • Plant Hire • Cartaway  
Construction Waste Re-cycling  
Haggins • Crushed Concrete  
Chaff • Bulk Fill Materials  
As Dig & Screened Topsoil

CONVEYANCE  
WASTE TRANSFER NOTE  
40904

COLLECTED FROM

Customer Name GRS Recyclers Ltd Date 11/7/2021  
Site Address C/O GRS Works Time on Site --- Time off site ---  
Ford Rd, BN18 9DX Quantity 1x Load

DESCRIPTION OF MATERIALS

Hardcore 17C107

Waste/Material received from

Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. Q50A14059 Reg. Authority E. A. Sheffield  
Signature --- Vehicle Reg. No. ---

CUBIC METRES

1x Load

TONNE

Gross Weight ---

Tare Weight ---

Net Weight ---

DAY WORK

Total Hours ---

Less Breaks ---

Trav. Time ---

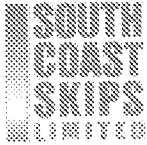
HOURS ---

Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- issued by ---  
Registered Waste Carrier --- issued by ---  
Signature for Receipt of Waste/Material --- Date 11/7/2021

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metre or tonne.

MINIMUM HIRE 8 HOURS: All hires are charged Depot to Depot. Maximum 15 minutes for Machine loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.



Unit 9, Hanger 1, Rufford Industrial Estate  
East, Arnold, West Sussex BN410 9SS

Tipper Hire • Plant Hire • Cartway  
Construction Waste Re-cycling  
Hoggin • Crushed Concrete  
Chalk • Bulk Fill Materials  
As Dug & Screened Topsoil

CONVEYANCE  
WASTE TRANSFER NOTE  
40905

COLLECTED FROM

Customer Name GRS Roadworks Date 1/11/2011  
Site Address C/O GOS WORTH Time on Site --- Time off site ---  
Ford Rd, ONTAPPO  
Quantity 1.5 Tons

DESCRIPTION OF MATERIALS

Hardcore 140707

Waste/Material received from:

Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. CEDU44039 Reg. Authority E. ---  
Signature --- Vehicle Reg. No. ---

| CUBIC METRES    | TONNE        |     | DAY WORK    |     |
|-----------------|--------------|-----|-------------|-----|
|                 |              |     | Total Hours | --- |
| <u>1.5 Tons</u> | Gross Weight | --- | Less Breaks | --- |
|                 | Tare Weight  | --- | Inv. Time   | --- |
|                 | Net Weight   | --- | HOURS       | --- |

Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material --- Date 1/11/2011

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metre or tonnes.

MINIMUM HIRE 8 HOURS: All Hires are charged Depot to Depot. Maximum 15 minutes for Machine Loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.





Unit 9, Hanger 1, Refined Industrial Estate  
10018 0183

Tipper Hire • Plant Hire • Cartway  
Construction Waste Re-cycling  
Hoggin • Crushed Concrete  
Chalk • Bulk Fill Materials  
As Dug & Screened Topsoil

# CONVEYANCE WASTE TRANSFER NOTE

40906

## COLLECTED FROM

Customer Name GPS Roadwork Date 11/7/2021  
Site Address C10 Gas Works Time on Site --- Time off site ---  
Ford Rd, DN 12 5PX  
Quantity 1 x Load

## DESCRIPTION OF MATERIALS

Waste/Material received from:

Hardcore 170104

## Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. CRDU44059 Reg. Authority E [REDACTED]  
Signature [REDACTED] Vehicle Reg. No. [REDACTED]

## CUBIC METRES

## TONNE

## DAY WORK

1 x Load

Gross Weight ---

Total Hours ---

Tare Weight ---

Less Breaks ---

Net Weight ---

Trav. Time ---

HOURS ---

## Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material --- Date 11/7/2021

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described, which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic metres or tonne

MINIMUM HIRE 8 HOURS - All Hires are charged Depot to Depot. Maximum 15 minutes for Machine Loading  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility



Tipper Hire • Plaster  
Construction Waste Re-cycling  
Maggins • Crushed Concrete  
Chalk • Bulk Fill Materials  
As Dug & Screened Topsoil

Unit 9, Hangar 3, Radford Industrial Estate  
Leam Road, Warrington, BN18 9DS

CONVEYANCE  
WASTE TRANSFER NOTE  
40902

COLLECTED FROM

Customer Name GRS Roadstone Date 1/7/2021  
Address C10 Gas Works, Time on Site --- Time off site ---  
Ford Rd BN18 9DX  
PO 709207 Quantity 1x Load

DESCRIPTION OF MATERIALS

Hardcore 170107

Waste/Material received from:

Company/Person Collecting Waste

Name SCS  
Address Ford  
Registered Certificate No. CBD044039 Reg. Authority E. A. ---  
Signature --- Vehicle Reg. No. ---

CUBIC METRES

1x Load

TONNE

Gross Weight ---

Tare Weight ---

Net Weight ---

DAY WORK

Total Hours ---

Less Breaks ---

Trav. Time ---

HOURS ---

Person/Company/Authority receiving Waste/Material

Name SCS  
Address Ford  
Waste Disposal Licence No. --- Issued by ---  
Registered Waste Carrier --- Issued by ---  
Signature for Receipt of Waste/Material --- Date 1/7/2021

Certified that the above particulars are true and relate to the Waste/Materials being conveyed in the vehicle described,  
which Waste/Material is being conveyed in pursuance of a sale or an agreement for the sale thereof made by the cubic  
metres or tonne.

MINIMUM HIRE 8 HOURS; all Hires are charged Depot to Depot. Maximum 15 minutes for Machine loading.  
Customers ordering vehicles off the Public Road do so entirely at their own responsibility.



# Conveyance & Waste Transfer Note

Unit 9, Hanger 3  
Ridford Industrial Estate  
Ford, Aylesford, West Sussex. BN9 6 0BS  
Tel: Waste Carrier Registration OBDU69437



Ticket No

DATE

Customer  
Contact  
Order No

Location  
Address

## Producer's Certificate

Container  
Quantity  
Service  
Extra  
SIC Code  
Info  
Sec 62 No

Brief  
Description  
of waste

Signature  
PRINT NAME  
Date  
Time

## Disposal Certificate

Vehicle Reg No  
Driver's  
Signature  
PRINT NAME

Disposer's  
Signature  
PRINT NAME

Disposal Site  
EAWML/10146

Date

Time

Ticket No

NO ASBESTOS, RUBBER TRACKS,  
GAS CYLINDERS, TYRES, TREE  
ROOTS, BATTERIES, MATTRESSES,  
FRIDGES, FREEZERS, PAINTS,  
LIQUIDS OR CHEMICALS WITHOUT  
PRIOR ARRANGEMENT.

Overloaded bins will  
be refused collection.

I confirm that I have fulfilled my duty to apply the  
waste hierarchy as required by Regulation 12 of the  
Waste (England and Wales) Regulations 2011

Net price  
Total  
VAT

VAT No. 819 1570 23

# Conveyance & Waste Transfer Note

Unit 9, Hanger 3  
Ridford Industrial Estate  
Ford, Arundel, West Sussex BN16 9BS

Tel: Waste Carrier Registration CBDU59437

Ticket No



DATE

Customer

Contact

Order No

Location  
Address

## Producer's Certificate

TEL: 07525 663790

Container

Quantity

Service

Extra

SIC Code

Info

Sec 62 No

Brief

Description

of waste

Signature

PRINT NAME

Date

Time

## Disposal Certificate

Vehicle Reg No

Driver's

Signature

PRINT NAME

Ticket No

Disposer's

Signature

PRINT NAME

Disposal Site

EAWML/10146

Date

Time

NO ASBESTOS, RUBBER TRACKS,  
GAS CYLINDERS, TYRES, TREE  
ROOTS, BATTERIES, MATTRESSES,  
FRIDGES, FREEZERS, PAINTS,  
LIQUIDS OR CHEMICALS WITHOUT  
PRIOR ARRANGEMENT

Overloaded bins will  
be refused collection.

I confirm that I have filled my bin to comply with  
waste hierarchy as required by Regulation 12 of the  
Waste (England and Wales) Regulations 2011

Net price  
Total  
VAT

£  
£  
£

VAT No. 819 157023



# Conveyance & Waste Transfer Note

Unit 9, Hangar 3  
Rusford Industrial Estate  
Ford, Arundel, West Sussex BN18 0BS



Tel: [ ]  
Waste Carrier Registration CBOU59437

Ticket No [ ]

|          |     |          |     |      |     |
|----------|-----|----------|-----|------|-----|
| Customer | [ ] | Location | [ ] | DATE | [ ] |
| Contact  | [ ] | Address  | [ ] |      |     |
| Order No | [ ] |          |     |      |     |

## Producer's Certificate

|           |     |             |     |
|-----------|-----|-------------|-----|
| Container | [ ] | Brief       | [ ] |
| Quantity  | [ ] | Description | [ ] |
| Service   | [ ] | of waste    | [ ] |
| Extra     | [ ] | Signature   | [ ] |
| SIC Code  | [ ] | PRINT NAME  | [ ] |
| Info      | [ ] | Date        | [ ] |
| Sec 62 No | [ ] | Time        | [ ] |

## Disposal Certificate

|                |     |            |     |
|----------------|-----|------------|-----|
| Vehicle Reg No | [ ] | Ticket No  | [ ] |
| Driver's       | [ ] | Disposer's | [ ] |
| Signature      | [ ] | Signature  | [ ] |
| PRINT NAME     | [ ] | PRINT NAME | [ ] |
| Disposal Site  | [ ] | Date       | [ ] |
|                | [ ] | Time       | [ ] |

NO ASBESTOS, RUBBER TRACKS,  
GAS CYLINDERS, TYRES, TREE  
ROOTS, BATTERIES, MATTER (IS,  
FRIDGES, FREEZERS, PAINTS,  
LIQUIDS OR CHEMICALS WITHOUT  
PRIOR ARRANGEMENT.

Overloaded bins will  
be refused collection.

I confirm that I have fulfilled my duty to apply the  
waste hierarchy as required by Regulation 12 of the  
Waste (England and Wales) Regulations 2011

|           |   |
|-----------|---|
| Net price | £ |
| Total     | £ |
| VAT       | £ |

VAT No. 319 1570 23



Conveyance & Waste Transfer Note

Unit 9, Hanger 3  
Rudford Industrial Estate  
Ford, Arundel, West Sussex BN18 0BS

Tel: Waste Carrier Registration CB01U50437

Ticket No

Customer  
Contact  
Order No

Location  
Address

DATE

Producer's Certificate

Container  
Quantity  
Service  
Extra  
SIC Code  
Info  
Sac 62 No

Brief  
Description  
of waste

Signature

PRINT NAME

Date

Time

Disposal Certificate

Vehicle Reg No  
Driver's  
Signature  
PRINT NAME

Ticket No

Disposer's  
Signature

PRINT NAME

Disposal Site

EAWML/10146

Date

Time

NO ASBESTOS, RUBBER TRACKS,  
GAS CYLINDERS, TYRES, TREE  
ROOTS, BATTERIES, MATTHESSES,  
FRIDGES, FREEZE, PAINTS,  
LIQUIDS OR CHEMICALS WITHOUT  
PRIOR ARRANGEMENT.

Overloaded bins will  
be refused collection.

I confirm that I have fulfilled my duty to supply the  
waste hierarchy as required by Regulation 12 of the  
Waste (England and Wales) Regulations 2011

Net price  
Total  
VAT

VAT No. 819 1570 23

# Conveyance Waste Transfer Note

Unit 9, Hanger 3  
Ridford Industrial Estate  
Ford, Arundel, West Sussex, BN18 9BS

To: Waste Carrier Registration CEDU58437

Ticket No



DATE

Location  
Address

Customer  
Contact  
Order No

## Producer's Certificate

TEL: 01243 25 2437766

Container  
Quantity  
Service  
Extra  
SIC Code  
Info  
SIC 82 No

Brief  
Description  
of waste  
Signature  
PRINT NAME  
Date  
Time

## Disposal Certificate

Vehicle Reg No  
Driver's  
Signature  
PRINT NAME  
Disposal Site  
EAWML10146

Disposer's  
Signature  
PRINT NAME  
Ticket No  
Date  
Time

NO ASBESTOS, RUBBER TRACKS,  
GAS CYLINDERS, TYRES, TREE  
ROOTS, BATTERIES, MATTRESSES,  
FRIDGES, FREEZERS, PAINTS,  
LIQUIDS OR CHEMICALS WITHOUT  
PRIOR ARRANGEMENT.

Overloaded bins will  
be refused collection.

I confirm that I have fulfilled my duty to supply the  
waste hierarchy as required by Regulation 12 of the  
Waste (England and Wales) Regulations 2011

Net price  
Total  
VAT

VAT No. 819 1570 23





White - Norris, Yellow - Customer, Pink & Blue - Haulier, Green - Tip  
Skips, Grabs, Tippers, Roll on offs, Tipping and Aggregates



## WASTE TRANSFER NOTE

|                |              |
|----------------|--------------|
| Ticket         | 146214       |
| Additional No: |              |
| Date:          | 28/7/2021    |
| Vehicle Reg:   |              |
| Driver:        | ALAN RUSSELL |
| Time On Site:  | 9.30         |
| Time Off Site: | 9.40         |

Goods Yard, Station Approach,  
St Mary Cray, Kent BR5 2NB  
T: 0208 293 1500  
WCL: CBDU 89511  
SIC: 38110/49410

| SECTION A Description of Waste / Material                                      |                                                          | Weight             | Load                                   |
|--------------------------------------------------------------------------------|----------------------------------------------------------|--------------------|----------------------------------------|
| <input type="checkbox"/> Inert Soil & Stone<br>EWC 17 05 04                    | <input type="checkbox"/> Concrete<br>EWC 17 01 01        | Gross:             | <input type="checkbox"/> Cubic yards   |
| <input type="checkbox"/> Formwork<br>EWC 17 01 02                              | <input type="checkbox"/> Mixed Municipal<br>EWC 20 03 01 |                    | <input type="checkbox"/> Cubic metres  |
| <input checked="" type="checkbox"/> Hardcore<br>EWC 17 01 02                   |                                                          | Tare:              | <input type="checkbox"/> Load          |
| <input type="checkbox"/> Mixed Construction & Demolition Waste<br>EWC 17 08 04 | Other: Please specify material                           | Nett:              | <input type="checkbox"/> Other (below) |
| <input type="checkbox"/> Non-Haz soil & stones<br>EWC 17 05 04                 | EWC                                                      | Enter:<br>EWC code |                                        |

|                                                                 |                                  |
|-----------------------------------------------------------------|----------------------------------|
| SECTION B Current Holder of Waste / Material / Collection Point |                                  |
| Name:                                                           | Norris c/o Celtic Technology     |
| Address:                                                        | Former Gas Works Ford Rd Arundel |
|                                                                 | SIC: 39.00                       |

|                                    |                         |
|------------------------------------|-------------------------|
| SECTION C Haulier Collecting Waste |                         |
| Name:                              | Matthews Sussex Ltd     |
| Address:                           | Stephensons Way Crawley |

I confirm I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England & Wales) Regulations 2011.  
I confirm I am authorised Agents Representatives, or Responsible Person. Please sign this ticket after inspecting, and agreeing quantity and quality of materials delivered  
or collected from the above site. We cannot accept any claims concerning either of the above once the vehicle has left the site and the driver has obtained a signed ticket.  
Customers ordering materials off the public road do so entirely at their own risk. No liability can be accepted.

|                                                     |                     |
|-----------------------------------------------------|---------------------|
| SECTION D Authorised Tip / Delivery Point / Daywork |                     |
| Name:                                               | Knepp Castle Estate |
| Address:                                            | West Grinstead      |

|                        |                                            |
|------------------------|--------------------------------------------|
| Customer Signature:    | Driver Signature:                          |
| Customer Print: COAMES | Driver Print: ALAN RUSSELL Date: 28/7/2021 |

If you have any problems completing this form, please call Norris for guidance on 0208 293 1500  
Norris is a trading name of Peter Norris (Haulage) Ltd. VPT 226 1675-05. Company Reg. No 04567688

White - Norris, Yellow - Customer, Pink & Blue - Haulier, Green - Tip  
 Skips, Grabs, Tipper, Roll on offs, Tipping and Aggregates



## WASTE TRANSFER NOTE

Goods Yard, Station Approach,  
 St Mary Cray, Kent BR5 2NB  
 T: 0208 293 1500  
 WCL: CBDU 89511  
 SIC: 38110/49410

|                |              |
|----------------|--------------|
| Ticket         | 146213       |
| Additional No: |              |
| Date:          | 28/7/2021    |
| Vehicle Reg:   |              |
| Driver:        | ALAN RUSSELL |
| Time On Site:  | 08:00        |
| Time Off Site: |              |

| SECTION A Description of Waste / Material                                |                                                          | Weight | Load                                                    |
|--------------------------------------------------------------------------|----------------------------------------------------------|--------|---------------------------------------------------------|
| <input type="checkbox"/> Inert Soil & Stone<br>EWC 17 05 04              | <input type="checkbox"/> Concrete<br>EWC 17 03 03        | Gross: | <input type="checkbox"/> Cubic yards                    |
| <input type="checkbox"/> Tarmac<br>EWC 17 03 02                          | <input type="checkbox"/> Mixed Municipal<br>EWC 20 03 01 |        | <input type="checkbox"/> Cubic metres                   |
| <input type="checkbox"/> Hardcore<br>EWC 17 03 02                        | Tare:                                                    |        | <input type="checkbox"/> Load                           |
| <input type="checkbox"/> Mixed Construction & Demo Waste<br>EWC 17 05 04 |                                                          |        | <input type="checkbox"/> Other: Please specify material |
| <input type="checkbox"/> Non-Haz soil & stones<br>EWC 17 05 04           | <input type="checkbox"/> EWC                             | Nett:  | <input type="checkbox"/> Other (below)                  |

**SECTION B Current Holder of Waste / Material / Collection Point**

Name: Norris

Address: 40 Celtic Technology Tower Gas Works Ford rd  
Arundel BN18 9DX SIC: 39-00

**SECTION C Haulier Collecting Waste**

Name: Matthews

Address: STEPHENSONS WAY CRANLEY

I/We have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England & Wales) Regulations 2011, as Customer, Authorised Agents Representatives, or Responsible Persons. Please sign this ticket after inspecting, and agreeing quantity and quality of material delivered & collected from the above site. We cannot accept any claims concerning either of the above once the vehicle has left the site and the driver has obtained a signed ticket. Customers loading vehicles off the public road do so entirely at their own risk. No liability can be accepted.

**SECTION D Authorised Tip / Delivery Point / Daywork**

Name: Knapp Castle Estate

Address: West Brinsford

|                                        |                                      |
|----------------------------------------|--------------------------------------|
| Customer Signature: <u>[Signature]</u> | Driver Signature: <u>[Signature]</u> |
| Customer Print: <u>C. DAVES</u>        | Driver Print: <u>[Signature]</u>     |

If you have any problems completing this form, please call Norris for guidance on 0208 293 1500  
 Norris is a trading name of Peter Norris (trading) Ltd 0207 258 3875, V15 Company Reg. No 01047601

# PETER NORRIS (HAULAGE) LIMITED

t/a Norris Waste Management

Waste Management - Recycling - Skip Hire - Roll On/Off Containers - Grab & Tipper Hire - Aggregates & Materials

Station Approach, St Mary Cray, Orpington BR5 2NB



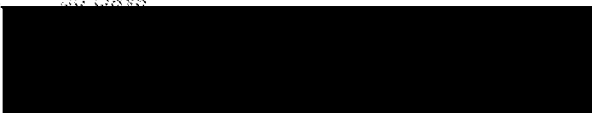
CELTIC TECHNOLOGIES LTD  
UNIT 8 COMMERCE PARK  
BRUNEL ROAD  
THEALE  
READING  
RG7 4AB

|              |            |
|--------------|------------|
| Account No.  | C147       |
| Invoice Date | 11/08/2021 |
| Invoice No.  | 188672     |

| Date                                                                                                           | Ticket | Product                                                    | Qty    | Unit     | Price | Value |
|----------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------|--------|----------|-------|-------|
| 05/07/2021                                                                                                     | 800441 | Open Industrial Skip (12yds approx.) -<br>End-Of-Life Tyre | 1.000  | Delivery |       |       |
| CELTIC TECHNOLOGIES LTD, FORMER GAS WORKS, FORD ROAD,<br>ARUNDEL, WEST SUSSEX BN18 9DX<br>Order Number - 81881 |        |                                                            |        |          |       |       |
| 05/07/2021                                                                                                     | 800441 | Car Tyre Disposal -                                        | 86.000 | Each     |       |       |
| CELTIC TECHNOLOGIES LTD, FORMER GAS WORKS, FORD ROAD,<br>ARUNDEL, WEST SUSSEX BN18 9DX<br>Order Number - 81881 |        |                                                            |        |          |       |       |

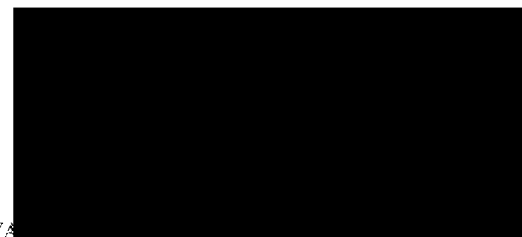
Payment Terms: 30 Days

Bank Details:



ALL QUERIES MUST BE REPLIED WITHIN 10 DAYS OF INVOICE DATE

Registered in England and Wales No. 01047683, Registered Office as above, VA





Peter Norris (Haulage) Limited  
Station Approach  
St Mary Cray, Orington, BR5 2NB

Carrier Licence: CBDU89511

Site Licence:

VAT Reg: 218 3875 45

Ticket Number: 800441

Ticket Date: 05/07/2021

**Customer Name & Address**  
CELTIC TECHNOLOGIES LTD  
CELTIC TECHNOLOGIES LTD  
FORMER GAS WORKS, FORD  
ROAD  
ARUNDEL  
WEST SUSSEX  
BN18 9DX  
**Contact:** PAUL WILLIAMS

Vehicle Reg.: X199

Transaction Type: DELIVERY

Product: Open Industrial Skip  
(12yds approx.)

EWC Code: 16 01 03

SIC Code: 39.00

Waste Description: End-Of-Life Tyre

Tel Number:

Order No: 81881

Disposal Site :

Skip Delivered:

Net Weight (kgs): 0

Skip Collected:

**Special Instructions** PLEASE DELIVER A 12 YARD SKIP ON MONDAY 5TH JULY FOR CAR TYRES ONLY.  
SITE ESTIMATE 80 CAR TYRES PER SKIP.

Time On Site:

Time Off Site:

Customer Signature:

PRINT NAME:

Driver's Signature:

PRINT NAME:

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by regulation 12 of the waste (England and Wales) Regulation 2011

NO ASBESTOS OR ANY TYPE OF FIBRE BOARD, FRIGERS, FREEZERS, TYRES, DUSTBIN REFUSE, PAINTS OR SOLVENTS, ANY TYPE OF TV SCREEN OR COMPUTER MONITOR, ASTRO-  
TURF OR ANY ARTIFICIAL SURFACES, MATTRESSES, GAS CYLINDERS, FIRE EXTINGUISHERS OR ANY TYPE OF PRESSURISED CONTAINER, FLUORESCENT TUBED LAMPS OR BULBS.  
ALL PLASTERBOARD/GYPSUM WASTE MUST BE DISPOSED OF SEPARATELY. ANY CONTAMINATION OF PLASTERBOARD WILL INCUR A SURCHARGE FOR THE ENTIRE CONTENTS OF  
THE BIN.

Customer is responsible for siting the container.

Customer is responsible for all necessary permits and the adequate lighting of the container during the hours of darkness.

Whilst every care will be taken, no liability will be accepted for any damage to property including driveways, drains, pavements and walls. Customer ordering  
vehicles off the public road do so entirely at their own risk

WE RESERVE THE RIGHT TO COLLECT THE CONTAINER AFTER 14 DAYS OF HIRE. CONTAINER MUST NOT BE OVER FILLED. LEVEL LOADS ONLY. RUBBER MUST NOT BE BURST  
INSIDE THE CONTAINER. DAMAGED OR STOLEN CONTAINER WILL BE FULLY CHARGEABLE.

During the continuance of the hire period the Customer shall fully and completely indemnify the Owner in respect of all the claims by any person whatsoever for  
injury to person or property including the property of the customer caused by or in connection with or arising out of the Container and in respects of all costs and  
charges in connection therewith whether arising under statute of common law.

Our prices allow for our vehicles to be on site for 20 minutes after which we will charge waiting time per minute. We reserve the right to automatically take payment  
for excess weight and non conforming wastes.

For full terms and conditions please visit our website, [www.norrisips.co.uk](http://www.norrisips.co.uk)

## WEIGHBRIDGE TICKET

**R M PETTETT LTD**non-ferrous metal merchant  
and cable granulatorsStone Farm, Stone Street,  
Coomore Hill, Radborough

GOODS

IN

OUT

TICKET NO.

IRON

5830

- 300kg Dirt

Total

5530 kg

Motor

Engine

Disposal Licence No. WSK/11/10054

Carriers Licence No. WSK/874227

CUSTOMER / SUPPLIER

DESCRIPTION OF GOODS

Cast  
IRON

GRANULATES

DEALER'S SIGNATURE

PRINT NAME

PLA-COMPLIANCE ONLY



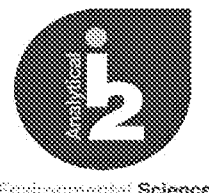


## **APPENDIX F      IMPORT DATA**

# **IMPORTED MATERIALS SCHEDULE**

| Supplier       | Invoice  | Quarry Ticket / Ref | Date Material Supplied | Material Type   | Quantity | Unit  |
|----------------|----------|---------------------|------------------------|-----------------|----------|-------|
| GRS            | 1104163  | 83342716            | 16/06/2021             | Type 1 Sub-Base | 20.38    | tonne |
| GRS            | 1104163  | 83344009            | 17/06/2021             | Type 1 Sub-Base | 19.9     | tonne |
| GRS            | 1104163  | 83343189            | 16/06/2021             | Type 1 Sub-Base | 19.64    | tonne |
| GRS            | 1104163  | 83351129            | 17/06/2021             | Type 1 Sub-Base | 19.32    | tonne |
| GRS            | 1104163  | 83343015            | 16/06/2021             | Type 1 Sub-Base | 19.14    | tonne |
| GRS            | 1104164  | 83423561            | 29/06/2021             | Type 1 Sub-Base | 19.8     | tonne |
| GRS            | 1104164  | 83426435            | 29/06/2021             | Type 1 Sub-Base | 19.6     | tonne |
| GRS            | 1104164  | 83428730            | 29/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104164  | 83422537            | 29/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104164  | 83434748            | 30/06/2021             | Type 1 Sub-Base | 19.35    | tonne |
| GRS            | 1104164  | 83429974            | 29/06/2021             | Type 1 Sub-Base | 19.25    | tonne |
| GRS            | 1104164  | 8346417             | 29/06/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104166  | 83617765            | 28/07/2021             | Type 1 Sub-Base | 19.18    | tonne |
| GRS            | 1104167  | 83395055            | 24/06/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104720  | 83404268            | 25/06/2021             | Type 1 Sub-Base | 20.28    | tonne |
| GRS            | 1104720  | 83404510            | 25/06/2021             | Type 1 Sub-Base | 19.8     | tonne |
| GRS            | 1104720  | 83402616            | 25/06/2021             | Type 1 Sub-Base | 19.6     | tonne |
| GRS            | 1104720  | 83404278            | 25/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104720  | 83402475            | 25/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104720  | 83397411            | 24/06/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1105989  | 83393375            | 24/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1105989  | 83398817            | 24/06/2021             | Type 1 Sub-Base | 19.3     | tonne |
| GRS            | 1104715  | 83444209            | 01/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104715  | 83438735            | 30/06/2021             | Type 1 Sub-Base | 19.96    | tonne |
| GRS            | 1104715  | 8343644             | 30/06/2021             | Type 1 Sub-Base | 19.96    | tonne |
| GRS            | 1104715  | 83482995            | 07/07/2021             | Type 1 Sub-Base | 19.96    | tonne |
| GRS            | 1104715  | 83442444            | 01/07/2021             | Type 1 Sub-Base | 19.96    | tonne |
| GRS            | 1104715  | 83438486            | 30/06/2021             | Type 1 Sub-Base | 19.92    | tonne |
| GRS            | 1104715  | 83474633            | 06/07/2021             | Type 1 Sub-Base | 19.7     | tonne |
| GRS            | 1104715  | 83485621            | 07/07/2021             | Type 1 Sub-Base | 19.66    | tonne |
| GRS            | 1104715  | 83483235            | 07/07/2021             | Type 1 Sub-Base | 19.5     | tonne |
| GRS            | 1104715  | 83474464            | 06/07/2021             | Type 1 Sub-Base | 19.5     | tonne |
| GRS            | 1104714  | 83473432            | 06/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83472236            | 06/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83471900            | 06/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83464996            | 05/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83462930            | 05/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83443994            | 01/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104714  | 83481562            | 07/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104714  | 83468281            | 05/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104714  | 83464736            | 05/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104714  | 83446134            | 01/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104716  | 83473385            | 06/07/2021             | Type 1 Sub-Base | 19.5     | tonne |
| GRS            | 1104716  | 83467416            | 05/07/2021             | Type 1 Sub-Base | 19.5     | tonne |
| GRS            | 1104716  | 83467016            | 05/07/2021             | Type 1 Sub-Base | 19.5     | tonne |
| GRS            | 1104716  | 83446327            | 01/07/2021             | Type 1 Sub-Base | 19.45    | tonne |
| GRS            | 1104716  | 83438427            | 30/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104716  | 83436381            | 30/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104716  | 83432853            | 30/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104716  | 83424713            | 29/06/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104716  | 83444629            | 01/07/2021             | Type 1 Sub-Base | 19.4     | tonne |
| GRS            | 1104716  | 83440056            | 06/07/2021             | Type 1 Sub-Base | 19.35    | tonne |
| GRS            | 1104717  | 83446160            | 01/07/2021             | Type 1 Sub-Base | 19.35    | tonne |
| GRS            | 1105987  | 83476223            | 06/07/2021             | Type 1 Sub-Base | 19.96    | tonne |
| GRS            | 1104713  | 83516515            | 13/07/2021             | Type 1 Sub-Base | 20.28    | tonne |
| GRS            | 1104713  | 83511429            | 12/07/2021             | Type 1 Sub-Base | 20.28    | tonne |
| GRS            | 1104713  | 83470211            | 06/07/2021             | Type 1 Sub-Base | 20.17    | tonne |
| GRS            | 1104713  | 83509992            | 12/07/2021             | Type 1 Sub-Base | 20.08    | tonne |
| GRS            | 1104713  | 83467797            | 05/07/2021             | Type 1 Sub-Base | 20.05    | tonne |
| GRS            | 1104713  | 83463405            | 05/07/2021             | Type 1 Sub-Base | 20.04    | tonne |
| GRS            | 1104713  | 83486740            | 07/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104713  | 83486088            | 07/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104713  | 83476350            | 06/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104713  | 83474109            | 06/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104165  | 83629744            | 29/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104165  | 83616819            | 28/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104165  | 83633358            | 26/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104165  | 83634847            | 28/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104165  | 83620927            | 28/07/2021             | Type 1 Sub-Base | 19.98    | tonne |
| GRS            | 1104165  | 82630732            | 29/07/2021             | Type 1 Sub-Base | 19.9     | tonne |
| GRS            | 1104165  | 83635124            | 29/07/2021             | Type 1 Sub-Base | 19.24    | tonne |
| GRS            | 1104165  | 83630491            | 29/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104165  | 83611815            | 27/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104165  | 83633628            | 26/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104718  | 83626148            | 29/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83618899            | 28/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83612141            | 27/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83610181            | 27/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83608649            | 27/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83603393            | 26/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1104718  | 83624329            | 29/07/2021             | Type 1 Sub-Base | 19.9     | tonne |
| GRS            | 1104718  | 83627037            | 29/07/2021             | Type 1 Sub-Base | 19.8     | tonne |
| GRS            | 1104718  | 83614354            | 28/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1104718  | 83605562            | 27/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1104719  | 1755434             | 27/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1104719  | 83602529            | 26/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1104719  | 83616008            | 28/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104719  | 83610547            | 27/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104719  | 83607258            | 27/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104719  | 83603528            | 26/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104719  | 83600502            | 26/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1104719  | 83598324            | 26/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| GRS            | 1105988  | 83629398            | 29/07/2021             | Type 1 Sub-Base | 20       | tonne |
| GRS            | 1105988  | 83602283            | 24/07/2021             | Type 1 Sub-Base | 19.93    | tonne |
| GRS            | 1105988  | 83625243            | 29/07/2021             | Type 1 Sub-Base | 19.7     | tonne |
| GRS            | 1105988  | 83629170            | 29/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1105988  | 83621068            | 28/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1105988  | 83597518            | 26/07/2021             | Type 1 Sub-Base | 19.22    | tonne |
| GRS            | 1105988  | 83619460            | 28/07/2021             | Type 1 Sub-Base | 19.2     | tonne |
| Origin         | SIN40979 | SDN0045851          | 09/07/2021             | Cement          | 27       | tonne |
| Origin         | SIN40980 | SDN0045853          | 09/07/2021             | Cement          | 27.14    | tonne |
| Origin         | SIN40981 | SDN0045854          | 09/07/2021             | Cement          | 27.16    | tonne |
| Power Minerals | 21301277 | N/A                 | 12/07/2021             | PFA             | 156.42   | tonne |

## **APPENDIX G    LABORATORY ANALYSIS**



**Steve Gronow**  
Celtic EnGlobe  
Columbus House  
Greenmeadow Springs  
Tongwynlais  
Cardiff  
CF15 7NE

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

## **Analytical Report Number : 21-81374**

Replaces Analytical Report Number: 21-81374, issue no. 1  
Client references/information amended.

|                             |                  |                                                        |            |
|-----------------------------|------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arundel     | <b>Samples received on:</b>                            | 16/06/2021 |
| <b>Your job number:</b>     | C1820            | <b>Samples instructed on/<br/>Analysis started on:</b> | 16/06/2021 |
| <b>Your order number:</b>   | 81841            | <b>Analysis completed by:</b>                          | 08/07/2021 |
| <b>Report Issue Number:</b> | 2                | <b>Report issued on:</b>                               | 08/07/2021 |
| <b>Samples Analysed:</b>    | 10 water samples |                                                        |            |

**Signed:**

Izabela Wojcik  
Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

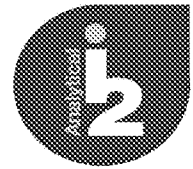
Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Environmental Science

Analytical Report Number: 21-81374

Project / Site name: NGPH Arundel

Your Order No: 81841

|                                          |               |                    |                         |               |               |
|------------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Lab Sample Number                        | 1904580       | 1904581            | 1904582                 | 1904583       | 1904584       |
| Sample Reference                         | BH201         | BH202              | BH203                   | BH204         | BH101d        |
| Sample Number                            | None Supplied | None Supplied      | None Supplied           | None Supplied | 2.632         |
| Depth (m)                                | 2.454         | 2.495              | 2.305                   | 2.497         | None Supplied |
| Date Sampled                             | 15/06/2021    | 15/06/2021         | 15/06/2021              | 15/06/2021    | 15/06/2021    |
| Time Taken                               | 1610          | 1620               | 1600                    | 1540          | 1700          |
| Analytical Parameter<br>(Water Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### General Inorganics

|                                        |          |       |           |         |       |       |       |         |
|----------------------------------------|----------|-------|-----------|---------|-------|-------|-------|---------|
| pH                                     | pH Units | N/A   | ISO 17025 | 7.5     | 6.9   | 7.0   | 6.9   | 8.4     |
| Electrical Conductivity at 20 °C       | µS/cm    | 10    | ISO 17025 | 2500    | 1600  | 850   | 830   | 2600    |
| Total Cyanide                          | µg/l     | 10    | ISO 17025 | 530     | 940   | 15    | 48    | 590     |
| Complex Cyanide                        | µg/l     | 10    | ISO 17025 | 520     | 940   | 15    | 48    | 590     |
| Free Cyanide                           | µg/l     | 10    | ISO 17025 | 11      | < 10  | < 10  | < 10  | < 10    |
| Sulphate as SO <sub>4</sub>            | mg/l     | 0.045 | ISO 17025 | 565     | 597   | 48.3  | 34.6  | 512     |
| Sulphide                               | µg/l     | 5     | NONE      | 10      | < 5.0 | < 5.0 | < 5.0 | < 5.0   |
| Chloride                               | mg/l     | 0.15  | ISO 17025 | 130     | 66    | 65    | 63    | 170     |
| Ammoniacal Nitrogen as NH <sub>4</sub> | µg/l     | 15    | ISO 17025 | 270000* | 12000 | 3100  | 1600  | 330000* |
| Total Organic Carbon (TOC)             | mg/l     | 0.1   | ISO 17025 | 98.5    | 32.0  | 8.09  | 8.21  | 291     |
| Total Suspended Solids                 | mg/l     | 2     | ISO 17025 | < 2.0   | 3.0   | < 2.0 | 10    | 8.0     |

#### Phenols by HPLC

|                              |      |     |      |       |       |       |       |        |
|------------------------------|------|-----|------|-------|-------|-------|-------|--------|
| Catechol                     | µg/l | 0.5 | NONE | 8400  | < 0.5 | < 0.5 | < 0.5 | 21000  |
| Resorcinol                   | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5  |
| Ethylphenol & Dimethylphenol | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5  |
| Cresols                      | µg/l | 0.5 | NONE | 18000 | < 0.5 | < 0.5 | < 0.5 | 63000  |
| Naphthols                    | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5  |
| Isopropylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5  |
| Phenol                       | µg/l | 0.5 | NONE | 20000 | < 0.5 | < 0.5 | < 0.5 | 120000 |
| Trimethylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5  |

#### Total Phenols

|                      |      |     |      |       |       |       |       |        |
|----------------------|------|-----|------|-------|-------|-------|-------|--------|
| Total Phenols (HPLC) | µg/l | 3.5 | NONE | 47000 | < 3.5 | < 3.5 | < 3.5 | 200000 |
|----------------------|------|-----|------|-------|-------|-------|-------|--------|

#### Speciated PAHs

|                        |      |      |           |        |        |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | 1930** | 20.2   | 27.7   | 1.86   | 2850** |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | 42.9   | 8.01   | 1.72   | 1.46   | 237    |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | 12.0   | 1.88   | 9.35   | 19.0   | 9.67   |
| Fluorene               | µg/l | 0.01 | ISO 17025 | 23.5   | 2.37   | 3.90   | 3.15   | 30.6   |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | 18.0   | 1.45   | 2.39   | 2.10   | 18.0   |
| Anthracene             | µg/l | 0.01 | ISO 17025 | 3.62   | 0.37   | 0.28   | 0.27   | 2.13   |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | 1.76   | 0.35   | 0.30   | 0.94   | 1.34   |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | 0.96   | 0.22   | 0.17   | 1.09   | 0.79   |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |      |           |      |      |      |      |      |
|-------------------|------|------|-----------|------|------|------|------|------|
| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | 2030 | 34.8 | 45.8 | 29.8 | 3140 |
|-------------------|------|------|-----------|------|------|------|------|------|



Analytical Report Number: 21-81374  
Project / Site name: NGPH Arundel

Your Order No: 81841

| Lab Sample Number                        | 1904580       | 1904581            | 1904582                 | 1904583       | 1904584       |
|------------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                         | BH201         | BH202              | BH203                   | BH204         | BH101d        |
| Sample Number                            | None Supplied | None Supplied      | None Supplied           | None Supplied | 2.632         |
| Depth (m)                                | 2.454         | 2.495              | 2.305                   | 2.497         | None Supplied |
| Date Sampled                             | 15/06/2021    | 15/06/2021         | 15/06/2021              | 15/06/2021    | 15/06/2021    |
| Time Taken                               | 1610          | 1620               | 1600                    | 1540          | 1700          |
| Analytical Parameter<br>(Water Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Heavy Metals / Metalloids

| Iron (dissolved) | mg/l | 0.004 | ISO 17025 | 0.35 | 0.41 | 0.018 | 0.073 | 0.34 |
|------------------|------|-------|-----------|------|------|-------|-------|------|
|------------------|------|-------|-----------|------|------|-------|-------|------|

|                      |      |      |           |        |        |        |        |        |
|----------------------|------|------|-----------|--------|--------|--------|--------|--------|
| Arsenic (dissolved)  | µg/l | 0.15 | ISO 17025 | 33.6   | 1.39   | 0.64   | 3.01   | 43.5   |
| Cadmium (dissolved)  | µg/l | 0.02 | ISO 17025 | < 0.02 | 0.02   | < 0.02 | < 0.02 | < 0.02 |
| Chromium (dissolved) | µg/l | 0.2  | ISO 17025 | 5.5    | 3.8    | 2.2    | 2.6    | 9.8    |
| Copper (dissolved)   | µg/l | 0.5  | ISO 17025 | 2.7    | 7.0    | 4.5    | 7.8    | 3.2    |
| Lead (dissolved)     | µg/l | 0.2  | ISO 17025 | 0.2    | < 0.2  | 0.6    | 0.5    | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5  | ISO 17025 | 8.1    | 23     | 3.7    | 3.4    | 9.5    |
| Selenium (dissolved) | µg/l | 0.6  | ISO 17025 | 3.6    | 4.3    | 1.2    | 1.4    | 6.7    |
| Zinc (dissolved)     | µg/l | 0.5  | ISO 17025 | 8.2    | 14     | 11     | 4.6    | 5.2    |

#### Monocaromatics & Oxygenates

|                                    |      |   |           |       |       |       |       |       |
|------------------------------------|------|---|-----------|-------|-------|-------|-------|-------|
| Benzene                            | µg/l | 1 | ISO 17025 | 4750  | 159   | < 1.0 | 69.2  | 28400 |
| Toluene                            | µg/l | 1 | ISO 17025 | 2340  | 7.1   | < 1.0 | 3.6   | 10900 |
| Ethylbenzene                       | µg/l | 1 | ISO 17025 | 15.9  | < 1.0 | < 1.0 | < 1.0 | 277   |
| p & m-xylene                       | µg/l | 1 | ISO 17025 | 1480  | 27.7  | 4.4   | 12.1  | 2410  |
| o-xylene                           | µg/l | 1 | ISO 17025 | 525   | 30.1  | 23.7  | 17.7  | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

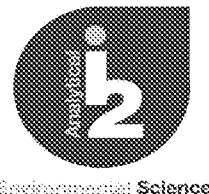
|                                |      |    |           |       |       |       |       |       |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |

|                               |      |    |           |       |      |       |      |       |
|-------------------------------|------|----|-----------|-------|------|-------|------|-------|
| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | 4800  | 160  | < 1.0 | 69   | 28000 |
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | 2300  | 7.1  | < 1.0 | 3.6  | 11000 |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | 2400  | 69   | 38    | 68   | 4100  |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | 1900  | 21   | 30    | < 10 | 2800  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | 1300  | 160  | 150   | 290  | 3000  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | 25    | < 10 | < 10  | < 10 | 23    |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10 | < 10  | < 10 | < 10  |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | 13000 | 420  | 220   | 430  | 49000 |

U/S = Unsuitable Sample I/S = Insufficient Sample

\* Result was reported from high dilution and should be interpreted with care

\*\*Over range data, sample was diluted and results are estimated from an extrapolated calibration. Results should be interpreted with care.



Analytical Report Number: 21-81374  
Project / Site name: NGPH Arundel

Your Order No: 81841

| Lab Sample Number                        | 1904585       | 1904586            | 1904587                 | 1904588       | 1904589       |
|------------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                         | BH102         | BH104              | BH105                   | BH101s        | BH105a        |
| Sample Number                            | None Supplied | None Supplied      | None Supplied           | 2.792         | None Supplied |
| Depth (m)                                | 2.210         | 1.495              | 1.375                   | None Supplied | 1.375         |
| Date Sampled                             | 15/06/2021    | 15/06/2021         | 15/06/2021              | 15/06/2021    | 15/06/2021    |
| Time Taken                               | 1520          | 1440               | 1500                    | 1720          | 1500          |
| Analytical Parameter<br>(Water Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### General Inorganics

| pH                               | pH Units | N/A   | ISO 17025 | 7.1   | 7.1   | 7.1   | 6.8     | 7.1   |
|----------------------------------|----------|-------|-----------|-------|-------|-------|---------|-------|
| Electrical Conductivity at 20 °C | µS/cm    | 10    | ISO 17025 | 760   | 760   | 1200  | 3100    | 1200  |
| Total Cyanide                    | µg/l     | 10    | ISO 17025 | < 10  | 30    | 330   | 360     | 350   |
| Complex Cyanide                  | µg/l     | 10    | ISO 17025 | < 10  | 30    | 330   | 360     | 350   |
| Free Cyanide                     | µg/l     | 10    | ISO 17025 | < 10  | < 10  | < 10  | < 10    | < 10  |
| Sulphate as SO4                  | mg/l     | 0.045 | ISO 17025 | 34.7  | 43.7  | 300   | 994     | 301   |
| Sulphide                         | µg/l     | 5     | NONE      | < 5.0 | < 5.0 | < 5.0 | < 5.0   | < 5.0 |
| Chloride                         | mg/l     | 0.15  | ISO 17025 | 65    | 57    | 57    | 43      | 59    |
| Ammoniacal Nitrogen as NH4       | µg/l     | 15    | ISO 17025 | 18    | 53    | 57000 | 250000* | 55000 |
| Total Organic Carbon (TOC)       | mg/l     | 0.1   | ISO 17025 | 2.18  | 6.40  | 8.32  | 45.2    | 8.08  |
| Total Suspended Solids           | mg/l     | 2     | ISO 17025 | < 2.0 | 3.0   | 420   | 13      | 500   |

#### Phenols by HPLC

| Catechol                     | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
|------------------------------|------|-----|------|-------|-------|-------|-------|-------|
| Resorcinol                   | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylphenol & Dimethylphenol | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Cresols                      | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthols                    | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Isopropylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenol                       | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Trimethylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

#### Total Phenols

| Total Phenols (HPLC) | µg/l | 3.5 | NONE | < 3.5 | < 3.5 | < 3.5 | < 3.5 | < 3.5 |
|----------------------|------|-----|------|-------|-------|-------|-------|-------|
|----------------------|------|-----|------|-------|-------|-------|-------|-------|

#### Speciated PAHs

| Naphthalene            | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | 0.93   | 3.24   | 2.65   |
|------------------------|------|------|-----------|--------|--------|--------|--------|--------|
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 17.2   | 0.22   |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | 2.62   | 10.3   | 3.55   |
| Fluorene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 23.0   | 0.25   |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 6.66   | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 7.09   | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 8.40   | 0.52   |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | 5.98   | 0.38   |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | < 0.16 | < 0.16 | 3.55 | 81.9 | 7.57 |
|-------------------|------|------|-----------|--------|--------|------|------|------|
|-------------------|------|------|-----------|--------|--------|------|------|------|





Environmental Science

Analytical Report Number: 21-81374

Project / Site name: NGPH Arundel

Your Order No: 81841

| Lab Sample Number                        |  |  |  | 1904585       | 1904586            | 1904587                 | 1904588       | 1904589       |
|------------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                         |  |  |  | BH102         | BH104              | BH105                   | BH101s        | BH105a        |
| Sample Number                            |  |  |  | None Supplied | None Supplied      | None Supplied           | 2.792         | None Supplied |
| Depth (m)                                |  |  |  | 2.210         | 1.495              | 1.375                   | None Supplied | 1.375         |
| Date Sampled                             |  |  |  | 15/06/2021    | 15/06/2021         | 15/06/2021              | 15/06/2021    | 15/06/2021    |
| Time Taken                               |  |  |  | 1520          | 1440               | 1500                    | 1720          | 1500          |
| Analytical Parameter<br>(Water Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |               |

## Heavy Metals / Metalloids

|                  |      |       |           |       |       |      |      |      |
|------------------|------|-------|-----------|-------|-------|------|------|------|
| Iron (dissolved) | mg/l | 0.004 | ISO 17025 | 0.005 | 0.021 | 0.18 | 0.37 | 0.18 |
|------------------|------|-------|-----------|-------|-------|------|------|------|

|                      |      |      |           |        |        |        |        |        |
|----------------------|------|------|-----------|--------|--------|--------|--------|--------|
| Arsenic (dissolved)  | µg/l | 0.15 | ISO 17025 | 0.29   | 0.29   | 2.21   | 4.97   | 2.15   |
| Cadmium (dissolved)  | µg/l | 0.02 | ISO 17025 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Chromium (dissolved) | µg/l | 0.2  | ISO 17025 | 2.3    | 2.8    | 1.9    | 5.7    | 2.5    |
| Copper (dissolved)   | µg/l | 0.5  | ISO 17025 | 5.7    | 4.6    | 2.0    | 3.3    | 2.0    |
| Lead (dissolved)     | µg/l | 0.2  | ISO 17025 | 0.2    | < 0.2  | < 0.2  | < 0.2  | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5  | ISO 17025 | 2.1    | 2.1    | 6.2    | 3.5    | 6.9    |
| Selenium (dissolved) | µg/l | 0.6  | ISO 17025 | 1.5    | 1.9    | < 0.6  | 7.0    | 0.6    |
| Zinc (dissolved)     | µg/l | 0.5  | ISO 17025 | 19     | 6.5    | 5.3    | 8.0    | 3.8    |

## Monocaromatics &amp; Oxygenates

|                                    |      |   |           |       |       |       |       |       |
|------------------------------------|------|---|-----------|-------|-------|-------|-------|-------|
| Benzene                            | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 1380  | < 1.0 |
| Toluene                            | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 38.9  | < 1.0 |
| Ethylbenzene                       | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 150   | < 1.0 |
| o-xylene                           | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 139   | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

## Petroleum Hydrocarbons

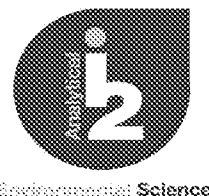
|                                |      |    |           |       |       |       |       |       |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |

|                               |      |    |           |       |       |       |      |       |
|-------------------------------|------|----|-----------|-------|-------|-------|------|-------|
| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 1400 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 39   | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | 340  | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10 | < 10  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | 1100 | < 10  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | 30   | < 10  |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10 | < 10  |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | 2900 | < 10  |

U/S = Unsuitable Sample I/S = Insufficient Sample

\* Result was reported from high dilution and should be interpreted with care

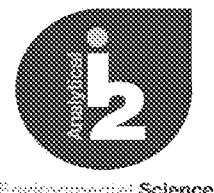
\*\*Over range data, sample was diluted and results are estimated from an extrapolated calibration. Results should be interpreted with care.



**Analytical Report Number : 21-81374**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                     | Analytical Method Description                                                                                                                                              | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in water by ICP-MS (dissolved)    | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.                                  | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL       | W                  | ISO 17025            |
| Metals in water by ICP-OES (dissolved)   | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).                                                 | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Phenols, speciated, in water, by HPLC    | Determination of speciated phenols by HPLC.                                                                                                                                | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | NONE                 |
| Complex cyanide in water                 | Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.                                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Electrical conductivity at 20oC of water | Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW                                                             | In-house method                                                                                                 | L031-PL       | W                  | ISO 17025            |
| Free cyanide in water                    | Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in water           | Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| Sulphide in water                        | Determination of sulphide in water by ion selective electrode.                                                                                                             | In-house method                                                                                                 | L029-PL       | W                  | NONE                 |
| Sulphate in water                        | Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.                                                               | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Suspended solids in water                | Determined gravimetrically with GFC filtration papers.                                                                                                                     | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L004-PL       | W                  | ISO 17025            |
| TPHCWG (Waters)                          | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.                                                                 | In-house method                                                                                                 | L070-PL       | W                  | NONE                 |
| Total cyanide in water                   | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total organic carbon in water            | Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L037-PL       | W                  | ISO 17025            |
| BTEX and MTBE in water (Monoaromatics)   | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW                                                                                  | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | ISO 17025            |
| Ammonium as NH4 in water                 | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L082-PL       | W                  | ISO 17025            |
| pH at 20oC in water (automated)          | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW                                                                                   | In house method.                                                                                                | L099-PL       | W                  | ISO 17025            |
| Chloride in water                        | Determination of Chloride colorimetrically by discrete analyser.                                                                                                           | In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.                                | L082-PL       | W                  | ISO 17025            |



**Analytical Report Number : 21-81374**  
**Project / Site name: NGPH Arundel**

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------|-------------------------------|-----------------------------|---------------|--------------------|----------------------|
|----------------------|-------------------------------|-----------------------------|---------------|--------------------|----------------------|

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.  
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.  
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



4843 **M CERTS**



Environmental Science

**Steve Gronow**

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WD18 8YS

## **Analytical Report Number : 21-82127**

|                             |                |                                                        |            |
|-----------------------------|----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arundel   | <b>Samples received on:</b>                            | 21/06/2021 |
| <b>Your job number:</b>     | C1820          | <b>Samples instructed on/<br/>Analysis started on:</b> | 21/06/2021 |
| <b>Your order number:</b>   | 81849          | <b>Analysis completed by:</b>                          | 28/06/2021 |
| <b>Report Issue Number:</b> | 1              | <b>Report issued on:</b>                               | 28/06/2021 |
| <b>Samples Analysed:</b>    | 4 soil samples |                                                        |            |

**Signed**

Zina Abdul Razzak  
Senior Quality Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-82127  
Project / Site name: NGPH Arundel  
Your Order No: 81849

| Lab Sample Number                       |       |                    |                         | 1909905       | 1909906       | 1909907       | 1909908       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | F4 NE         | F4 re-use     | Tarmac 1      | GRS6F5        |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.70-0.70     | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 16/06/2021    | 16/06/2021    | 17/06/2021    | 17/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 7.9           | 11            | 3.0           | 2.8           |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.1           | 1.1           | 1.1           | 1.5           |

|                  |      |     |           |              |              |   |              |
|------------------|------|-----|-----------|--------------|--------------|---|--------------|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | - | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|---|--------------|

#### General Inorganics

|                                                                      |          |         |           |       |       |   |       |
|----------------------------------------------------------------------|----------|---------|-----------|-------|-------|---|-------|
| pH - Automated                                                       | pH Units | N/A     | MCERTS    | 8.1   | 8.3   | - | 8.7   |
| Electrical Conductivity                                              | µS/cm    | 10      | ISO 17025 | 220   | 160   | - | 210   |
| Total Cyanide                                                        | mg/kg    | 1       | MCERTS    | 5.6   | 8.2   | - | < 1.0 |
| Complex Cyanide                                                      | mg/kg    | 1       | MCERTS    | 5.6   | 8.2   | - | < 1.0 |
| Free Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | - | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)      | mg/kg    | 2.5     | MCERTS    | 430   | 100   | - | 160   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivale | g/l      | 0.00125 | MCERTS    | 0.21  | 0.051 | - | 0.082 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivale | mg/l     | 1.25    | MCERTS    | 214   | 51.1  | - | 81.7  |
| Sulphide                                                             | mg/kg    | 1       | MCERTS    | < 1.0 | 13    | - | 190   |
| Water Soluble Chloride (2:1)                                         | mg/kg    | 1       | MCERTS    | 3.1   | 12    | - | 47    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                               | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | - | < 0.5 |
| Total Organic Carbon (TOC)                                           | %        | 0.1     | MCERTS    | 2.0   | 3.1   | - | 0.1   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |   |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|---|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | - | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | - | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | - | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | - | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | - | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | - | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | - | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | - | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |   |       |
|----------------------|-------|-----|-----------|-------|-------|---|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | - | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|---|-------|

#### Speciated PAHs

|                        |       |      |        |        |      |      |        |
|------------------------|-------|------|--------|--------|------|------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | 0.88 | 1.1  | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 5.5    | 3.6  | 5.7  | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.58   | 0.72 | 39   | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 2.7    | 2.2  | 50   | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 20     | 23   | 710  | 0.31   |
| Anthracene             | mg/kg | 0.05 | MCERTS | 8.4    | 9.6  | 180  | 0.20   |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 60     | 59   | 1200 | 0.53   |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 49     | 49   | 760  | 0.42   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 50     | 45   | 640  | 0.48   |
| Chrysene               | mg/kg | 0.05 | MCERTS | 27     | 32   | 470  | 0.32   |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 36     | 39   | 500  | 0.32   |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 11     | 13   | 220  | 0.13   |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 26     | 29   | 380  | 0.29   |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 12     | 14   | 200  | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 5.3    | 4.2  | 64   | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 11     | 13   | 200  | < 0.05 |

#### Total PAH

|                             |       |     |        |     |     |      |      |
|-----------------------------|-------|-----|--------|-----|-----|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 324 | 337 | 5570 | 3.00 |
|-----------------------------|-------|-----|--------|-----|-----|------|------|

Analytical Report Number: 21-82127  
Project / Site name: NGPH Arundel  
Your Order No: 81849

| Lab Sample Number                    |  |  |  | 1909905       | 1909906            | 1909907              | 1909908       |
|--------------------------------------|--|--|--|---------------|--------------------|----------------------|---------------|
| Sample Reference                     |  |  |  | F4 NE         | F4 re-use          | Tarmac 1             | GRS6F5        |
| Sample Number                        |  |  |  | None Supplied | None Supplied      | None Supplied        | None Supplied |
| Depth (m)                            |  |  |  | 0.70-0.70     | None Supplied      | None Supplied        | None Supplied |
| Date Sampled                         |  |  |  | 16/06/2021    | 16/06/2021         | 17/06/2021           | 17/06/2021    |
| Time Taken                           |  |  |  | None Supplied | None Supplied      | None Supplied        | None Supplied |
| Analytical Parameter (Soil Analysis) |  |  |  | Units         | Limit of detection | Accreditation Status |               |

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |   |       |
|-----------------------------------|-------|-----|--------|-------|-------|---|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 14    | 20    | - | 38    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | 3.9   |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 24    | 22    | - | 11    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 17    | 40    | - | 2.3   |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 30000 | 29000 | - | 6300  |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 98    | 270   | - | 300   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 15    | 22    | - | 11    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 65    | 100   | - | 470   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |   |       |
|------------------------------------|-------|---|--------|-------|-------|---|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |   |         |
|----------------------------------|-------|-------|--------|---------|---------|---|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | 1.0     | - | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | 9.5     | - | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | 13      | - | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | 13      | - | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | 37      | - | < 10    |

|                                 |       |       |        |         |         |   |         |
|---------------------------------|-------|-------|--------|---------|---------|---|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | 3.8     | - | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 21      | 19      | - | < 2.0   |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 220     | 160     | - | < 10    |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 410     | 340     | - | < 10    |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 650     | 530     | - | < 10    |

#### Miscellaneous Organics

|               |       |     |      |   |   |                |   |
|---------------|-------|-----|------|---|---|----------------|---|
| Coal Tar      |       | N/A | NONE | - | - | Not Identified | - |
| Total Residue | mg/kg | 10  | NONE | - | - | 57000          | - |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number : 21-82127**

**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                            |
|-------------------|------------------|---------------|---------------|-------------------------------------------------|
| 1909905           | F4 NE            | None Supplied | 0.70-0.70     | Brown loam and clay with gravel and vegetation. |
| 1909906           | F4 re-use        | None Supplied | None Supplied | Brown loam and clay with gravel and vegetation. |
| 1909907           | Tarmac 1         | None Supplied | None Supplied | Brown loam and gravel with vegetation.          |
| 1909908           | GRS6F5           | None Supplied | None Supplied | Brown clay and loam with gravel.                |

**Analytical Report Number : 21-82127**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |



**Analytical Report Number : 21-82127**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Coal Tar in Soil                                 | DCM Extraction with qualitative interpretation via GC/MS                                                                                                  | In-house method                                                                                        | L064-PL       | D                  | NONE                 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



4041 **M/CERTS**



Environmental Science

**Steve Gronow**

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## **Analytical Report Number : 21-83514**

|                             |                |                                                        |            |
|-----------------------------|----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arondel   | <b>Samples received on:</b>                            | 25/06/2021 |
| <b>Your job number:</b>     | C1820          | <b>Samples instructed on/<br/>Analysis started on:</b> | 25/06/2021 |
| <b>Your order number:</b>   | 81861          | <b>Analysis completed by:</b>                          | 02/07/2021 |
| <b>Report Issue Number:</b> | 1              | <b>Report issued on:</b>                               | 02/07/2021 |
| <b>Samples Analysed:</b>    | 8 soil samples |                                                        |            |

**Signed:**

Joanna Wawrzeczko  
Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 21-83514**  
**Project / Site name: NGPH Arondel**  
**Your Order No: 81861**

| Lab Sample Number                    |       |                    |                      | 1918032       | 1918033       | 1918034       | 1918035       | 1918036       |
|--------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                      | D6 Reuse      | D7 Reuse      | E6 Reuse      | E7 Reuse      | D6 NW         |
| Sample Number                        |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | 0.50          |
| Date Sampled                         |       |                    |                      | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                           |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE                 | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE                 | 15            | 13            | 14            | 10            | 16            |
| Total mass of sample received        | kg    | 0.001              | NONE                 | 1.4           | 1.0           | 1.3           | 1.3           | 1.0           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | Chrysotile & Amosite | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|----------------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Detected             | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | < 0.001              | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | < 0.001              | -            | -            | -            |

#### General Inorganics

| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.0   | 8.2   | 7.9   | 8.2   | 8.0   |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 590   | 310   | 660   | 150   | 240   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 21    | 21    | 14    | 23    | 4.6   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 21    | 21    | 14    | 23    | 4.6   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 1400  | 620   | 1400  | 110   | 180   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.71  | 0.31  | 0.72  | 0.053 | 0.092 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 711   | 312   | 722   | 53.1  | 92.1  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 5.2   | 1.7   | 7.4   | 1.6   | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 6.6   | 4.8   | 5.1   | 4.1   | 6.7   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | 0.5   | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.1   | 1.4   | 1.2   | 0.9   | 1.5   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-83514**  
**Project / Site name: NGPH Arondel**  
**Your Order No: 81861**

| Lab Sample Number                       |       |                    |                       | 1918032       | 1918033       | 1918034       | 1918035       | 1918036       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | D6 Reuse      | D7 Reuse      | E6 Reuse      | E7 Reuse      | D6 NW         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | 0.50          |
| Date Sampled                            |       |                    |                       | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |

#### Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | 0.31   | 0.43   | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 0.93   | 1.2    | 0.92   | 0.54   | 1.2    |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 0.51   | 0.68   | 0.60   | 0.31   | 0.44   |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 2.8    | 5.7    | 5.5    | 3.0    | 3.0    |
| Anthracene             | mg/kg | 0.05 | MCERTS | 1.4    | 2.1    | 2.0    | 0.96   | 1.0    |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 7.7    | 15     | 13     | 6.5    | 8.8    |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 7.0    | 12     | 11     | 5.6    | 8.3    |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 5.0    | 11     | 8.2    | 4.7    | 6.5    |
| Chrysene               | mg/kg | 0.05 | MCERTS | 3.1    | 6.4    | 4.7    | 2.7    | 4.4    |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 6.6    | 14     | 11     | 5.6    | 7.2    |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 1.3    | 3.1    | 2.0    | 2.4    | 3.1    |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 4.6    | 9.9    | 7.4    | 4.8    | 6.5    |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 2.9    | 5.6    | 4.1    | 3.0    | 4.5    |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 0.79   | 1.8    | 1.2    | 0.88   | 1.3    |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 3.1    | 6.1    | 4.4    | 3.5    | 4.9    |

#### Total PAHs

|                             |       |     |        |      |      |      |      |      |
|-----------------------------|-------|-----|--------|------|------|------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 47.8 | 93.9 | 75.5 | 44.3 | 61.1 |
|-----------------------------|-------|-----|--------|------|------|------|------|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 18    | 22    | 17    | 17    | 20    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 29    | 24    | 23    | 29    | 24    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 44    | 69    | 43    | 30    | 58    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 31000 | 30000 | 23000 | 27000 | 30000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 120   | 610   | 140   | 81    | 550   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | 0.9   |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 21    | 22    | 19    | 21    | 28    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | 1.7   | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 95    | 150   | 110   | 100   | 120   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-83514**  
**Project / Site name: NGPH Arondel**  
**Your Order No: 81861**

| Lab Sample Number                       |       |                    |                         | 1918032       | 1918033       | 1918034       | 1918035       | 1918036       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | D6 Reuse      | D7 Reuse      | E6 Reuse      | E7 Reuse      | D6 NW         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | 0.50          |
| Date Sampled                            |       |                    |                         | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 12      | 18      | 5.1     | 4.6     | 38      |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 43      | 65      | 42      | 23      | 130     |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 63      | 110     | 81      | 45      | 250     |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 120     | 190     | 130     | 72      | 410     |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-83514

Project / Site name: NGPH Arondel

Your Order No: 81861

| Lab Sample Number                    |       |                    |                      | 1918037       | 1918038       | 1918039       |
|--------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                      | E6 NW         | E6 NE         | E7 NE         |
| Sample Number                        |       |                    |                      | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                      | 0.50          | 0.50          | 0.50          |
| Date Sampled                         |       |                    |                      | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                           |       |                    |                      | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |
| Stone Content                        | %     | 0.1                | NONE                 | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE                 | 16            | 14            | 11            |
| Total mass of sample received        | kg    | 0.001              | NONE                 | 1.2           | 1.3           | 1.2           |

|                                               |      |       |           |              |              |              |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|--------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | -            |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.8   | 7.7   | 7.6   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 1000  | 760   | 770   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 19    | 20    | 33    |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 19    | 20    | 33    |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 1700  | 1000  | 2500  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.84  | 0.51  | 1.3   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 844   | 513   | 1260  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 21    | 1.1   | 8.9   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 13    | 9.5   | 5.0   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | 0.6   | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.4   | 1.2   | 1.4   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|

**Analytical Report Number: 21-83514**  
**Project / Site name: NGPH Arondel**  
**Your Order No: 81861**

| Lab Sample Number                       |       |                    |                       | 1918037       | 1918038       | 1918039       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | E6 NW         | E6 NE         | E7 NE         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                       | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | < 0.05        | < 0.05        | 0.33          |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 1.0           | 0.35          | 0.86          |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | 0.22          | < 0.05        | < 0.05        |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 1.0           | < 0.05        | 0.37          |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 8.3           | 1.4           | 4.2           |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 2.5           | 0.66          | 1.6           |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 13            | 3.7           | 11            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 11            | 3.3           | 9.6           |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 8.5           | 2.5           | 7.4           |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 4.8           | 1.9           | 4.6           |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 6.8           | 2.5           | 10            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 2.3           | 1.3           | 2.1           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 5.3           | 2.2           | 7.1           |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 2.6           | 1.3           | 4.1           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 1.1           | 0.41          | 1.2           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 3.0           | 1.5           | 4.4           |

**Total PAH**

|                             |       |     |        |      |      |      |
|-----------------------------|-------|-----|--------|------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 71.9 | 23.0 | 69.5 |
|-----------------------------|-------|-----|--------|------|------|------|

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 18    | 16    | 17    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 27    | 27    | 23    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 52    | 46    | 52    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 24000 | 23000 | 22000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 190   | 110   | 160   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | 0.7   | 0.4   | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 22    | 19    | 20    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 120   | 97    | 110   |

**Monoaromatics & Oxygenates**

|                                    |       |   |        |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-83514**  
**Project / Site name: NGPH Arondel**  
**Your Order No: 81861**

| Lab Sample Number                       |       |                    |                         | 1918037       | 1918038       | 1918039       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | E6 NW         | E6 NE         | E7 NE         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                         | 24/06/2021    | 24/06/2021    | 24/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | 4.1           | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 54            | 14            | 5.0           |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 280           | 83            | 35            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 390           | 150           | 64            |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 740           | 250           | 100           |

U/S = Unsuitable Sample I/S = Insufficient Sample





Analytical Report Number: 21-83514  
Project / Site name: NGPH Arondel  
Your Order No: 81861

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results          | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|-----------|------------------|-------------------|---------------------------------------------------|----------------------|---------------------------------------|----------------------------|
| 1918033       | D7 Reuse  |                  | 169               | Loose Fibres                                      | Chrysotile & Amosite | < 0.001                               | < 0.001                    |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 21-83514**

**Project / Site name: NGPH Arondel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                            |
|-------------------|------------------|---------------|---------------|-------------------------------------------------|
| 1918032           | D6 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1918033           | D7 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1918034           | E6 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and chalk.      |
| 1918035           | E7 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1918036           | D6 NW            | None Supplied | 0.5           | Brown clay and loam with gravel.                |
| 1918037           | E6 NW            | None Supplied | 0.5           | Brown clay and loam with gravel.                |
| 1918038           | E6 NE            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1918039           | E7 NE            | None Supplied | 0.5           | Brown clay and loam with gravel.                |

**Analytical Report Number : 21-83514**

**Project / Site name: NGPH Arondel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-83514**

**Project / Site name: NGPH Arondel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

**Steve Gronow**  
Celtic EnGlobe  
Columbus House  
Greenmeadow Springs  
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Herts,  
WD18 8YS

## **Analytical Report Number : 21-85007**

|                             |                 |                                                        |            |
|-----------------------------|-----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arundel    | <b>Samples received on:</b>                            | 02/07/2021 |
| <b>Your job number:</b>     | C1820           | <b>Samples instructed on/<br/>Analysis started on:</b> | 05/07/2021 |
| <b>Your order number:</b>   | 81892           | <b>Analysis completed by:</b>                          | 12/07/2021 |
| <b>Report Issue Number:</b> | 1               | <b>Report issued on:</b>                               | 12/07/2021 |
| <b>Samples Analysed:</b>    | 15 soil samples |                                                        |            |

**Signed**

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

|           |                           |
|-----------|---------------------------|
| soils     | - 4 weeks from reporting  |
| leachates | - 2 weeks from reporting  |
| waters    | - 2 weeks from reporting  |
| asbestos  | - 6 months from reporting |

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-85007

Project / Site name: NGPH Arundel

Your Order No: 81892

| Lab Sample Number                       |       |                    |                         | 1926979       | 1926980       | 1926981       | 1926982       | 1926983       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A6 NW         | B6 NW         | C6 NW         | A8 SE         | B8 SE         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                         | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 12            | 14            | 15            | 14            | 12            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.2           | 1.2           | 1.2           | 1.3           | 1.2           |

|                  |      |     |           |              |              |              |              |              |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |        |       |       |        |       |
|-------------------------------------------------------------------------|----------|---------|-----------|--------|-------|-------|--------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.2    | 8.1   | 8.2   | 8.3    | 8.3   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 68     | 80    | 210   | 68     | 79    |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0 | < 1.0 | < 1.0  | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0 | < 1.0 | < 1.0  | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0 | < 1.0 | < 1.0  | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 16     | 22    | 26    | 19     | 20    |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.0078 | 0.011 | 0.013 | 0.0097 | 0.010 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 7.8    | 10.8  | 13.1  | 9.7    | 10.0  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0 | 2.4   | < 1.0  | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 4.1    | 3.3   | 3.7   | 2.6    | 4.0   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5  | < 0.5 | < 0.5 | < 0.5  | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.0    | 1.4   | 1.4   | 1.4    | 1.4   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85007  
 Project / Site name: NGPH Arundel  
 Your Order No: 81892

| Lab Sample Number                       |  |  |  | 1926979       | 1926980            | 1926981                 | 1926982       | 1926983       |
|-----------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |  |  |  | A6 NW         | B6 NW              | C6 NW                   | A8 SE         | B8 SE         |
| Sample Number                           |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                               |  |  |  | 0.50          | 0.50               | 0.50                    | 0.50          | 0.50          |
| Date Sampled                            |  |  |  | 30/06/2021    | 30/06/2021         | 30/06/2021              | 30/06/2021    | 30/06/2021    |
| Time Taken                              |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 0.57   | 0.38   | 0.68   | 0.49   | 0.33   |
| Anthracene             | mg/kg | 0.05 | MCERTS | 0.23   | 0.15   | 0.22   | 0.20   | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 0.98   | 0.95   | 1.1    | 1.5    | 0.68   |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 0.89   | 0.94   | 1.0    | 1.4    | 0.66   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 0.84   | 0.87   | 0.64   | 1.6    | 0.53   |
| Chrysene               | mg/kg | 0.05 | MCERTS | 0.85   | 0.91   | 0.99   | 1.6    | 0.69   |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 1.1    | 0.91   | 0.85   | 2.0    | 0.91   |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 0.42   | 0.55   | 0.49   | 0.74   | 0.31   |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 1.0    | 0.86   | 0.77   | 1.6    | 0.78   |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.46   | 0.40   | 0.40   | 0.71   | 0.44   |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.30   | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 0.55   | 0.50   | 0.50   | 0.77   | 0.56   |

#### Total PAH

|                             |       |     |        |      |      |      |      |      |
|-----------------------------|-------|-----|--------|------|------|------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 7.91 | 7.42 | 7.66 | 12.8 | 5.89 |
|-----------------------------|-------|-----|--------|------|------|------|------|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 14    | 16    | 17    | 16    | 14    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 21    | 21    | 22    | 21    | 19    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 41    | 42    | 42    | 46    | 44    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 29000 | 30000 | 25000 | 27000 | 24000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 630   | 200   | 220   | 210   | 200   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | 0.7   | < 0.3 | 0.6   | < 0.3 | 0.8   |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 17    | 22    | 17    | 18    | 16    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 69    | 83    | 78    | 77    | 76    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

Analytical Report Number: 21-85007  
 Project / Site name: NGPH Arundel  
 Your Order No: 81892

| Lab Sample Number                       |  |  |  | 1926979       | 1926980            | 1926981                 | 1926982       | 1926983       |
|-----------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |  |  |  | A6 NW         | B6 NW              | C6 NW                   | A8 SE         | B8 SE         |
| Sample Number                           |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                               |  |  |  | 0.50          | 0.50               | 0.50                    | 0.50          | 0.50          |
| Date Sampled                            |  |  |  | 30/06/2021    | 30/06/2021         | 30/06/2021              | 30/06/2021    | 30/06/2021    |
| Time Taken                              |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 6.0     | < 2.0   | < 2.0   | < 2.0   | 2.8     |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | < 10    | 16      | < 10    | < 10    | < 10    |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 20      | 34      | 19      | 24      | 15      |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 33      | 50      | 28      | 33      | 24      |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-85007

Project / Site name: NGPH Arundel

Your Order No: 81892

| Lab Sample Number                       |       |                    |                         | 1926984       | 1926985       | 1926986       | 1926987       | 1926988       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | C8 SE         | A6 SW         | A7 SW         | A8 SW         | A6 Reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | None Supplied |
| Date Sampled                            |       |                    |                         | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 13            | 12            | 10            | 11            | 14            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.2           | 1.1           | 1.1           | 1.0           | 1.1           |

|                  |      |     |           |              |              |              |              |              |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |        |        |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|--------|--------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.2    | 8.1    | 9.1   | 8.1   | 8.3   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 52     | 200    | 420   | 180   | 140   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 1.0    | < 1.0  | 9.7   | 8.1   | 9.8   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 1.0    | < 1.0  | 9.7   | 8.1   | 9.8   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0  | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 16     | 18     | 430   | 340   | 300   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.0079 | 0.0088 | 0.21  | 0.17  | 0.15  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 7.9    | 8.8    | 213   | 168   | 150   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | < 1.0  | < 1.0  | 3.2   | 1.9   | 6.7   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 2.6    | 2.2    | 12    | 10    | 8.2   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5  | < 0.5  | < 0.5 | < 0.5 | 0.6   |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.3    | 1.3    | 1.9   | 1.7   | 1.9   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85007

Project / Site name: NGPH Arundel

Your Order No: 81892

| Lab Sample Number                       |       |      |        | 1926984       | 1926985            | 1926986                 | 1926987       | 1926988       |
|-----------------------------------------|-------|------|--------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |      |        | C8 SE         | A6 SW              | A7 SW                   | A8 SW         | A6 Reuse      |
| Sample Number                           |       |      |        | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                               |       |      |        | 0.50          | 0.50               | 0.50                    | 0.50          | None Supplied |
| Date Sampled                            |       |      |        | 30/06/2021    | 30/06/2021         | 30/06/2021              | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |      |        | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) |       |      |        | Units         | Limit of detection | Accreditation<br>Status |               |               |
| Speciated PAHs                          |       |      |        |               |                    |                         |               |               |
| Naphthalene                             | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | < 0.05                  | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | 0.85                    | 0.89          | 0.90          |
| Acenaphthene                            | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | 0.29                    | < 0.05        | < 0.05        |
| Fluorene                                | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | 0.69                    | 0.42          | 0.40          |
| Phenanthrene                            | mg/kg | 0.05 | MCERTS | 0.83          | 0.40               | 7.3                     | 4.2           | 4.2           |
| Anthracene                              | mg/kg | 0.05 | MCERTS | 0.26          | < 0.05             | 2.4                     | 1.6           | 1.8           |
| Fluoranthene                            | mg/kg | 0.05 | MCERTS | 2.1           | 1.0                | 17                      | 13            | 14            |
| Pyrene                                  | mg/kg | 0.05 | MCERTS | 1.8           | 0.94               | 15                      | 11            | 13            |
| Benzo(a)anthracene                      | mg/kg | 0.05 | MCERTS | 1.1           | 0.61               | 11                      | 8.0           | 8.8           |
| Chrysene                                | mg/kg | 0.05 | MCERTS | 1.4           | 0.69               | 7.4                     | 6.8           | 7.8           |
| Benzo(b)fluoranthene                    | mg/kg | 0.05 | MCERTS | 1.5           | 0.78               | 13                      | 11            | 12            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05 | MCERTS | 0.81          | 0.43               | 3.9                     | 3.2           | 3.8           |
| Benzo(a)pyrene                          | mg/kg | 0.05 | MCERTS | 1.3           | 0.77               | 11                      | 8.7           | 9.9           |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05 | MCERTS | 0.81          | 0.39               | 4.9                     | 4.9           | 5.8           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | 1.6                     | 1.5           | 1.5           |
| Benzo(ghi)perylene                      | mg/kg | 0.05 | MCERTS | 0.93          | 0.46               | 6.1                     | 5.4           | 6.6           |

#### Total PAH

|                             |       |     |        |      |      |     |      |      |
|-----------------------------|-------|-----|--------|------|------|-----|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 12.9 | 6.50 | 103 | 81.0 | 90.6 |
|-----------------------------|-------|-----|--------|------|------|-----|------|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 15    | 15    | 15    | 12    | 16    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 20    | 20    | 21    | 17    | 25    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 46    | 37    | 27    | 24    | 30    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 26000 | 25000 | 26000 | 19000 | 32000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 210   | 170   | 98    | 110   | 110   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | 1.1   | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 16    | 16    | 15    | 12    | 16    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 79    | 72    | 84    | 79    | 99    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

Analytical Report Number: 21-85007  
 Project / Site name: NGPH Arundel  
 Your Order No: 81892

| Lab Sample Number                       |       |                    |                         | 1926984       | 1926985       | 1926986       | 1926987       | 1926988       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | C8 SE         | A6 SW         | A7 SW         | A8 SW         | A6 Reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | None Supplied |
| Date Sampled                            |       |                    |                         | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
| Petroleum Hydrocarbons                  |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
|                                         |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | 4.7           |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | 10            | 8.4           | 12            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 10            | < 10          | 70            | 63            | 51            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 23            | 19            | 150           | 140           | 110           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 33            | 27            | 230           | 210           | 180           |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-85007

Project / Site name: NGPH Arundel

Your Order No: 81892

| Lab Sample Number                       |       |                    |                         | 1926989       | 1926990       | 1926991       | 1926992       | 1926993       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A7 Reuse      | A8 Reuse      | B6 Reuse      | B7 Reuse      | B8 Reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 14            | 12            | 15            | 13            | 14            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.2           | 1.2           | 1.2           | 1.2           | 1.2           |

|                  |      |     |           |              |              |              |              |              |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.3   | 8.2   | 8.3   | 8.3   | 8.7   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 150   | 200   | 370   | 200   | 140   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 18    | 15    | 12    | 9.1   | 9.9   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 18    | 15    | 12    | 9.1   | 9.9   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 330   | 340   | 340   | 350   | 380   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.16  | 0.17  | 0.17  | 0.18  | 0.19  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 163   | 170   | 168   | 177   | 188   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 18    | 4.8   | 7.7   | 14    | 5.5   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 15    | 13    | 8.1   | 6.6   | 13    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.7   | 1.8   | 1.9   | 1.9   | 2.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85007  
 Project / Site name: NGPH Arundel  
 Your Order No: 81892

| Lab Sample Number                       |       |      |        | 1926989       | 1926990            | 1926991                 | 1926992       | 1926993       |
|-----------------------------------------|-------|------|--------|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |      |        | A7 Reuse      | A8 Reuse           | B6 Reuse                | B7 Reuse      | B8 Reuse      |
| Sample Number                           |       |      |        | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                               |       |      |        | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Date Sampled                            |       |      |        | 30/06/2021    | 30/06/2021         | 30/06/2021              | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |      |        | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) |       |      |        | Units         | Limit of detection | Accreditation<br>Status |               |               |
| Speciated PAHs                          |       |      |        |               |                    |                         |               |               |
| Naphthalene                             | mg/kg | 0.05 | MCERTS | < 0.05        | < 0.05             | < 0.05                  | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05 | MCERTS | 0.88          | 0.73               | 0.64                    | 0.82          | 0.93          |
| Acenaphthene                            | mg/kg | 0.05 | MCERTS | 0.34          | < 0.05             | < 0.05                  | 0.27          | < 0.05        |
| Fluorene                                | mg/kg | 0.05 | MCERTS | 0.58          | 0.42               | 0.28                    | 0.44          | 0.42          |
| Phenanthrene                            | mg/kg | 0.05 | MCERTS | 6.2           | 4.1                | 2.9                     | 4.8           | 5.1           |
| Anthracene                              | mg/kg | 0.05 | MCERTS | 2.0           | 2.1                | 1.2                     | 1.7           | 1.9           |
| Fluoranthene                            | mg/kg | 0.05 | MCERTS | 15            | 13                 | 8.9                     | 13            | 18            |
| Pyrene                                  | mg/kg | 0.05 | MCERTS | 14            | 11                 | 8.2                     | 12            | 16            |
| Benzo(a)anthracene                      | mg/kg | 0.05 | MCERTS | 11            | 7.5                | 5.8                     | 8.8           | 12            |
| Chrysene                                | mg/kg | 0.05 | MCERTS | 7.5           | 5.8                | 4.0                     | 6.7           | 7.2           |
| Benzo(b)fluoranthene                    | mg/kg | 0.05 | MCERTS | 13            | 11                 | 8.2                     | 11            | 14            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05 | MCERTS | 4.5           | 2.6                | 2.6                     | 3.3           | 5.4           |
| Benzo(a)pyrene                          | mg/kg | 0.05 | MCERTS | 12            | 8.6                | 6.6                     | 9.6           | 12            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05 | MCERTS | 5.8           | 4.8                | 4.0                     | 5.3           | 6.7           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05 | MCERTS | 1.7           | 1.3                | 1.2                     | 1.6           | 2.0           |
| Benzo(ghi)perylene                      | mg/kg | 0.05 | MCERTS | 6.7           | 5.4                | 4.5                     | 6.0           | 7.5           |

#### Total PAH

|                             |       |     |        |     |      |      |      |     |
|-----------------------------|-------|-----|--------|-----|------|------|------|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 101 | 78.4 | 59.0 | 85.5 | 108 |
|-----------------------------|-------|-----|--------|-----|------|------|------|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 14    | 16    | 14    | 15    | 15    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 22    | 22    | 23    | 22    | 21    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 25    | 23    | 26    | 24    | 38    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 26000 | 26000 | 27000 | 29000 | 27000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 77    | 89    | 98    | 91    | 120   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 16    | 16    | 17    | 16    | 16    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 86    | 92    | 94    | 89    | 97    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

Analytical Report Number: 21-85007  
 Project / Site name: NGPH Arundel  
 Your Order No: 81892

| Lab Sample Number                       |       |                    |                         | 1926989       | 1926990       | 1926991       | 1926992       | 1926993       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A7 Reuse      | A8 Reuse      | B6 Reuse      | B7 Reuse      | B8 Reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    | 30/06/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |
| Petroleum Hydrocarbons                  |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | 5.4           | 8.2           | 5.4           | 4.5           | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | 15            | 10            | 8.9           | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | 24            | 36            | 32            | 26            | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | 37            | 59            | 47            | 39            | < 10          |
|                                         |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 13            | 8.9           | 9.7           | 11            | 7.3           |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 83            | 51            | 54            | 62            | 58            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 180           | 110           | 130           | 160           | 130           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 270           | 170           | 190           | 230           | 200           |

U/S = Unsuitable Sample I/S = Insufficient Sample

# **Analytical Report Number : 21-85007**

## **Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                            |
|-------------------|------------------|---------------|---------------|-------------------------------------------------|
| 1926979           | A6 NW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926980           | B6 NW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926981           | C6 NW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926982           | A8 SE            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926983           | B8 SE            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926984           | C8 SE            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926985           | A6 SW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926986           | A7 SW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926987           | A8 SW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1926988           | A6 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1926989           | A7 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1926990           | A8 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1926991           | B6 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1926992           | B7 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1926993           | B8 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |

**Analytical Report Number : 21-85007**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |



**Analytical Report Number : 21-85007**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| BTEX and MTBE in soil (Monoaromatics)            | Determination of BTEX in soil by headspace GC-MS.                                                                                                         | In-house method based on USEPA8260                                                                     | L073B-PL      | W                  | MCERTS               |
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



**Steve Gronow**  
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## **Analytical Report Number : 21-85251**

|                      |                 |                                                |            |
|----------------------|-----------------|------------------------------------------------|------------|
| Project / Site name: | NGPH Arundel    | Samples received on:                           | 06/07/2021 |
| Your job number:     | C1820           | Samples instructed on/<br>Analysis started on: | 06/07/2021 |
| Your order number:   | 81914           | Analysis completed by:                         | 13/07/2021 |
| Report Issue Number: | 1               | Report issued on:                              | 13/07/2021 |
| Samples Analysed:    | 15 soil samples |                                                |            |

**Signed**

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

|           |                           |
|-----------|---------------------------|
| soils     | - 4 weeks from reporting  |
| leachates | - 2 weeks from reporting  |
| waters    | - 2 weeks from reporting  |
| asbestos  | - 6 months from reporting |

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                    |       |                    |                      | 1928531       | 1928532       | 1928533       | 1928534       | 1928535       |
|--------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                      | C6 Reuse      | C7 Reuse      | C8 Reuse      | A1 SW         | A2 SW         |
| Sample Number                        |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                      | None Supplied | None Supplied | None Supplied | 0.60          | 0.60          |
| Date Sampled                         |       |                    |                      | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                           |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE                 | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE                 | 14            | 14            | 14            | 13            | 10            |
| Total mass of sample received        | kg    | 0.001              | NONE                 | 1.3           | 0.90          | 1.1           | 1.1           | 1.3           |

| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |       |       |       |        |        |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|--------|--------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 9.0   | 8.3   | 8.4   | 8.0    | 7.8    |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 290   | 330   | 280   | 54     | 130    |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 21    | 12    | 6.7   | < 1.0  | < 1.0  |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 21    | 12    | 6.7   | < 1.0  | < 1.0  |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0  | < 1.0  |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 330   | 360   | 200   | 8.5    | 11     |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.16  | 0.18  | 0.098 | 0.0042 | 0.0056 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 163   | 180   | 97.5  | 4.2    | 5.6    |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 3.5   | 4.0   | 3.3   | < 1.0  | < 1.0  |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 9.9   | 10    | 8.4   | 7.2    | 1.9    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5  | < 0.5  |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.8   | 2.2   | 1.7   | 0.2    | 0.3    |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                    | 1928531       | 1928532            | 1928533              | 1928534       | 1928535       |
|--------------------------------------|---------------|--------------------|----------------------|---------------|---------------|
| Sample Reference                     | C6 Reuse      | C7 Reuse           | C8 Reuse             | A1 SW         | A2 SW         |
| Sample Number                        | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Depth (m)                            | None Supplied | None Supplied      | None Supplied        | 0.60          | 0.60          |
| Date Sampled                         | 05/07/2021    | 05/07/2021         | 05/07/2021           | 05/07/2021    | 05/07/2021    |
| Time Taken                           | None Supplied | None Supplied      | None Supplied        | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units         | Limit of detection | Accreditation Status |               |               |

#### Speciated PAHs

|                        |       |      |        |        |      |        |        |        |
|------------------------|-------|------|--------|--------|------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | 1.1  | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 1.1    | 2.5  | 1.1    | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.36   | 0.79 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 0.57   | 3.1  | 0.41   | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 6.0    | 33   | 3.8    | < 0.05 | < 0.05 |
| Anthracene             | mg/kg | 0.05 | MCERTS | 2.3    | 11   | 1.5    | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 19     | 55   | 14     | < 0.05 | < 0.05 |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 17     | 45   | 12     | < 0.05 | < 0.05 |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 11     | 25   | 7.9    | < 0.05 | < 0.05 |
| Chrysene               | mg/kg | 0.05 | MCERTS | 7.5    | 19   | 5.8    | < 0.05 | < 0.05 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 15     | 31   | 11     | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 5.2    | 8.6  | 3.9    | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 13     | 25   | 9.1    | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 6.5    | 13   | 5.1    | < 0.05 | < 0.05 |
| Dibenzo(a,h)anthracene | mg/kg | 0.05 | MCERTS | 1.8    | 3.4  | 1.5    | < 0.05 | < 0.05 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 7.4    | 15   | 5.8    | < 0.05 | < 0.05 |

#### Total PAH

|                             |       |     |        |     |     |      |        |        |
|-----------------------------|-------|-----|--------|-----|-----|------|--------|--------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 113 | 293 | 82.4 | < 0.80 | < 0.80 |
|-----------------------------|-------|-----|--------|-----|-----|------|--------|--------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 13    | 13    | 13    | 15    | 15    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 18    | 19    | 17    | 36    | 34    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 32    | 31    | 28    | 24    | 24    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 22000 | 22000 | 23000 | 39000 | 43000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 99    | 97    | 85    | 16    | 19    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 14    | 14    | 13    | 25    | 26    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 87    | 89    | 85    | 60    | 59    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                       |       |                    |                         | 1928531       | 1928532       | 1928533       | 1928534       | 1928535       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | C6 Reuse      | C7 Reuse      | C8 Reuse      | A1 SW         | A2 SW         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | 0.60          | 0.60          |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | 5.7           | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 14            | 15            | 12            | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 65            | 150           | 75            | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 110           | 170           | 140           | < 10          | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 190           | 340           | 230           | < 10          | < 10          |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                       |       |                    |                         | 1928536       | 1928537       | 1928538       | 1928539       | 1928540       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A3 SW         | A4 SW         | A5 SW         | Type 1 Cap 1  | Type 1 Cap 2  |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.60          | 0.60          | 0.60          | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 12            | 15            | 13            | 1.9           | 3.5           |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.2           | 2.0           | 1.4           | 2.0           | 1.4           |

| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |       |        |        |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|--------|--------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.0   | 8.1    | 8.0    | 9.1   | 9.1   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 140   | 170    | 150    | 130   | 150   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0  | < 1.0  | < 1.0 | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0  | < 1.0  | < 1.0 | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0  | < 1.0  | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 25    | 17     | 17     | 56    | 67    |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.013 | 0.0083 | 0.0086 | 0.028 | 0.034 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 12.7  | 8.3    | 8.6    | 28.2  | 33.5  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0  | < 1.0  | 2.8   | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 3.6   | 2.9    | 2.3    | 6.9   | 5.9   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5  | < 0.5  | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 0.4   | 0.9    | 0.9    | 0.1   | < 0.1 |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                       |       |                    |                         | 1928536       | 1928537       | 1928538       | 1928539       | 1928540       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A3 SW         | A4 SW         | A5 SW         | Type 1 Cap 1  | Type 1 Cap 2  |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.60          | 0.60          | 0.60          | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                         |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 0.69          | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.1           | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.4           | < 0.05        | < 0.05        |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.5           | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.9           | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 3.2           | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.1           | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 2.4           | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.2           | < 0.05        | < 0.05        |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 0.49          | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | 1.3           | < 0.05        | < 0.05        |
| <b>Total PAH</b>                        |       |                    |                         |               |               |               |               |               |
| Speciated Total EPA-16 PAHs             | mg/kg | 0.8                | MCERTS                  | < 0.80        | < 0.80        | 16.2          | < 0.80        | < 0.80        |
| <b>Heavy Metals / Metalloids</b>        |       |                    |                         |               |               |               |               |               |
| Arsenic (aqua regia extractable)        | mg/kg | 1                  | MCERTS                  | 16            | 11            | 10            | 2.4           | 1.7           |
| Cadmium (aqua regia extractable)        | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Chromium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 37            | 20            | 22            | 12            | 11            |
| Copper (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 25            | 30            | 32            | 10            | 4.3           |
| Iron (aqua regia extractable)           | mg/kg | 40                 | MCERTS                  | 43000         | 22000         | 23000         | 11000         | 14000         |
| Lead (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 17            | 55            | 82            | 5.9           | 6.8           |
| Mercury (aqua regia extractable)        | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Nickel (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 23            | 12            | 14            | 7.5           | 8.7           |
| Selenium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Zinc (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 60            | 50            | 54            | 45            | 44            |
| <b>Monoaromatics &amp; Oxygenates</b>   |       |                    |                         |               |               |               |               |               |
| Benzene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Toluene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Ethylbenzene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p & m-xylene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| o-xylene                                | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| MTBE (Methyl Tertiary Butyl Ether)      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

**Analytical Report Number: 21-85251**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1928536       | 1928537       | 1928538       | 1928539       | 1928540       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A3 SW         | A4 SW         | A5 SW         | Type 1 Cap 1  | Type 1 Cap 2  |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.60          | 0.60          | 0.60          | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | 14            | < 10          | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | 19            | < 10          | < 10          |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                    |       |                    |                      | 1928541       | 1928542       | 1928543       | 1928544       | 1928545       |
|--------------------------------------|-------|--------------------|----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                      | Type 1 Cap 3  | Type 1 Cap 4  | Type 1 Cap 5  | Type 1 Cap 6  | Type 1 Cap 7  |
| Sample Number                        |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                         |       |                    |                      | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                           |       |                    |                      | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Accreditation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE                 | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE                 | 4.1           | 4.0           | 2.5           | 1.6           | 3.4           |
| Total mass of sample received        | kg    | 0.001              | NONE                 | 2.0           | 2.0           | 2.0           | 2.0           | 2.0           |

| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|
|------------------|------|-----|-----------|--------------|--------------|--------------|--------------|--------------|

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 9.1   | 9.2   | 9.1   | 9.2   | 9.0   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 170   | 160   | 160   | 150   | 160   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 79    | 79    | 61    | 55    | 75    |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.040 | 0.040 | 0.031 | 0.028 | 0.038 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 39.6  | 39.7  | 30.6  | 27.7  | 37.7  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 1.6   | 2.0   | 6.5   | 8.0   | 3.6   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 9.3   | 7.9   | 5.7   | 5.9   | 7.6   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | < 0.1 | 0.1   | 0.1   | 0.1   | 0.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-85251  
Project / Site name: NGPH Arundel  
Your Order No: 81914

| Lab Sample Number                       |       |                    |                         | 1928541       | 1928542       | 1928543       | 1928544       | 1928545       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | Type 1 Cap 3  | Type 1 Cap 4  | Type 1 Cap 5  | Type 1 Cap 6  | Type 1 Cap 7  |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                         |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Dibenzo(a,h)anthracene                  | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| <b>Total PAH</b>                        |       |                    |                         |               |               |               |               |               |
| Speciated Total EPA-16 PAHs             | mg/kg | 0.8                | MCERTS                  | < 0.80        | < 0.80        | < 0.80        | < 0.80        | < 0.80        |
| <b>Heavy Metals / Metalloids</b>        |       |                    |                         |               |               |               |               |               |
| Arsenic (aqua regia extractable)        | mg/kg | 1                  | MCERTS                  | 2.3           | 1.6           | 2.4           | 2.8           | 1.8           |
| Cadmium (aqua regia extractable)        | mg/kg | 0.2                | MCERTS                  | < 0.2         | < 0.2         | < 0.2         | < 0.2         | < 0.2         |
| Chromium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | 11            | 11            | 9.5           | 12            | 12            |
| Copper (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 10            | 11            | 8.0           | 6.5           | 7.9           |
| Iron (aqua regia extractable)           | mg/kg | 40                 | MCERTS                  | 11000         | 15000         | 11000         | 13000         | 13000         |
| Lead (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 12            | 6.4           | 5.6           | 7.0           | 7.7           |
| Mercury (aqua regia extractable)        | mg/kg | 0.3                | MCERTS                  | < 0.3         | < 0.3         | < 0.3         | < 0.3         | < 0.3         |
| Nickel (aqua regia extractable)         | mg/kg | 1                  | MCERTS                  | 8.1           | 8.4           | 7.0           | 8.7           | 11            |
| Selenium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Zinc (aqua regia extractable)           | mg/kg | 1                  | MCERTS                  | 43            | 44            | 40            | 43            | 42            |
| <b>Monoaromatics &amp; Oxygenates</b>   |       |                    |                         |               |               |               |               |               |
| Benzene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Toluene                                 | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Ethylbenzene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| p & m-xylene                            | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| o-xylene                                | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| MTBE (Methyl Tertiary Butyl Ether)      | µg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |

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**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1928541       | 1928542       | 1928543       | 1928544       | 1928545       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | Type 1 Cap 3  | Type 1 Cap 4  | Type 1 Cap 5  | Type 1 Cap 6  | Type 1 Cap 7  |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    | 05/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number : 21-85251**

**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                            |
|-------------------|------------------|---------------|---------------|-------------------------------------------------|
| 1928531           | C6 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1928532           | C7 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1928533           | C8 Reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1928534           | A1 SW            | None Supplied | 0.6           | Brown clay and sand with gravel.                |
| 1928535           | A2 SW            | None Supplied | 0.6           | Brown clay and sand with gravel.                |
| 1928536           | A3 SW            | None Supplied | 0.6           | Brown clay and sand with gravel.                |
| 1928537           | A4 SW            | None Supplied | 0.6           | Brown clay and loam with gravel.                |
| 1928538           | A5 SW            | None Supplied | 0.6           | Brown clay and loam with gravel.                |
| 1928539           | Type 1 Cap 1     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928540           | Type 1 Cap 2     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928541           | Type 1 Cap 3     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928542           | Type 1 Cap 4     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928543           | Type 1 Cap 5     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928544           | Type 1 Cap 6     | None Supplied | None Supplied | Brown loam with gravel.                         |
| 1928545           | Type 1 Cap 7     | None Supplied | None Supplied | Brown loam with gravel.                         |

**Analytical Report Number : 21-85251**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-85251**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH4 in soil                          | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



Environmental Science

**Steve Gronow**

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**Analytical Report Number : 21-85610**

|                      |                 |                                                |            |
|----------------------|-----------------|------------------------------------------------|------------|
| Project / Site name: | NGPH Arundel    | Samples received on:                           | 07/07/2021 |
| Your job number:     | C1820           | Samples instructed on/<br>Analysis started on: | 07/07/2021 |
| Your order number:   | 81914           | Analysis completed by:                         | 15/07/2021 |
| Report Issue Number: | 1               | Report issued on:                              | 15/07/2021 |
| Samples Analysed:    | 9 water samples |                                                |            |

**Signed:**

Izabela Wójcik  
Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

|           |                           |
|-----------|---------------------------|
| soils     | - 4 weeks from reporting  |
| leachates | - 2 weeks from reporting  |
| waters    | - 2 weeks from reporting  |
| asbestos  | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-85610  
Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                        |  |  |  | 1930710       | 1930711            | 1930712                 | 1930713       | 1930714       |
|------------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                         |  |  |  | BH201         | BH202              | BH203                   | BH204         | BH101s        |
| Sample Number                            |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                                |  |  |  | 2.39          | 2.46               | 2.49                    | 2.48          | None Supplied |
| Date Sampled                             |  |  |  | 06/07/2021    | 06/07/2021         | 06/07/2021              | 06/07/2021    | 06/07/2021    |
| Time Taken                               |  |  |  | 1440          | 1530               | 1610                    | 1700          | None Supplied |
| Analytical Parameter<br>(Water Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### General Inorganics

|                                        | pH Units | N/A   | ISO 17025 | 7.4      | 7.1   | 7.2   | 7.2   | 6.9      |
|----------------------------------------|----------|-------|-----------|----------|-------|-------|-------|----------|
| Electrical Conductivity at 20 °C       | µS/cm    | 10    | ISO 17025 | 2000     | 1300  | 790   | 600   | 2700     |
| Total Cyanide                          | µg/l     | 10    | ISO 17025 | 370      | 800   | 24    | 150   | 7300     |
| Complex Cyanide                        | µg/l     | 10    | ISO 17025 | 370      | 770   | 24    | 150   | 7200     |
| Free Cyanide                           | µg/l     | 10    | ISO 17025 | < 10     | 31    | < 10  | < 10  | 32       |
| Sulphate as SO <sub>4</sub>            | mg/l     | 0.045 | ISO 17025 | 496      | 402   | 55.1  | 55.2  | 794      |
| Sulphide                               | µg/l     | 5     | NONE      | 200      | < 5.0 | < 5.0 | < 5.0 | < 5.0    |
| Chloride                               | mg/l     | 0.15  | ISO 17025 | 90       | 33    | 59    | 36    | 28       |
| Ammoniacal Nitrogen as NH <sub>4</sub> | µg/l     | 15    | ISO 17025 | 200000** | 580   | 4300  | 410   | 100000** |
| Total Organic Carbon (TOC)             | mg/l     | 0.1   | ISO 17025 | 42.2     | 25.2  | 10.7  | 10.2  | 38.6     |
| Total Suspended Solids                 | mg/l     | 2     | ISO 17025 | 6.0      | < 2.0 | 5.0   | 34    | 17       |

#### Phenols by HPLC

|                              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
|------------------------------|------|-----|------|-------|-------|-------|-------|-------|
| Catechol                     | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Resorcinol                   | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylphenol & Dimethylphenol | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Cresols                      | µg/l | 0.5 | NONE | 5400  | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Naphthols                    | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Isopropylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenol                       | µg/l | 0.5 | NONE | 4100  | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Trimethylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

#### Total Phenols

| Total Phenols (HPLC) | µg/l | 3.5 | NONE | 9600 | < 3.5 | < 3.5 | < 3.5 | < 3.5 |
|----------------------|------|-----|------|------|-------|-------|-------|-------|
|----------------------|------|-----|------|------|-------|-------|-------|-------|

#### Speciated PAHs

|                        | µg/l | 0.01 | ISO 17025 | 2.93   | 1.00   | 40.1   | 0.93   | 39.0 |
|------------------------|------|------|-----------|--------|--------|--------|--------|------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | 17.9   | 0.50   | 2.35   | < 0.01 | 13.0 |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | 21.6   | < 0.01 | 12.5   | 1.13   | 5.35 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | 26.6   | < 0.01 | 5.22   | < 0.01 | 11.3 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | 2.66   | < 0.01 | 4.04   | < 0.01 | 6.29 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | 4.00   | 0.25   | 0.50   | < 0.01 | 5.36 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | 2.60   | 0.22   | 0.47   | 0.26   | 11.1 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | 1.26   | < 0.01 | 0.26   | 0.18   | 8.53 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.22   | < 0.01 | < 0.01 | 2.83 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.21   | < 0.01 | < 0.01 | 1.79 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.29   | < 0.01 | < 0.01 | 1.80 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.31   | < 0.01 | < 0.01 | 0.89 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.27   | < 0.01 | < 0.01 | 1.57 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.29   | < 0.01 | < 0.01 | 0.56 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.28   | < 0.01 | < 0.01 | 0.22 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | 0.29   | < 0.01 | < 0.01 | 0.53 |

#### Total PAH

| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | 79.5 | 4.13 | 65.4 | 2.50 | 110 |
|-------------------|------|------|-----------|------|------|------|------|-----|
|-------------------|------|------|-----------|------|------|------|------|-----|





Analytical Report Number: 21-85610

Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                        |  |  |  | 1930710       | 1930711            | 1930712                 | 1930713       | 1930714       |
|------------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                         |  |  |  | BH201         | BH202              | BH203                   | BH204         | BH101s        |
| Sample Number                            |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                                |  |  |  | 2.39          | 2.46               | 2.49                    | 2.48          | None Supplied |
| Date Sampled                             |  |  |  | 06/07/2021    | 06/07/2021         | 06/07/2021              | 06/07/2021    | 06/07/2021    |
| Time Taken                               |  |  |  | 1440          | 1530               | 1610                    | 1700          | None Supplied |
| Analytical Parameter<br>(Water Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### Heavy Metals / Metalloids

|                      |      |       |           |        |        |        |        |        |
|----------------------|------|-------|-----------|--------|--------|--------|--------|--------|
| Iron (dissolved)     | mg/l | 0.004 | ISO 17025 | 0.26   | 0.43   | 0.078  | 0.099  | 3.0    |
| Arsenic (dissolved)  | µg/l | 0.15  | ISO 17025 | 18.3   | 1.04   | 0.79   | 1.37   | 3.12   |
| Cadmium (dissolved)  | µg/l | 0.02  | ISO 17025 | < 0.02 | 0.04   | < 0.02 | 0.06   | 0.03   |
| Chromium (dissolved) | µg/l | 0.2   | ISO 17025 | 6.8    | 5.8    | 4.7    | 4.5    | 7.2    |
| Copper (dissolved)   | µg/l | 0.5   | ISO 17025 | 2.0    | 13     | 2.8    | 8.2    | 6.8    |
| Lead (dissolved)     | µg/l | 0.2   | ISO 17025 | < 0.2  | 0.2    | < 0.2  | 0.4    | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05  | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5   | ISO 17025 | 5.3    | 21     | 3.8    | 5.6    | 7.1    |
| Selenium (dissolved) | µg/l | 0.6   | ISO 17025 | 2.7    | 2.8    | 1.1    | 1.5    | 6.2    |
| Zinc (dissolved)     | µg/l | 0.5   | ISO 17025 | 4.5    | 18     | 10     | 10     | 8.4    |

#### Monoaromatics & Oxygenates

|                                    |      |       |           |       |       |       |       |       |
|------------------------------------|------|-------|-----------|-------|-------|-------|-------|-------|
| Benzene                            | µg/l | 1     | ISO 17025 | 2710  | < 1.0 | 211   | < 1.0 | 454   |
| Toluene                            | µg/l | 1     | ISO 17025 | 1130  | < 1.0 | 10.8  | < 1.0 | 51.3  |
| Ethylbenzene                       | µg/l | 1     | ISO 17025 | 25.0  | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/l | 1     | ISO 17025 | 871   | < 1.0 | 6.8   | < 1.0 | 30.6  |
| o-xylene                           | µg/l | 1     | ISO 17025 | 270   | < 1.0 | 17.6  | < 1.0 | 32.1  |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1     | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Sum of BTEX                        | µg/l | 7     | ISO 17025 | -     | -     | -     | -     | -     |
| Sum of m, p & o-Xylene             | µg/l | 2     | ISO 17025 | -     | -     | -     | -     | -     |
| Sum of m, p & o-Xylene             | mg/l | 0.002 | NONE      | -     | -     | -     | -     | -     |

#### Petroleum Hydrocarbons

|                                |      |    |           |       |       |       |       |       |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |

|                               |      |    |           |      |       |      |       |     |
|-------------------------------|------|----|-----------|------|-------|------|-------|-----|
| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | 2700 | < 1.0 | 210  | < 1.0 | 450 |
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | 1100 | < 1.0 | 11   | < 1.0 | 51  |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | 1400 | < 1.0 | 37   | < 1.0 | 71  |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | < 10 | < 10  | 41   | < 10  | 40  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | 310  | < 10  | 100  | < 10  | 95  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | 11   | < 10  | < 10 | < 10  | 32  |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10 | < 10  | < 10 | < 10  | 11  |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | 5500 | < 10  | 400  | < 10  | 750 |

U/S = Unsuitable Sample I/S = Insufficient Sample

\*Over range data, sample was diluted and results are estimated from an extrapolated calibration. Results should be interpreted with care.

\*\* Result was reported from high dilution and should be interpreted with care



Analytical Report Number: 21-85610  
Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                        |       |                    |                         | 1930715       | 1930716       | 1930717       | 1930718       |
|------------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|
| Sample Reference                         |       |                    |                         | BH101d        | BH104         | BH105         | FB1           |
| Sample Number                            |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                                |       |                    |                         | None Supplied | 1.47          | 1.30          | None Supplied |
| Date Sampled                             |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                               |       |                    |                         | None Supplied | 1310          | 1245          | 1730          |
| Analytical Parameter<br>(Water Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |

#### General Inorganics

| pH                                     | pH Units | N/A   | ISO 17025 | 8.5      | 7.6   | 7.4   | 7.3   |
|----------------------------------------|----------|-------|-----------|----------|-------|-------|-------|
| Electrical Conductivity at 20 °C       | µS/cm    | 10    | ISO 17025 | 26000    | 630   | 1100  | < 10  |
| Total Cyanide                          | µg/l     | 10    | ISO 17025 | 660      | 110   | 230   | < 10  |
| Complex Cyanide                        | µg/l     | 10    | ISO 17025 | 660      | 110   | 230   | < 10  |
| Free Cyanide                           | µg/l     | 10    | ISO 17025 | < 10     | < 10  | < 10  | < 10  |
| Sulphate as SO <sub>4</sub>            | mg/l     | 0.045 | ISO 17025 | 580      | 108   | 266   | 1.51  |
| Sulphide                               | µg/l     | 5     | NONE      | < 5.0    | < 5.0 | < 5.0 | < 5.0 |
| Chloride                               | mg/l     | 0.15  | ISO 17025 | 180      | 44    | 50    | 0.55  |
| Ammoniacal Nitrogen as NH <sub>4</sub> | µg/l     | 15    | ISO 17025 | 450000** | 34    | 52000 | 16    |
| Total Organic Carbon (TOC)             | mg/l     | 0.1   | ISO 17025 | 256      | 5.55  | 7.13  | 0.94  |
| Total Suspended Solids                 | mg/l     | 2     | ISO 17025 | < 2.0    | 21    | 23    | < 2.0 |

#### Phenols by HPLC

| Catechol                     | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |
|------------------------------|------|-----|------|--------|-------|-------|-------|
| Resorcinol                   | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |
| Ethylphenol & Dimethylphenol | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |
| Cresols                      | µg/l | 0.5 | NONE | 83000  | < 0.5 | < 0.5 | < 0.5 |
| Naphthols                    | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |
| Isopropylphenol              | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |
| Phenol                       | µg/l | 0.5 | NONE | 100000 | < 0.5 | < 0.5 | < 0.5 |
| Trimethylphenol              | µg/l | 0.5 | NONE | < 0.5  | < 0.5 | < 0.5 | < 0.5 |

#### Total Phenols

| Total Phenols (HPLC) | µg/l | 3.5 | NONE | 180000 | < 3.5 | < 3.5 | < 3.5 |
|----------------------|------|-----|------|--------|-------|-------|-------|
|----------------------|------|-----|------|--------|-------|-------|-------|

#### Speciated PAHs

| Naphthalene            | µg/l | 0.01 | ISO 17025 | 6340*  | < 0.01 | < 0.01 | < 0.01 |
|------------------------|------|------|-----------|--------|--------|--------|--------|
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | 356    | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | 21.4   | < 0.01 | < 0.01 | < 0.01 |
| Fluorene               | µg/l | 0.01 | ISO 17025 | 61.8   | < 0.01 | < 0.01 | < 0.01 |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | 47.7   | < 0.01 | < 0.01 | < 0.01 |
| Anthracene             | µg/l | 0.01 | ISO 17025 | 6.30   | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | 3.20   | < 0.01 | < 0.01 | < 0.01 |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | 2.83   | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene  | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | 6840 | < 0.16 | < 0.16 | < 0.16 |
|-------------------|------|------|-----------|------|--------|--------|--------|
|-------------------|------|------|-----------|------|--------|--------|--------|



Analytical Report Number: 21-85610  
Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                        |  |  |  | 1930715       | 1930716            | 1930717                 | 1930718       |
|------------------------------------------|--|--|--|---------------|--------------------|-------------------------|---------------|
| Sample Reference                         |  |  |  | BH101d        | BH104              | BH105                   | FB1           |
| Sample Number                            |  |  |  | None Supplied | None Supplied      | None Supplied           | None Supplied |
| Depth (m)                                |  |  |  | None Supplied | 1.47               | 1.30                    | None Supplied |
| Date Sampled                             |  |  |  | 06/07/2021    | 06/07/2021         | 06/07/2021              | 06/07/2021    |
| Time Taken                               |  |  |  | None Supplied | 1310               | 1245                    | 1730          |
| Analytical Parameter<br>(Water Analysis) |  |  |  | Units         | Limit of detection | Accreditation<br>Status |               |

#### Heavy Metals / Metalloids

|                      |      |       |           |        |        |        |        |
|----------------------|------|-------|-----------|--------|--------|--------|--------|
| Iron (dissolved)     | mg/l | 0.004 | ISO 17025 | 0.35   | 0.068  | 0.19   | 0.008  |
| Arsenic (dissolved)  | µg/l | 0.15  | ISO 17025 | 50.3   | 0.51   | 2.03   | < 0.15 |
| Cadmium (dissolved)  | µg/l | 0.02  | ISO 17025 | < 0.02 | < 0.02 | < 0.02 | < 0.02 |
| Chromium (dissolved) | µg/l | 0.2   | ISO 17025 | 13     | 2.6    | 3.1    | < 0.2  |
| Copper (dissolved)   | µg/l | 0.5   | ISO 17025 | 2.1    | 4.7    | 1.1    | 1.3    |
| Lead (dissolved)     | µg/l | 0.2   | ISO 17025 | 0.3    | < 0.2  | < 0.2  | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05  | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5   | ISO 17025 | 11     | 3.4    | 5.0    | < 0.5  |
| Selenium (dissolved) | µg/l | 0.6   | ISO 17025 | 10     | 1.0    | 0.7    | < 0.6  |
| Zinc (dissolved)     | µg/l | 0.5   | ISO 17025 | 8.2    | 5.0    | 1.4    | 2.1    |

#### Monoaromatics & Oxygenates

|                                    |      |       |           |        |       |       |       |
|------------------------------------|------|-------|-----------|--------|-------|-------|-------|
| Benzene                            | µg/l | 1     | ISO 17025 | 30400* | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/l | 1     | ISO 17025 | 11800* | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/l | 1     | ISO 17025 | 210    | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/l | 1     | ISO 17025 | 2100   | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/l | 1     | ISO 17025 | 984    | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1     | ISO 17025 | < 1.0  | < 1.0 | < 1.0 | < 1.0 |
| Sum of BTEX                        | µg/l | 7     | ISO 17025 | 46000  | -     | -     | -     |
| Sum of m, p & o-Xylene             | µg/l | 2     | ISO 17025 | 3100   | -     | -     | -     |
| Sum of m, p & o-Xylene             | mg/l | 0.002 | NONE      | 3      | -     | -     | -     |

#### Petroleum Hydrocarbons

|                                |      |    |           |       |       |       |       |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  |

|                               |      |    |           |        |       |       |       |
|-------------------------------|------|----|-----------|--------|-------|-------|-------|
| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | 30000* | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | 12000* | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | 4700   | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | 6300   | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | 990    | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | 65     | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10   | < 10  | < 10  | < 10  |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | 54000  | < 10  | < 10  | < 10  |

U/S = Unsuitable Sample I/S = Insufficient Sample

\*Over range data, sample was diluted and results are estimated from an extrapolated calibration. Results should be interpreted with care.

\*\* Result was reported from high dilution and should be interpreted with care



**Analytical Report Number : 21-85610**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                     | Analytical Method Description                                                                                                                                              | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in water by ICP-OES (dissolved)   | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).                                                 | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Metals in water by ICP-MS (dissolved)    | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.                                  | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL       | W                  | ISO 17025            |
| Phenols, speciated, in water, by HPLC    | Determination of speciated phenols by HPLC.                                                                                                                                | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | NONE                 |
| Complex cyanide in water                 | Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.                                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Electrical conductivity at 20oC of water | Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW                                                             | In-house method                                                                                                 | L031-PL       | W                  | ISO 17025            |
| Free cyanide in water                    | Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in water           | Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| pH at 20oC in water                      | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW                                                                                   | In house method.                                                                                                | L005-PL       | W                  | ISO 17025            |
| Sulphide in water                        | Determination of sulphide in water by ion selective electrode.                                                                                                             | In-house method                                                                                                 | L029-PL       | W                  | NONE                 |
| Sulphate in water                        | Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.                                                               | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Suspended solids in water                | Determined gravimetrically with GFC filtration papers.                                                                                                                     | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L004-PL       | W                  | ISO 17025            |
| TPHCWG (Waters)                          | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.                                                                 | In-house method                                                                                                 | L070-PL       | W                  | NONE                 |
| Total cyanide in water                   | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total organic carbon in water            | Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L037-PL       | W                  | ISO 17025            |
| BTEX and MTBE in water (Monoaromatics)   | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW                                                                                  | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | ISO 17025            |
| Ammonium as NH4 in water                 | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L082-PL       | W                  | ISO 17025            |



**Analytical Report Number : 21-85610**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name | Analytical Method Description                                    | Analytical Method Reference                                                      | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Chloride in water    | Determination of Chloride colorimetrically by discrete analyser. | In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW. | L082-PL       | W                  | ISO 17025            |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

**Steve Gronow**  
Celtic EnGlobe  
Columbus House  
Greenmeadow Springs  
Tongwynlais  
Cardiff  
CF15 7NE

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

## **Analytical Report Number : 21-85742**

|                      |                 |                                                |            |
|----------------------|-----------------|------------------------------------------------|------------|
| Project / Site name: | NGPH Arundel    | Samples received on:                           | 07/07/2021 |
| Your job number:     | C1820           | Samples instructed on/<br>Analysis started on: | 07/07/2021 |
| Your order number:   | 81914           | Analysis completed by:                         | 14/07/2021 |
| Report Issue Number: | 1               | Report issued on:                              | 14/07/2021 |
| Samples Analysed:    | 26 soil samples |                                                |            |

**Signature**

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-85742

Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                       |       |                    |                       | 1931538       | 1931539       | 1931540       | 1931541       | 1931542       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | B1 reuse      | B2 reuse      | B3 reuse      | B4 reuse      | B5 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 13            | 9.8           | 12            | 13            | 11            |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 1.2           | 1.4           | 1.2           | 1.4           | 1.3           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Chrysotile | -            | -            | Chrysotile | -            |
|-----------------------------------------------|------|-------|-----------|------------|--------------|--------------|------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected   | Not-detected | Not-detected | Detected   | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001    | -            | -            | < 0.001    | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001    | -            | -            | < 0.001    | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.2   | 8.2   | 8.2   | 7.7   | 7.9   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 150   | 89    | 130   | 150   | 150   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 14    | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 14    | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 79    | 21    | 27    | 24    | 26    |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.040 | 0.011 | 0.013 | 0.012 | 0.013 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 39.7  | 10.7  | 13.3  | 12.0  | 13.2  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 3.8   | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 7.3   | 9.7   | 8.2   | 13    | 9.9   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | 0.6   | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 2.6   | 1.4   | 1.5   | 1.7   | 1.5   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931538       | 1931539       | 1931540       | 1931541       | 1931542       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | B1 reuse      | B2 reuse      | B3 reuse      | B4 reuse      | B5 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |

#### Speciated PAHs

|                        |       |      |        |      |        |        |        |        |
|------------------------|-------|------|--------|------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 0.98 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 8.3  | 0.26   | 0.24   | 0.28   | 0.29   |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.99 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 4.3  | < 0.05 | < 0.05 | < 0.05 | 0.22   |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 42   | 1.2    | 2.1    | 1.5    | 2.3    |
| Anthracene             | mg/kg | 0.05 | MCERTS | 14   | 0.34   | 0.46   | 0.40   | 0.67   |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 110  | 4.0    | 4.6    | 4.4    | 5.8    |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 91   | 3.6    | 3.9    | 3.8    | 5.0    |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 54   | 2.7    | 3.2    | 3.0    | 3.6    |
| Chrysene               | mg/kg | 0.05 | MCERTS | 45   | 2.2    | 2.5    | 2.3    | 2.9    |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 51   | 4.0    | 3.5    | 3.6    | 3.9    |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 17   | 0.96   | 2.1    | 1.9    | 1.8    |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 45   | 2.9    | 3.2    | 3.1    | 3.5    |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 23   | 1.6    | 1.9    | 1.7    | 1.9    |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 5.8  | 0.55   | 0.61   | 0.57   | 0.67   |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 24   | 1.8    | 2.2    | 1.8    | 2.1    |

#### Total PAHs

|                             |       |     |        |     |      |      |      |      |
|-----------------------------|-------|-----|--------|-----|------|------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 535 | 26.1 | 30.3 | 28.2 | 34.7 |
|-----------------------------|-------|-----|--------|-----|------|------|------|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 36    | 13    | 16    | 15    | 13    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 27    | 23    | 30    | 23    | 20    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 66    | 27    | 29    | 25    | 24    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 47000 | 31000 | 48000 | 29000 | 32000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 310   | 85    | 110   | 120   | 70    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | 0.6   | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 27    | 16    | 20    | 17    | 15    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 480   | 67    | 74    | 63    | 58    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |



**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1931538       | 1931539       | 1931540       | 1931541       | 1931542       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | B1 reuse      | B2 reuse      | B3 reuse      | B4 reuse      | B5 reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |

**Petroleum Hydrocarbons**

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | 4.6     | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 15      | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | 30      | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | 81      | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 130     | < 10    | < 10    | < 10    | < 10    |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | 17      | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 49      | 7.7     | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 350     | 19      | 16      | 14      | 15      |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 610     | 40      | 23      | 33      | 22      |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 1000    | 67      | 39      | 47      | 37      |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                    |       |                    |                    | 1931543       | 1931544       | 1931545       | 1931546       | 1931547       |
|--------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                    | A1 NW         | B1 NW         | C1 NW         | A5 SE         | B5 SE         |
| Sample Number                        |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                    | 0.30          | 0.50          | 0.30          | 0.30          | 0.30          |
| Date Sampled                         |       |                    |                    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE               | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE               | 14            | 12            | 9.2           | 9.8           | 16            |
| Total mass of sample received        | kg    | 0.001              | NONE               | 1.3           | 1.3           | 1.0           | 1.4           | 1.1           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Amosite  | -            | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|----------|--------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001  | -            | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001  | -            | -            | -            | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.9   | 7.8   | 8.1   | 8.6   | 8.1   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 130   | 160   | 150   | 270   | 260   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 17    | 2.5   | < 1.0 | 14    | 12    |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 17    | 2.5   | < 1.0 | 14    | 12    |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 39    | 21    | 120   | 270   | 160   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.020 | 0.010 | 0.062 | 0.13  | 0.078 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 19.5  | 10.3  | 61.9  | 134   | 78.3  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 4.3   | < 1.0 | < 1.0 | 4.0   | 4.7   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 13    | 7.2   | 3.3   | 18    | 12    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | 0.6   |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 2.2   | 1.1   | 0.1   | 1.5   | 2.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931543       | 1931544       | 1931545       | 1931546       | 1931547       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | A1 NW         | B1 NW         | C1 NW         | A5 SE         | B5 SE         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | 0.30          | 0.50          | 0.30          | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | 0.75          | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 2.3           | < 0.05        | < 0.05        | 0.65          | 0.69          |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | 0.48          | < 0.05        | < 0.05        | 1.0           | 2.7           |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 1.6           | < 0.05        | < 0.05        | 1.4           | 2.9           |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 22            | 0.62          | 0.41          | 15            | 34            |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 6.6           | < 0.05        | < 0.05        | 4.2           | 9.2           |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 53            | 2.0           | 0.50          | 27            | 42            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 41            | 2.0           | 0.39          | 21            | 28            |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 35            | 1.4           | 0.22          | 15            | 21            |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 26            | 1.1           | 0.22          | 11            | 17            |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 30            | 1.9           | < 0.05        | 18            | 18            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 12            | 0.48          | < 0.05        | 4.7           | 6.4           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 27            | 1.4           | < 0.05        | 13            | 15            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 13            | 0.85          | < 0.05        | 7.1           | 7.6           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 3.4           | 0.29          | < 0.05        | 2.4           | 2.1           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 13            | 0.89          | < 0.05        | 7.7           | 7.5           |

#### Total PAHs

|                             |       |     |        |     |      |      |     |     |
|-----------------------------|-------|-----|--------|-----|------|------|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 287 | 12.8 | 1.74 | 149 | 213 |
|-----------------------------|-------|-----|--------|-----|------|------|-----|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 33    | 14    | 22    | 13    | 16    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 30    | 23    | 38    | 18    | 21    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 49    | 25    | 30    | 23    | 28    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 50000 | 27000 | 72000 | 25000 | 30000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 310   | 82    | 17    | 93    | 130   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 26    | 15    | 37    | 13    | 15    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | 1.5   | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 350   | 63    | 66    | 86    | 110   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1931543       | 1931544       | 1931545       | 1931546       | 1931547       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A1 NW         | B1 NW         | C1 NW         | A5 SE         | B5 SE         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.30          | 0.50          | 0.30          | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | 4.1           | 2.3           |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | 11            | 9.7           |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | 17            | 20            |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | 31            | 32            |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | 11            | < 1.0         | < 1.0         | < 1.0         | 10            |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 31            | < 2.0         | < 2.0         | 13            | 51            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 130           | < 10          | < 10          | 64            | 190           |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 190           | 21            | < 10          | 84            | 220           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 350           | 31            | < 10          | 160           | 470           |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931548       | 1931549       | 1931550       | 1931551       | 1931552       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | C5 SE         | D8 reuse      | E8 reuse      | D8 SE         | E8 SE         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | 0.30          | None Supplied | None Supplied | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 16            | 15            | 18            | 16            | 14            |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 1.2           | 1.1           | 1.1           | 1.1           | 1.1           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.1   | 8.1   | 8.1   | 8.2   | 7.6   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 210   | 280   | 240   | 440   | 150   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 2.1   | 7.2   | 6.8   | 12    | 11    |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 2.1   | 7.2   | 6.8   | 12    | 11    |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 120   | 270   | 330   | 120   | 150   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.058 | 0.13  | 0.16  | 0.062 | 0.074 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 58.1  | 134   | 165   | 62.0  | 73.7  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 6.3   | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 32    | 6.3   | 4.6   | 3.7   | 7.1   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | 8.5   | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 3.0   | 1.1   | 0.8   | 0.8   | 1.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931548       | 1931549       | 1931550       | 1931551       | 1931552       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | C5 SE         | D8 reuse      | E8 reuse      | D8 SE         | E8 SE         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | 0.30          | None Supplied | None Supplied | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 0.59          | 0.41          | < 0.05        | 0.55          | 0.21          |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | 0.31          | 0.49          | 0.50          | 0.62          | 0.46          |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 0.48          | 0.62          | 0.55          | 1.2           | 0.59          |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 5.4           | 8.1           | 6.4           | 12            | 7.5           |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 1.7           | 2.4           | 1.7           | 3.3           | 1.8           |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 15            | 21            | 11            | 18            | 12            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 13            | 17            | 8.3           | 14            | 8.9           |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 10            | 12            | 6.2           | 9.2           | 6.3           |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 7.8           | 9.5           | 4.9           | 9.0           | 6.3           |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 12            | 15            | 7.1           | 9.4           | 7.3           |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 4.8           | 5.3           | 2.5           | 3.7           | 2.4           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 10            | 11            | 5.0           | 6.9           | 5.0           |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 5.0           | 6.4           | 2.9           | 3.7           | 2.9           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 1.6           | 2.1           | 1.0           | 0.95          | 0.80          |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 5.4           | 6.8           | 3.1           | 3.8           | 2.9           |

**Total PAHs**

|                             |       |     |        |      |     |      |      |      |
|-----------------------------|-------|-----|--------|------|-----|------|------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 94.4 | 118 | 61.6 | 96.4 | 65.1 |
|-----------------------------|-------|-----|--------|------|-----|------|------|------|

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 18    | 19    | 21    | 22    | 22    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 27    | 34    | 39    | 38    | 33    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 35    | 21    | 15    | 14    | 26    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 40000 | 38000 | 47000 | 45000 | 43000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 140   | 61    | 39    | 35    | 53    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 23    | 21    | 24    | 22    | 21    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 110   | 82    | 78    | 67    | 90    |

**Monoaromatics & Oxygenates**

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1931548       | 1931549       | 1931550       | 1931551       | 1931552       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | C5 SE         | D8 reuse      | E8 reuse      | D8 SE         | E8 SE         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.30          | None Supplied | None Supplied | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | 7.1           |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | 18            |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | 36            |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | 61            |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 19            | 17            | 7.3           | 9.1           | 5.4           |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 110           | 230           | 51            | 63            | 51            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 200           | 420           | 76            | 90            | 82            |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 330           | 670           | 130           | 160           | 140           |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-85742

Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                       |       |                    |                       | 1931553       | 1931554       | 1931555       | 1931556       | 1931557       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | E8 NE         | A1 reuse      | A2 reuse      | A3 reuse      | A4 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 17            | 10            | 9.1           | 9.2           | 9.3           |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 1.1           | 1.1           | 1.2           | 1.2           | 1.2           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.6   | 8.4   | 8.1   | 8.1   | 8.2   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 100   | 81    | 230   | 220   | 170   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 43    | < 1.0 | 1.4   | 1.9   | 3.5   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 43    | < 1.0 | 1.4   | 1.9   | 3.5   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 26    | 79    | 85    | 110   | 170   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.013 | 0.040 | 0.042 | 0.055 | 0.086 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 13.0  | 39.5  | 42.3  | 54.7  | 86.1  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 1.2   | 1.7   | < 1.0 | < 1.0 | 2.6   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 4.0   | 6.6   | 6.2   | 7.4   | 13    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.3   | 1.1   | 0.8   | 1.0   | 1.5   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|



**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931553       | 1931554       | 1931555       | 1931556       | 1931557       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | E8 NE         | A1 reuse      | A2 reuse      | A3 reuse      | A4 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | < 0.05        | 0.50          | 0.55          | 0.47          | 4.9           |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 0.27          | 1.4           | 1.8           | 1.6           | 14            |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | < 0.05        | 0.20          | 0.20          | 0.20          | 3.7           |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 0.19          | 0.71          | 0.89          | 0.82          | 27            |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 2.0           | 8.0           | 9.6           | 6.8           | 140           |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 0.53          | 2.9           | 3.6           | 2.5           | 42            |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 4.1           | 22            | 28            | 20            | 130           |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 3.7           | 20            | 25            | 18            | 120           |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 2.5           | 17            | 20            | 15            | 98            |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 2.4           | 16            | 14            | 14            | 75            |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 3.2           | 19            | 23            | 20            | 90            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 1.3           | 9.0           | 5.2           | 8.7           | 36            |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 2.2           | 17            | 17            | 17            | 72            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 1.5           | 8.2           | 8.3           | 9.3           | 30            |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 0.34          | 2.3           | 2.3           | 2.6           | 9.0           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 1.6           | 8.8           | 7.9           | 9.1           | 28            |

#### Total PAHs

|                             |       |     |        |      |     |     |     |     |
|-----------------------------|-------|-----|--------|------|-----|-----|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 25.8 | 154 | 167 | 145 | 919 |
|-----------------------------|-------|-----|--------|------|-----|-----|-----|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |        |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|--------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 14    | 23    | 29    | 25    | 36     |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2  |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 26    | 34    | 40    | 38    | 41     |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 22    | 36    | 37    | 40    | 46     |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 32000 | 55000 | 66000 | 68000 | 110000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 130   | 150   | 120   | 120   | 93     |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | 0.4   | < 0.3 | < 0.3  |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 18    | 28    | 31    | 36    | 53     |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | 1.5   | < 1.0 | < 1.0 | 1.7    |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 63    | 140   | 120   | 130   | 150    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1931553       | 1931554       | 1931555       | 1931556       | 1931557       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | E8 NE         | A1 reuse      | A2 reuse      | A3 reuse      | A4 reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | 4.2           | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | 12            | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | 24            | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | 5.7           |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | < 2.0         | 6.4           | 6.8           | 9.0           | 63            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 19            | 63            | 68            | 81            | 470           |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 39            | 130           | 110           | 150           | 440           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 58            | 200           | 190           | 240           | 980           |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-85742

Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                       |       |                    |                       | 1931558       | 1931559       | 1931560       | 1931561       | 1931562       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | A5 reuse      | C1 reuse      | C2 reuse      | C3 reuse      | C4 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 11            | 9.1           | 11            | 12            | 12            |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 1.2           | 1.2           | 1.2           | 1.2           | 1.2           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.2   | 8.3   | 8.2   | 8.2   | 8.3   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 160   | 110   | 220   | 260   | 290   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 1.6   | 1.4   | 1.8   | 3.3   | 2.6   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 1.6   | 1.4   | 1.8   | 3.3   | 2.6   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 100   | 60    | 81    | 95    | 80    |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.051 | 0.030 | 0.041 | 0.048 | 0.040 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 50.6  | 30.2  | 40.6  | 47.7  | 39.8  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | 3.1   | < 1.0 | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 11    | 6.2   | 6.2   | 9.1   | 10    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.0   | 0.9   | 1.1   | 1.3   | 1.1   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                       | 1931558       | 1931559       | 1931560       | 1931561       | 1931562       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | A5 reuse      | C1 reuse      | C2 reuse      | C3 reuse      | C4 reuse      |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | 0.47          | 0.59          | 0.72          | 0.96          | 0.35          |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 1.1           | 1.7           | 2.0           | 2.9           | 0.81          |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | 0.18          | 0.16          | 0.33          | 0.39          | 0.12          |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 0.60          | 0.67          | 1.1           | 1.9           | 0.45          |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 5.2           | 6.4           | 11            | 22            | 3.9           |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 1.8           | 2.5           | 3.9           | 6.9           | 1.4           |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 14            | 19            | 28            | 36            | 11            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 13            | 18            | 25            | 30            | 10            |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 11            | 15            | 22            | 22            | 8.1           |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 9.8           | 13            | 19            | 19            | 7.2           |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 13            | 18            | 26            | 23            | 9.8           |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 5.3           | 7.2           | 10            | 10            | 3.7           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 11            | 15            | 22            | 20            | 8.0           |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 6.0           | 7.8           | 11            | 9.6           | 4.5           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 1.6           | 2.2           | 3.1           | 2.8           | 1.2           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 6.1           | 7.9           | 11            | 9.9           | 4.4           |

#### Total PAHs

|                             |       |     |        |     |     |     |     |      |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 101 | 134 | 197 | 218 | 75.0 |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 24    | 21    | 26    | 22    | 23    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 37    | 36    | 31    | 38    | 32    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 42    | 38    | 42    | 37    | 38    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 82000 | 79000 | 61000 | 79000 | 60000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 130   | 110   | 180   | 120   | 140   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 41    | 42    | 30    | 30    | 27    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | 1.4   | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 170   | 150   | 190   | 120   | 150   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| Lab Sample Number                       |       |                    |                         | 1931558       | 1931559       | 1931560       | 1931561       | 1931562       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | A5 reuse      | C1 reuse      | C2 reuse      | C3 reuse      | C4 reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    | 06/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         | < 2.0         | < 2.0         | < 2.0         | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         | < 8.0         | < 8.0         | < 8.0         | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          | < 10          | < 10          | < 10          | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 9.3           | 9.6           | 17            | 25            | 19            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 57            | 63            | 130           | 120           | 100           |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 98            | 120           | 240           | 160           | 210           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 160           | 200           | 390           | 310           | 330           |

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 21-85742

Project / Site name: NGPH Arundel

Your Order No: 81914

| Lab Sample Number                       |       |                    |                       | 1931563       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|
| Sample Reference                        |       |                    |                       | C5 reuse      |
| Sample Number                           |       |                    |                       | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied |
| Date Sampled                            |       |                    |                       | 06/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |
| Stone Content                           | %     | 0.1                | NONE                  | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                  | 11            |
| Total mass of sample received           | kg    | 0.001              | NONE                  | 1.3           |

|                                               |      |       |           |              |
|-----------------------------------------------|------|-------|-----------|--------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            |

#### General Inorganics

|                                                                         |          |         |           |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.3   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 210   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 4.9   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 4.9   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 140   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.070 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 70.4  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 1.3   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 13    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.3   |

#### Phenols by HPLC

|                                             |       |     |           |        |
|---------------------------------------------|-------|-----|-----------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |
|----------------------|-------|-----|-----------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 |
|----------------------|-------|-----|-----------|-------|

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| <b>Lab Sample Number</b>                |       |                    |                       | 1931563       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|
| <b>Sample Reference</b>                 |       |                    |                       | C5 reuse      |
| <b>Sample Number</b>                    |       |                    |                       | None Supplied |
| <b>Depth (m)</b>                        |       |                    |                       | None Supplied |
| <b>Date Sampled</b>                     |       |                    |                       | 06/07/2021    |
| <b>Time Taken</b>                       |       |                    |                       | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |
| <b>Speciated PAHs</b>                   |       |                    |                       |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                | 0.65          |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                | 1.6           |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                | 0.25          |
| Fluorene                                | mg/kg | 0.05               | MCERTS                | 0.98          |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                | 10            |
| Anthracene                              | mg/kg | 0.05               | MCERTS                | 3.7           |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                | 25            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                | 23            |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                | 18            |
| Chrysene                                | mg/kg | 0.05               | MCERTS                | 16            |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 21            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                | 8.3           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                | 18            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                | 9.3           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                | 2.6           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                | 9.6           |

**Total PAHs**

|                             |       |     |        |     |
|-----------------------------|-------|-----|--------|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 168 |
|-----------------------------|-------|-----|--------|-----|

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |
|-----------------------------------|-------|-----|--------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 27    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 37    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 45    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 71000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 140   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 29    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 170   |

**Monoaromatics & Oxygenates**

|                                    |       |   |        |       |
|------------------------------------|-------|---|--------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 |

**Analytical Report Number: 21-85742**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81914**

| <b>Lab Sample Number</b>                |       |                    |                         | 1931563       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|
| <b>Sample Reference</b>                 |       |                    |                         | C5 reuse      |
| <b>Sample Number</b>                    |       |                    |                         | None Supplied |
| <b>Depth (m)</b>                        |       |                    |                         | None Supplied |
| <b>Date Sampled</b>                     |       |                    |                         | 06/07/2021    |
| <b>Time Taken</b>                       |       |                    |                         | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | < 2.0         |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | < 8.0         |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | < 8.0         |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | < 10          |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | 2.2           |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 9.6           |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 81            |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 150           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 240           |

U/S = Unsuitable Sample I/S = Insufficient Sample





Analytical Report Number: **21-85742**  
Project / Site name: **NGPH Arundel**  
Your Order No: **81914**

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number  | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results       | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|----------------|-----------|------------------|-------------------|---------------------------------------------------|-------------------|---------------------------------------|----------------------------|
| <b>1931538</b> | B1 reuse  |                  | 169               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1931541</b> | B4 reuse  |                  | 182               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1931543</b> | A1 NW     | 0.30             | 172               | Loose Fibres                                      | <b>Amosite</b>    | < 0.001                               | <b>&lt; 0.001</b>          |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 21-85742**
**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                            |
|-------------------|------------------|---------------|---------------|-------------------------------------------------|
| 1931538           | B1 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931539           | B2 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931540           | B3 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931541           | B4 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931542           | B5 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931543           | A1 NW            | None Supplied | 0.3           | Brown clay and loam with gravel.                |
| 1931544           | B1 NW            | None Supplied | 0.5           | Brown clay and loam with gravel and vegetation. |
| 1931545           | C1 NW            | None Supplied | 0.3           | Brown clay and loam with gravel.                |
| 1931546           | A5 SE            | None Supplied | 0.3           | Brown clay and loam with gravel and vegetation. |
| 1931547           | B5 SE            | None Supplied | 0.3           | Brown clay and loam with gravel.                |
| 1931548           | C5 SE            | None Supplied | 0.3           | Brown clay and loam with gravel and vegetation. |
| 1931549           | D8 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel and vegetation. |
| 1931550           | E8 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931551           | D8 SE            | None Supplied | 0.3           | Brown clay and loam with gravel.                |
| 1931552           | E8 SE            | None Supplied | 0.3           | Brown clay and loam with gravel.                |
| 1931553           | E8 NE            | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931554           | A1 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931555           | A2 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931556           | A3 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931557           | A4 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931558           | A5 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931559           | C1 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931560           | C2 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931561           | C3 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931562           | C4 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |
| 1931563           | C5 reuse         | None Supplied | None Supplied | Brown clay and loam with gravel.                |

**Analytical Report Number : 21-85742**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-85742**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



4041 **M/CERTS**



Environmental Science

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## **Analytical Report Number : 21-87241**

Replaces Analytical Report Number: 21-87241, issue no. 2  
Result correction by laboratory.

|                             |                 |                                                        |            |
|-----------------------------|-----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arundel    | <b>Samples received on:</b>                            | 15/07/2021 |
| <b>Your job number:</b>     | C1820           | <b>Samples instructed on/<br/>Analysis started on:</b> | 15/07/2021 |
| <b>Your order number:</b>   | 81957           | <b>Analysis completed by:</b>                          | 12/08/2021 |
| <b>Report Issue Number:</b> | 3               | <b>Report issued on:</b>                               | 13/08/2021 |
| <b>Samples Analysed:</b>    | 12 soil samples |                                                        |            |

**Signed:**

Agnieszka Czerwińska  
Technical Reviewer (Reporting Team)  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 21-87241**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

| Lab Sample Number                    |       |                    |                    | 1939838       | 1939839       | 1939840       | 1939841       | 1939842       |
|--------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                    | D5 reuse      | E5 reuse      | D4 reuse      | E4 reuse      | D3 reuse      |
| Sample Number                        |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                         |       |                    |                    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    |
| Time Taken                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE               | < 0.1         | 44            | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE               | 9.9           | 9.0           | 10            | 9.7           | 12            |
| Total mass of sample received        | kg    | 0.001              | NONE               | 1.8           | 2.0           | 1.8           | 2.0           | 1.6           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Chrysotile | Chrysotile | Chrysotile | Chrysotile | -            |
|-----------------------------------------------|------|-------|-----------|------------|------------|------------|------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected   | Detected   | Detected   | Detected   | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001    | < 0.001    | < 0.001    | < 0.001    | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001    | < 0.001    | < 0.001    | < 0.001    | -            |

#### General Inorganics

| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.4   | 8.3   | 8.4   | 8.3   | 8.2   |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 200   | 200   | 190   | 220   | 220   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0 | 4.3   | 6.8   | 5.9   | 7.7   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | 4.3   | 6.8   | 5.9   | 7.7   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 150   | 170   | 170   | 170   | 220   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.074 | 0.087 | 0.087 | 0.086 | 0.11  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 73.6  | 86.7  | 86.8  | 86.1  | 108   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 6.9   | 6.1   | 6.7   | 12    | 14    |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 14    | 11    | 13    | 13    | 18    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.5   | 1.0   | 1.2   | 1.6   | 1.7   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |       |      |        |      |      |      |     |     |
|------------------------|-------|------|--------|------|------|------|-----|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 1.4  | 2.4  | 2.1  | 9.8 | 3.3 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 4.8  | 5.9  | 6.8  | 14  | 8.1 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.48 | 0.54 | 0.58 | 3.2 | 1.0 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 1.3  | 2.8  | 2.2  | 8.6 | 4.5 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 11   | 20   | 12   | 64  | 31  |
| Anthracene             | mg/kg | 0.05 | MCERTS | 5.8  | 13   | 6.5  | 27  | 11  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 33   | 41   | 35   | 100 | 53  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 29   | 34   | 31   | 88  | 45  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 25   | 29   | 28   | 67  | 39  |
| Chrysene               | mg/kg | 0.05 | MCERTS | 19   | 24   | 21   | 57  | 29  |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 23   | 24   | 22   | 53  | 31  |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 8.2  | 12   | 15   | 29  | 16  |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 20   | 21   | 23   | 52  | 28  |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 11   | 11   | 11   | 25  | 14  |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 3.5  | 3.7  | 3.7  | 8.0 | 4.8 |

Analytical Report Number: 21-87241  
 Project / Site name: NGPH Arundel  
 Your Order No: 81957

| Lab Sample Number                       |       |                    |                         | 1939838       | 1939839       | 1939840       | 1939841       | 1939842       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | D5 reuse      | E5 reuse      | D4 reuse      | E4 reuse      | D3 reuse      |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | 11            | 11            | 12            | 25            | 14            |
| <b>Total PAH</b>                        |       |                    |                         |               |               |               |               |               |
| Speciated Total EPA-16 PAHs             | mg/kg | 0.8                | MCERTS                  | 207           | 256           | 231           | 631           | 332           |

**Analytical Report Number: 21-87241**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

| Lab Sample Number                    |  |  |  | 1939838       | 1939839            | 1939840            | 1939841       | 1939842       |
|--------------------------------------|--|--|--|---------------|--------------------|--------------------|---------------|---------------|
| Sample Reference                     |  |  |  | D5 reuse      | E5 reuse           | D4 reuse           | E4 reuse      | D3 reuse      |
| Sample Number                        |  |  |  | None Supplied | None Supplied      | None Supplied      | None Supplied | None Supplied |
| Depth (m)                            |  |  |  | None Supplied | None Supplied      | None Supplied      | None Supplied | None Supplied |
| Date Sampled                         |  |  |  | 15/07/2021    | 15/07/2021         | 15/07/2021         | 15/07/2021    | 15/07/2021    |
| Time Taken                           |  |  |  | None Supplied | None Supplied      | None Supplied      | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) |  |  |  | Units         | Limit of detection | Acceptation Status |               |               |

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 28    | 34    | 29    | 36    | 37    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 22    | 24    | 25    | 27    | 24    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 28    | 28    | 34    | 36    | 37    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 33000 | 39000 | 38000 | 43000 | 61000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 140   | 140   | 150   | 170   | 680   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 20    | 23    | 20    | 25    | 35    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 160   | 160   | 180   | 240   | 260   |

#### Monocaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | 10      | 24      | 20      |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | 12      | 32      | 25      |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | 46      | 30      |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | 26      | 100     | 75      |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | 5.4     | 4.3     | 5.0     | 9.8     | 6.7     |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 20      | 34      | 25      | 65      | 42      |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 150     | 200     | 88      | 440     | 210     |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 270     | 290     | 140     | 540     | 340     |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 450     | 530     | 260     | 1100    | 600     |

U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number: 21-87241**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

| Lab Sample Number                    |       |                    |                    | 1939843       | 1939844       | 1939845       | 1939846       | 1939847       |
|--------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                    | E3 reuse      | F3 reuse      | D5 SE         | E5 SE         | E5 NE         |
| Sample Number                        |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                    | None Supplied | None Supplied | 0.30          | 0.30          | 0.30          |
| Date Sampled                         |       |                    |                    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    |
| Time Taken                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE               | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE               | 9.0           | 11            | 8.1           | 7.6           | 21            |
| Total mass of sample received        | kg    | 0.001              | NONE               | 1.9           | 1.6           | 1.4           | 1.3           | 1.3           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Chrysotile | -            | -            | Chrysotile | -            |
|-----------------------------------------------|------|-------|-----------|------------|--------------|--------------|------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected   | Not-detected | Not-detected | Detected   | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | 0.001      | -            | -            | < 0.001    | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | 0.001      | -            | -            | < 0.001    | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |      |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.0   | 8.0   | 8.2   | 8.0   | 7.6  |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 220   | 220   | 150   | 400   | 660  |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 8.6   | 19    | < 1.0 | 19    | 80   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 8.6   | 19    | < 1.0 | 19    | 78   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 1.9  |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 190   | 210   | 24    | 850   | 1800 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.095 | 0.11  | 0.012 | 0.42  | 0.89 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 95.0  | 105   | 12.0  | 423   | 892  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 5.6   | 72    | 7.2   | 68    | 62   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 12    | 15    | 12    | 35    | 300  |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | 0.6   | < 0.5 | < 0.5 | < 0.5 | 100  |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.4   | 1.6   | 1.4   | 2.2   | 6.7  |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | 58     |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | 51     |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |     |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-----|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | 110 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-----|

#### Speciated PAHs

|                        |       |      |        |      |      |        |     |     |
|------------------------|-------|------|--------|------|------|--------|-----|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 3.1  | 1.9  | < 0.05 | 2.8 | 18  |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 11   | 5.9  | 1.2    | 15  | 15  |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.89 | 0.57 | < 0.05 | 2.2 | 4.3 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 4.7  | 2.1  | 0.42   | 9.2 | 5.4 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 53   | 12   | 3.0    | 32  | 22  |
| Anthracene             | mg/kg | 0.05 | MCERTS | 28   | 5.8  | 1.2    | 12  | 11  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 77   | 31   | 11     | 55  | 54  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 64   | 28   | 9.9    | 52  | 55  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 55   | 27   | 9.5    | 44  | 44  |
| Chrysene               | mg/kg | 0.05 | MCERTS | 43   | 18   | 9.3    | 32  | 40  |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 42   | 22   | 8.4    | 37  | 44  |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 22   | 10   | 5.6    | 14  | 17  |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 36   | 20   | 8.0    | 31  | 35  |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 20   | 10   | 4.0    | 16  | 17  |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 6.4  | 3.3  | 1.7    | 5.7 | 5.6 |

Analytical Report Number: 21-87241  
 Project / Site name: NGPH Arundel  
 Your Order No: 81957

| Lab Sample Number                       |       |                    |                         | 1939843       | 1939844       | 1939845       | 1939846       | 1939847       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | E3 reuse      | F3 reuse      | D5 SE         | E5 SE         | E5 NE         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied | 0.30          | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                         | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | 19            | 10            | 4.1           | 16            | 17            |
| <b>Total PAH</b>                        |       |                    |                         |               |               |               |               |               |
| Speciated Total EPA-16 PAHs             | mg/kg | 0.8                | MCERTS                  | 486           | 208           | 76.8          | 374           | 403           |

**Analytical Report Number: 21-87241**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

| Lab Sample Number                       |       |                    |                       | 1939843       | 1939844       | 1939845       | 1939846       | 1939847       |
|-----------------------------------------|-------|--------------------|-----------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                       | E3 reuse      | F3 reuse      | D5 SE         | E5 SE         | E5 NE         |
| Sample Number                           |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                       | None Supplied | None Supplied | 0.30          | 0.30          | 0.30          |
| Date Sampled                            |       |                    |                       | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    | 15/07/2021    |
| Time Taken                              |       |                    |                       | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation<br>Status |               |               |               |               |               |
| <b>Heavy Metals / Metalloids</b>        |       |                    |                       |               |               |               |               |               |
| Arsenic (aqua regia extractable)        | mg/kg | 1                  | MCERTS                | 42            | 25            | 15            | 37            | 150           |
| Cadmium (aqua regia extractable)        | mg/kg | 0.2                | MCERTS                | < 0.2         | < 0.2         | < 0.2         | 2.1           | < 0.2         |
| Chromium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                | 24            | 23            | 22            | 37            | 19            |
| Copper (aqua regia extractable)         | mg/kg | 1                  | MCERTS                | 35            | 41            | 33            | 98            | 59            |
| Iron (aqua regia extractable)           | mg/kg | 40                 | MCERTS                | 46000         | 35000         | 30000         | 110000        | 69000         |
| Lead (aqua regia extractable)           | mg/kg | 1                  | MCERTS                | 150           | 240           | 180           | 490           | 320           |
| Mercury (aqua regia extractable)        | mg/kg | 0.3                | MCERTS                | 1.0           | 0.7           | < 0.3         | 2.3           | 1.6           |
| Nickel (aqua regia extractable)         | mg/kg | 1                  | MCERTS                | 27            | 28            | 18            | 67            | 25            |
| Selenium (aqua regia extractable)       | mg/kg | 1                  | MCERTS                | < 1.0         | < 1.0         | < 1.0         | < 1.0         | < 1.0         |
| Zinc (aqua regia extractable)           | mg/kg | 1                  | MCERTS                | 200           | 170           | 140           | 1400          | 190           |

#### Monocaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | 3.9     |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 15      | < 2.0   | < 2.0   | 58      | 48      |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | 25      | < 8.0   | < 8.0   | 130     | 100     |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | 60      | < 8.0   | < 8.0   | 150     | 140     |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 100     | < 10    | < 10    | 340     | 290     |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | 6.1     | 4.3     | < 1.0   | 14      | 20      |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 50      | 28      | 6.8     | 150     | 44      |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 320     | 140     | 57      | 580     | 200     |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 420     | 270     | 160     | 820     | 360     |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 790     | 440     | 220     | 1600    | 620     |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-87241**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

|                                             |              |                           |                           |               |               |
|---------------------------------------------|--------------|---------------------------|---------------------------|---------------|---------------|
| <b>Lab Sample Number</b>                    |              |                           |                           | 1939848       | 1939849       |
| <b>Sample Reference</b>                     |              |                           |                           | Batch 8       | E4 Base       |
| <b>Sample Number</b>                        |              |                           |                           | None Supplied | None Supplied |
| <b>Depth (m)</b>                            |              |                           |                           | None Supplied | 3.00          |
| <b>Date Sampled</b>                         |              |                           |                           | 15/07/2021    | 14/07/2021    |
| <b>Time Taken</b>                           |              |                           |                           | None Supplied | None Supplied |
| <b>Analytical Parameter (Soil Analysis)</b> | <b>Units</b> | <b>Limit of detection</b> | <b>Acceptation Status</b> |               |               |
| Stone Content                               | %            | 0.1                       | NONE                      | < 0.1         | < 0.1         |
| Moisture Content                            | %            | 0.01                      | NONE                      | 10            | 22            |
| Total mass of sample received               | kg           | 0.001                     | NONE                      | 2.0           | 1.5           |

|                                               |      |       |           |            |              |
|-----------------------------------------------|------|-------|-----------|------------|--------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Chrysotile | -            |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected   | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001    | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001    | -            |

#### General Inorganics

|                                                                         |          |         |           |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.9   | 8.4   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 410   | 270   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 68    | 77    |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 68    | 77    |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 770   | 410   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.38  | 0.21  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 383   | 205   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 110   | 34    |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 39    | 63    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | 0.6   | 310   |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 2.4   | 0.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |
|----------------------|-------|-----|-----------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|

#### Speciated PAHs

|                        |       |      |        |     |     |
|------------------------|-------|------|--------|-----|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 2.3 | 19  |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 14  | 11  |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 1.4 | 4.9 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 6.0 | 28  |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 28  | 55  |
| Anthracene             | mg/kg | 0.05 | MCERTS | 13  | 21  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 56  | 27  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 53  | 21  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 45  | 18  |
| Chrysene               | mg/kg | 0.05 | MCERTS | 34  | 9.9 |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 32  | 7.8 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 22  | 4.2 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 32  | 7.2 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 16  | 2.6 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 5.9 | 1.3 |

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| Lab Sample Number                       |       |                    |                         | 1939848       | 1939849       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | Batch 8       | E4 Base       |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | 3.00          |
| Date Sampled                            |       |                    |                         | 15/07/2021    | 14/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | units | limit of detection | Accreditation<br>Status |               |               |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | 16            | 2.7           |
| Total PAH                               |       |                    |                         |               |               |
| Speciated Total EPA-16 PAHs             | mg/kg | 0.8                | MCERTS                  | 377           | 239           |

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**Project / Site name: NGPH Arundel**  
**Your Order No: 81957**

|                                                 |              |                           |                               |               |               |
|-------------------------------------------------|--------------|---------------------------|-------------------------------|---------------|---------------|
| <b>Lab Sample Number</b>                        |              |                           |                               | 1939848       | 1939849       |
| <b>Sample Reference</b>                         |              |                           |                               | Batch 8       | E4 Base       |
| <b>Sample Number</b>                            |              |                           |                               | None Supplied | None Supplied |
| <b>Depth (m)</b>                                |              |                           |                               | None Supplied | 3.00          |
| <b>Date Sampled</b>                             |              |                           |                               | 15/07/2021    | 14/07/2021    |
| <b>Time Taken</b>                               |              |                           |                               | None Supplied | None Supplied |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | <b>Units</b> | <b>Limit of detection</b> | <b>Acceptation<br/>Status</b> |               |               |
| <b>Heavy Metals / Metalloids</b>                |              |                           |                               |               |               |
| Arsenic (aqua regia extractable)                | mg/kg        | 1                         | MCERTS                        | 38            | 4.2           |
| Cadmium (aqua regia extractable)                | mg/kg        | 0.2                       | MCERTS                        | 3.0           | < 0.2         |
| Chromium (aqua regia extractable)               | mg/kg        | 1                         | MCERTS                        | 38            | 3.7           |
| Copper (aqua regia extractable)                 | mg/kg        | 1                         | MCERTS                        | 100           | 3.4           |
| Iron (aqua regia extractable)                   | mg/kg        | 40                        | MCERTS                        | 86000         | 4000          |
| Lead (aqua regia extractable)                   | mg/kg        | 1                         | MCERTS                        | 1900          | 3.5           |
| Mercury (aqua regia extractable)                | mg/kg        | 0.3                       | MCERTS                        | 1.8           | < 0.3         |
| Nickel (aqua regia extractable)                 | mg/kg        | 1                         | MCERTS                        | 66            | 11            |
| Selenium (aqua regia extractable)               | mg/kg        | 1                         | MCERTS                        | < 1.0         | < 1.0         |
| Zinc (aqua regia extractable)                   | mg/kg        | 1                         | MCERTS                        | 1800          | 32            |

#### Monocaromatics & Oxygenates

|                                    |       |   |        |       |       |
|------------------------------------|-------|---|--------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | 2100  | 520   |
| Toluene                            | µg/kg | 1 | MCERTS | 5000  | 1700  |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | 640   | 280   |
| p & m-xylene                       | µg/kg | 1 | MCERTS | 6900  | 5300  |
| o-xylene                           | µg/kg | 1 | MCERTS | 3000  | 1700  |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |
|----------------------------------|-------|-------|--------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | 0.65    | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 43      | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | 120     | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | 160     | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 330     | < 10    |

|                                 |       |       |        |      |      |
|---------------------------------|-------|-------|--------|------|------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | 2.1  | 0.52 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | 5.0  | 1.7  |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | 18   | 12   |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | 11   | 32   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 100  | 230  |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 490  | 400  |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 770  | 410  |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 1400 | 1100 |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: **21-87241**  
Project / Site name: **NGPH Arundel**  
Your Order No: **81957**

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---------------|-----------|------------------|-------------------|---------------------------------------------------|-------------|---------------------------------------|----------------------------|
| 1939838       | D5 reuse  |                  | 139               | Loose Fibres                                      | Chrysotile  | < 0.001                               | < 0.001                    |
| 1939839       | E5 reuse  |                  | 137               | Loose Fibrous Debris                              | Chrysotile  | < 0.001                               | < 0.001                    |
| 1939840       | D4 reuse  |                  | 136               | Loose Fibres                                      | Chrysotile  | < 0.001                               | < 0.001                    |
| 1939841       | E4 reuse  |                  | 140               | Loose Fibres                                      | Chrysotile  | < 0.001                               | < 0.001                    |
| 1939843       | E3 reuse  |                  | 128               | Loose Fibres & Hard/Cement Type Material          | Chrysotile  | 0.001                                 | 0.001                      |
| 1939846       | E5 SE     | 0.30             | 187               | Loose Fibres                                      | Chrysotile  | < 0.001                               | < 0.001                    |
| 1939848       | Batch 8   |                  | 205               | Loose Fibres                                      | Chrysotile  | < 0.001                               | < 0.001                    |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 21-87241**

**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                                  |
|-------------------|------------------|---------------|---------------|-------------------------------------------------------|
| 1939838           | D5 reuse         | None Supplied | None Supplied | Brown loam and clay with gravel and brick.            |
| 1939839           | E5 reuse         | None Supplied | None Supplied | Brown clay and sand with stones and gravel            |
| 1939840           | D4 reuse         | None Supplied | None Supplied | Brown clay and sand with rubble and brick.            |
| 1939841           | E4 reuse         | None Supplied | None Supplied | Brown clay and sand with rubble and brick.            |
| 1939842           | D3 reuse         | None Supplied | None Supplied | Brown clay and sand with rubble and brick.            |
| 1939843           | E3 reuse         | None Supplied | None Supplied | Brown clay and sand with gravel and vegetation.       |
| 1939844           | F3 reuse         | None Supplied | None Supplied | Brown clay and sand with rubble and chalk.            |
| 1939845           | D5 SE            | None Supplied | 0.3           | Light brown clay and sand with gravel and vegetation. |
| 1939846           | E5 SE            | None Supplied | 0.3           | Brown clay and sand with rubble and brick.            |
| 1939847           | E5 NE            | None Supplied | 0.3           | Black clay and sand with gravel and oil / petroleum.  |
| 1939848           | Batch 8          | None Supplied | None Supplied | Brown clay and sand with brick and gravel             |
| 1939849           | E4 Base          | None Supplied | 3             | Beige clay with chalk and gravel.                     |



**Analytical Report Number : 21-87241**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-87241**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

**Steve Gronow**  
Celtic EnGlobe  
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Herts,  
WD18 8YS

## **Analytical Report Number : 21-88318**

|                             |                 |                                                        |            |
|-----------------------------|-----------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | NGPH Arundel    | <b>Samples received on:</b>                            | 21/07/2021 |
| <b>Your job number:</b>     | C1820           | <b>Samples instructed on/<br/>Analysis started on:</b> | 21/07/2021 |
| <b>Your order number:</b>   | 81975           | <b>Analysis completed by:</b>                          | 29/07/2021 |
| <b>Report Issue Number:</b> | 1               | <b>Report issued on:</b>                               | 29/07/2021 |
| <b>Samples Analysed:</b>    | 12 soil samples |                                                        |            |

**Signed:**

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-88318  
Project / Site name: NGPH Arundel  
Your Order No: 81975

| Lab Sample Number                       |       |                    |                         | 1946300       | 1946301       | 1946302       | 1946303       | 1946304       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | F3 NE         | F2 NE         | F1 NE         | F1 NW         | E1 NW         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 7.8           | 9.9           | 5.4           | 5.6           | 7.0           |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.0           | 1.0           | 1.0           | 1.0           | 1.0           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Chrysotile | Chrysotile | Chrysotile | Chrysotile | Chrysotile |
|-----------------------------------------------|------|-------|-----------|------------|------------|------------|------------|------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected   | Detected   | Detected   | Detected   | Detected   |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001    | 0.002      | < 0.001    | < 0.001    | < 0.001    |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001    | 0.002      | < 0.001    | < 0.001    | < 0.001    |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.9   | 7.8   | 7.8   | 8.2   | 8.8   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 430   | 740   | 480   | 470   | 900   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 2.1   | 120   | 46    | 25    | 3.0   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 2.1   | 120   | 46    | 25    | 3.0   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | 1.3   | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 470   | 1100  | 660   | 660   | 2100  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.24  | 0.57  | 0.33  | 0.33  | 1.0   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 235   | 570   | 330   | 331   | 1030  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 10    | 5.3   | 5.8   | 4.9   | 9.4   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 5.7   | 4.7   | 3.9   | 11    | 29    |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | 1.4   | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 2.5   | 2.0   | 1.4   | 1.6   | 1.2   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

| Lab Sample Number                       |       |                    |                         | 1946300       | 1946301       | 1946302       | 1946303       | 1946304       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | F3 NE         | F2 NE         | F1 NE         | F1 NW         | E1 NW         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
|                                         |       |                    |                         |               |               |               |               |               |

#### Speciated PAHs

|                        |       |      |        |      |      |      |      |     |
|------------------------|-------|------|--------|------|------|------|------|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | 2.3  | 1.9  | 1.8  | 2.8  | 2.9 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | 5.6  | 4.5  | 2.8  | 4.9  | 6.4 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | 0.68 | 0.57 | 0.54 | 0.72 | 1.5 |
| Fluorene               | mg/kg | 0.05 | MCERTS | 2.8  | 1.9  | 1.4  | 2.9  | 6.2 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | 28   | 20   | 18   | 21   | 38  |
| Anthracene             | mg/kg | 0.05 | MCERTS | 10   | 8.4  | 5.9  | 10   | 18  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | 37   | 36   | 31   | 34   | 39  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | 39   | 35   | 28   | 33   | 41  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | 39   | 31   | 25   | 30   | 36  |
| Chrysene               | mg/kg | 0.05 | MCERTS | 34   | 30   | 23   | 27   | 28  |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | 43   | 34   | 30   | 31   | 42  |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | 24   | 24   | 14   | 19   | 18  |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | 41   | 35   | 27   | 30   | 35  |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 21   | 18   | 14   | 15   | 19  |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | 6.5  | 4.8  | 4.1  | 4.1  | 6.0 |
| Benzo(ghi)perylene     | mg/kg | 0.05 | MCERTS | 24   | 20   | 15   | 15   | 20  |

#### Total PAH

|                             |       |     |        |     |     |     |     |     |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 358 | 305 | 240 | 282 | 356 |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 25    | 24    | 26    | 31    | 30    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 24    | 24    | 28    | 28    | 29    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 62    | 64    | 53    | 33    | 30    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 32000 | 35000 | 39000 | 35000 | 36000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 410   | 780   | 340   | 160   | 120   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | 14    | 8.2   | 9.9   | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 23    | 23    | 23    | 23    | 22    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 380   | 270   | 220   | 170   | 250   |

#### Monosromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

| Lab Sample Number                       |       |                    |                         | 1946300       | 1946301       | 1946302       | 1946303       | 1946304       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | F3 NE         | F2 NE         | F1 NE         | F1 NW         | E1 NW         |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | 0.50          | 0.50          | 0.50          | 0.50          |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |

**Petroleum Hydrocarbons**

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 4.9     | < 2.0   | 6.1     | 3.8     | 8.0     |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | 11      | < 8.0   | 12      | 11      | 15      |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | 34      | < 8.0   | 41      | 25      | 32      |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 50      | < 10    | 60      | 39      | 55      |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | 2.5     | 2.9     | 2.7     | 2.2     | 5.1     |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | 12      | 19      | 11      | 15      | 20      |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | 100     | 180     | 95      | 97      | 140     |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | 240     | 440     | 200     | 180     | 240     |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | 360     | 640     | 310     | 290     | 400     |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

| Lab Sample Number                       |       |                    |                         | 1946305       | 1946306       | 1946307       | 1946308       | 1946309       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | D1 NW         | D1 Re-use     | E1 Re-use     | F1 Re-use     | D2 Re-use     |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 5.9           | 7.7           | 8.1           | 4.5           | 6.2           |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 1.0           | 1.0           | 1.0           | 1.0           | 1.0           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | Amosite  | -            | Chrysotile | -            | Chrysotile |
|-----------------------------------------------|------|-------|-----------|----------|--------------|------------|--------------|------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Detected | Not-detected | Detected   | Not-detected | Detected   |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | < 0.001  | -            | < 0.001    | -            | < 0.001    |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | < 0.001  | -            | < 0.001    | -            | < 0.001    |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.1   | 8.1   | 10.3  | 8.5   | 8.3   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 550   | 330   | 560   | 240   | 240   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 6.1   | 5.5   | 1.2   | 9.1   | 28    |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 6.1   | 5.5   | 1.2   | 9.1   | 28    |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 710   | 280   | 930   | 250   | 180   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.35  | 0.14  | 0.46  | 0.13  | 0.092 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 354   | 141   | 463   | 127   | 92.3  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 4.2   | 2.7   | 17    | 1.6   | < 1.0 |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 10    | 20    | 94    | 8.4   | 7.3   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | 52    | 35    | 150   | 28    |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 1.1   | 0.6   | 1.0   | 0.5   | 0.5   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

Analytical Report Number: 21-88318  
Project / Site name: NGPH Arundel  
Your Order No: 81975

| Lab Sample Number                       |       |                    |                         | 1946305       | 1946306       | 1946307       | 1946308       | 1946309       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | D1 NW         | D1 Re-use     | E1 Re-use     | F1 Re-use     | D2 Re-use     |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                         |               |               |               |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                  | 1.6           | 2.7           | 19            | 5.4           | 8.3           |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                  | 3.8           | 2.6           | 6.4           | 3.1           | 3.9           |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                  | 0.53          | 1.1           | 3.1           | 2.3           | 2.4           |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | 1.7           | 4.4           | 14            | 7.0           | 9.6           |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | 14            | 20            | 37            | 30            | 30            |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | 6.1           | 6.6           | 19            | 10            | 13            |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | 35            | 25            | 35            | 28            | 26            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | 30            | 21            | 34            | 24            | 22            |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | 21            | 14            | 31            | 19            | 17            |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | 19            | 12            | 27            | 15            | 13            |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | 24            | 14            | 31            | 17            | 16            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | 13            | 8.7           | 18            | 10            | 7.1           |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | 23            | 13            | 28            | 16            | 13            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | 11            | 6.6           | 13            | 7.1           | 5.8           |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                  | 3.4           | 2.1           | 4.5           | 2.2           | 2.0           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | 12            | 6.9           | 14            | 7.1           | 6.1           |

#### Total PAH

|                             |       |     |        |     |     |     |     |     |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 220 | 160 | 336 | 203 | 194 |
|-----------------------------|-------|-----|--------|-----|-----|-----|-----|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 25    | 24    | 25    | 21    | 21    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 28    | 35    | 36    | 34    | 31    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 27    | 26    | 32    | 23    | 22    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 34000 | 52000 | 53000 | 47000 | 50000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 110   | 73    | 87    | 40    | 46    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 21    | 37    | 36    | 34    | 33    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 130   | 100   | 110   | 67    | 73    |

#### Monosromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | 1.2   | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | 6.7   | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | 3.5   | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |



Analytical Report Number: 21-88318  
 Project / Site name: NGPH Arundel  
 Your Order No: 81975

| Lab Sample Number                       |       |                    |                         | 1946305       | 1946306       | 1946307       | 1946308       | 1946309       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | D1 NW         | D1 Re-use     | E1 Re-use     | F1 Re-use     | D2 Re-use     |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.50          | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |               |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | < 1.0         | 2.2           | 1.6           | < 1.0         | 2.2           |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | 6.6           | 11            | 7.7           | 3.9           | 6.5           |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | 13            | 34            | 22            | 16            | 17            |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | 37            | 110           | 100           | 92            | 89            |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | 57            | 160           | 140           | 110           | 110           |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | < 0.001       | 0.029         | < 0.001       | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | 2.2           | 3.2           | 14            | 5.0           | 4.1           |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 14            | 24            | 60            | 47            | 31            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 84            | 90            | 190           | 130           | 100           |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 160           | 160           | 270           | 210           | 140           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 260           | 270           | 530           | 400           | 280           |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

|                                                 |              |                           |                                 |               |               |
|-------------------------------------------------|--------------|---------------------------|---------------------------------|---------------|---------------|
| <b>Lab Sample Number</b>                        |              |                           |                                 | 1946310       | 1946311       |
| <b>Sample Reference</b>                         |              |                           |                                 | E2 Re-use     | F2 Re-use     |
| <b>Sample Number</b>                            |              |                           |                                 | None Supplied | None Supplied |
| <b>Depth (m)</b>                                |              |                           |                                 | None Supplied | None Supplied |
| <b>Date Sampled</b>                             |              |                           |                                 | 20/07/2021    | 20/07/2021    |
| <b>Time Taken</b>                               |              |                           |                                 | None Supplied | None Supplied |
| <b>Analytical Parameter<br/>(Soil Analysis)</b> | <b>Units</b> | <b>Limit of detection</b> | <b>Accreditation<br/>Status</b> |               |               |
| Stone Content                                   | %            | 0.1                       | NONE                            | < 0.1         | < 0.1         |
| Moisture Content                                | %            | 0.01                      | NONE                            | 6.0           | 4.1           |
| Total mass of sample received                   | kg           | 0.001                     | NONE                            | 1.0           | 1.0           |

|                                               |      |       |           |              |            |
|-----------------------------------------------|------|-------|-----------|--------------|------------|
| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | Chrysotile |
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Detected   |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | < 0.001    |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | < 0.001    |

#### General Inorganics

|                                                                         |          |         |           |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 8.2   | 8.2   |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 300   | 360   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | 11    | 2.9   |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | 11    | 2.9   |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 340   | 480   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.17  | 0.24  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 170   | 239   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 1.9   | 2.9   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 13    | 9.3   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | 38    | 150   |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 0.8   | 0.8   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |
|----------------------|-------|-----|-----------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

| Lab Sample Number                       |       |                    |                         | 1946310       | 1946311       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | E2 Re-use     | F2 Re-use     |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                         | 20/07/2021    | 20/07/2021    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |
| <b>Speciated PAHs</b>                   |       |                    |                         |               |               |
| Naphthalene                             | mg/kg | 0.05               | MCERTS                  | 5.5           | 5.2           |
| Acenaphthylene                          | mg/kg | 0.05               | MCERTS                  | 5.1           | 5.6           |
| Acenaphthene                            | mg/kg | 0.05               | MCERTS                  | 2.2           | 1.7           |
| Fluorene                                | mg/kg | 0.05               | MCERTS                  | 7.5           | 5.8           |
| Phenanthrene                            | mg/kg | 0.05               | MCERTS                  | 37            | 33            |
| Anthracene                              | mg/kg | 0.05               | MCERTS                  | 12            | 14            |
| Fluoranthene                            | mg/kg | 0.05               | MCERTS                  | 39            | 37            |
| Pyrene                                  | mg/kg | 0.05               | MCERTS                  | 34            | 32            |
| Benzo(a)anthracene                      | mg/kg | 0.05               | MCERTS                  | 30            | 28            |
| Chrysene                                | mg/kg | 0.05               | MCERTS                  | 24            | 26            |
| Benzo(b)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | 28            | 32            |
| Benzo(k)fluoranthene                    | mg/kg | 0.05               | MCERTS                  | 18            | 18            |
| Benzo(a)pyrene                          | mg/kg | 0.05               | MCERTS                  | 26            | 29            |
| Indeno(1,2,3-cd)pyrene                  | mg/kg | 0.05               | MCERTS                  | 14            | 14            |
| Dibenz(a,h)anthracene                   | mg/kg | 0.05               | MCERTS                  | 4.4           | 4.5           |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS                  | 15            | 15            |

**Total PAH**

|                             |       |     |        |     |     |
|-----------------------------|-------|-----|--------|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 302 | 300 |
|-----------------------------|-------|-----|--------|-----|-----|

**Heavy Metals / Metalloids**

|                                   |       |     |        |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 24    | 22    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 33    | 30    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 25    | 25    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 52000 | 48000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 89    | 83    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 35    | 37    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 91    | 100   |

**Monosromatics & Oxygenates**

|                                    |       |   |        |       |       |
|------------------------------------|-------|---|--------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | 3.8   | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | 2.3   | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 |

**Analytical Report Number: 21-88318**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81975**

| <b>Lab Sample Number</b>                |       |                    |                         | 1946310       | 1946311       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|
| <b>Sample Reference</b>                 |       |                    |                         | E2 Re-use     | F2 Re-use     |
| <b>Sample Number</b>                    |       |                    |                         | None Supplied | None Supplied |
| <b>Depth (m)</b>                        |       |                    |                         | None Supplied | None Supplied |
| <b>Date Sampled</b>                     |       |                    |                         | 20/07/2021    | 20/07/2021    |
| <b>Time Taken</b>                       |       |                    |                         | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |
| <b>Petroleum Hydrocarbons</b>           |       |                    |                         |               |               |
| TPH-CWG - Aliphatic >EC5 - EC6          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC6 - EC8          | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC8 - EC10         | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       |
| TPH-CWG - Aliphatic >EC10 - EC12        | mg/kg | 1                  | MCERTS                  | 1.8           | 2.7           |
| TPH-CWG - Aliphatic >EC12 - EC16        | mg/kg | 2                  | MCERTS                  | 8.0           | 7.7           |
| TPH-CWG - Aliphatic >EC16 - EC21        | mg/kg | 8                  | MCERTS                  | 23            | 23            |
| TPH-CWG - Aliphatic >EC21 - EC35        | mg/kg | 8                  | MCERTS                  | 91            | 100           |
| TPH-CWG - Aliphatic (EC5 - EC35)        | mg/kg | 10                 | MCERTS                  | 120           | 130           |
| TPH-CWG - Aromatic >EC5 - EC7           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC7 - EC8           | mg/kg | 0.001              | MCERTS                  | < 0.001       | < 0.001       |
| TPH-CWG - Aromatic >EC8 - EC10          | mg/kg | 0.001              | MCERTS                  | 0.018         | < 0.001       |
| TPH-CWG - Aromatic >EC10 - EC12         | mg/kg | 1                  | MCERTS                  | 5.2           | 4.3           |
| TPH-CWG - Aromatic >EC12 - EC16         | mg/kg | 2                  | MCERTS                  | 38            | 27            |
| TPH-CWG - Aromatic >EC16 - EC21         | mg/kg | 10                 | MCERTS                  | 160           | 130           |
| TPH-CWG - Aromatic >EC21 - EC35         | mg/kg | 10                 | MCERTS                  | 220           | 260           |
| TPH-CWG - Aromatic (EC5 - EC35)         | mg/kg | 10                 | MCERTS                  | 420           | 420           |

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: **21-88318**  
 Project / Site name: **NGPH Arundel**  
 Your Order No: **81975**

## Certificate of Analysis - Asbestos Quantification

### Methods:

#### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number  | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results       | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|----------------|-----------|------------------|-------------------|---------------------------------------------------|-------------------|---------------------------------------|----------------------------|
| <b>1946300</b> | F3 NE     | 0.50             | 147               | Loose Fibrous Debris                              | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946301</b> | F2 NE     | 0.50             | 161               | Loose Fibres & Loose Fibrous Debris               | <b>Chrysotile</b> | 0.002                                 | <b>0.002</b>               |
| <b>1946302</b> | F1 NE     | 0.50             | 148               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946303</b> | F1 NW     | 0.50             | 149               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946304</b> | E1 NW     | 0.50             | 160               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946305</b> | D1 NW     | 0.50             | 156               | Loose Fibres                                      | <b>Amosite</b>    | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946307</b> | E1 Re-use |                  | 190               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946309</b> | D2 Re-use |                  | 181               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |
| <b>1946311</b> | F2 Re-use |                  | 197               | Loose Fibres                                      | <b>Chrysotile</b> | < 0.001                               | <b>&lt; 0.001</b>          |

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

**Analytical Report Number : 21-88318**  
**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                   |
|-------------------|------------------|---------------|---------------|----------------------------------------|
| 1946300           | F3 NE            | None Supplied | 0.5           | Brown loam with gravel and vegetation. |
| 1946301           | F2 NE            | None Supplied | 0.5           | Brown loam with gravel and vegetation. |
| 1946302           | F1 NE            | None Supplied | 0.5           | Brown loam with gravel and vegetation. |
| 1946303           | F1 NW            | None Supplied | 0.5           | Brown gravel.**                        |
| 1946304           | E1 NW            | None Supplied | 0.5           | Brown gravel.**                        |
| 1946305           | D1 NW            | None Supplied | 0.5           | Brown gravel.**                        |
| 1946306           | D1 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |
| 1946307           | E1 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |
| 1946308           | F1 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |
| 1946309           | D2 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |
| 1946310           | E2 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |
| 1946311           | F2 Re-use        | None Supplied | None Supplied | Brown clay with gravel.                |

\*\* Non MCERTS matrix

**Analytical Report Number : 21-88318**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-88318**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



**Steve Gronow**  
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## **Analytical Report Number : 21-89823**

|                      |                 |                                                |            |
|----------------------|-----------------|------------------------------------------------|------------|
| Project / Site name: | NGPH Arundel    | Samples received on:                           | 29/07/2021 |
| Your job number:     | C1820           | Samples instructed on/<br>Analysis started on: | 29/07/2021 |
| Your order number:   | 81997           | Analysis completed by:                         | 06/08/2021 |
| Report Issue Number: | 1               | Report issued on:                              | 06/08/2021 |
| Samples Analysed:    | 10 soil samples |                                                |            |

**Signed:**

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 21-89823**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81997**

| Lab Sample Number                    |       |                    |                    | 1955574       | 1955575       | 1955576       | 1955577       | 1955578       |
|--------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                    | Type 1 Cap 8  | Type 1 Cap 9  | Type 1 Cap 10 | Type 1 Cap 11 | Type 1 Cap 12 |
| Sample Number                        |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                         |       |                    |                    | 28/07/2021    | 28/07/2021    | 28/07/2021    | 28/07/2021    | 28/07/2021    |
| Time Taken                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE               | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE               | 1.7           | 3.2           | 2.2           | 3.1           | 1.2           |
| Total mass of sample received        | kg    | 0.001              | NONE               | 1.5           | 1.5           | 1.5           | 1.4           | 1.5           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | -            | -            | -            |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|--------------|--------------|--------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | -            | -            | -            |

#### General Inorganics

| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 7.8   | 9.3   | 9.2   | 9.3   | 9.5   |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 120   | 140   | 140   | 160   | 140   |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 56    | 88    | 92    | 100   | 110   |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.028 | 0.044 | 0.046 | 0.051 | 0.057 |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 27.8  | 44.2  | 45.9  | 51.3  | 56.9  |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 5.8   | 1.7   | 1.3   | 2.4   | 2.2   |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 6.6   | 4.5   | 6.7   | 5.0   | 6.2   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 0.2   | 0.2   | 0.3   | 0.2   | 0.3   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xyenols and Ethylphenols              | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |       |      |        |        |        |        |        |        |
|------------------------|-------|------|--------|--------|--------|--------|--------|--------|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.30   |
| Anthracene             | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.48   |
| Pyrene                 | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.40   |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.22   |
| Chrysene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.25   |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Analytical Report Number: 21-89823**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81997**

| Lab Sample Number                       |       |                    |                    | 1955574       | 1955575       | 1955576       | 1955577       | 1955578       |
|-----------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                    | Type 1 Cap 8  | Type 1 Cap 9  | Type 1 Cap 10 | Type 1 Cap 11 | Type 1 Cap 12 |
| Sample Number                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                            |       |                    |                    | 28/07/2021    | 28/07/2021    | 28/07/2021    | 28/07/2021    | 28/07/2021    |
| Time Taken                              |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS             | < 0.05        | < 0.05        | < 0.05        | < 0.05        | < 0.05        |

#### Total PAH

|                             |       |     |        |        |        |        |        |      |
|-----------------------------|-------|-----|--------|--------|--------|--------|--------|------|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | < 0.80 | < 0.80 | < 0.80 | 1.65 |
|-----------------------------|-------|-----|--------|--------|--------|--------|--------|------|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 2.0   | 3.0   | 3.1   | 3.2   | 3.3   |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 18    | 16    | 15    | 35    | 22    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 5.0   | 6.3   | 5.9   | 8.4   | 13    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 18000 | 20000 | 18000 | 24000 | 17000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 6.9   | 7.9   | 6.5   | 7.6   | 13    |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 10    | 11    | 10    | 32    | 21    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 45    | 45    | 42    | 53    | 47    |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | < 8.0   | < 8.0   | < 8.0   |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |

|                                 |       |       |        |         |         |         |         |         |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | < 1.0   | < 1.0   | < 1.0   |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | < 2.0   | < 2.0   | < 2.0   |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | < 10    |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | 17      |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | < 10    | < 10    | 25      |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number: 21-89823**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81997**

| Lab Sample Number                    |       |                    |                    | 1955579       | 1955580       | 1955581       | 1955582       | 1955583       |
|--------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                     |       |                    |                    | Type 1 Cap 13 | Type 1 Cap 14 | Batch 28      | ES NE 2       | Batch 29      |
| Sample Number                        |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                            |       |                    |                    | None Supplied | None Supplied | None Supplied | 0.30          | None Supplied |
| Date Sampled                         |       |                    |                    | 28/07/2021    | 28/07/2021    | 22/07/2021    | 28/07/2021    | 22/07/2021    |
| Time Taken                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter (Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Stone Content                        | %     | 0.1                | NONE               | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                     | %     | 0.01               | NONE               | 4.2           | 4.1           | 21            | 13            | 23            |
| Total mass of sample received        | kg    | 0.001              | NONE               | 1.4           | 1.4           | 1.3           | 1.3           | 1.4           |

| Asbestos in Soil Screen / Identification Name | Type | N/A   | ISO 17025 | -            | -            | Chrysotile | -            | Chrysotile |
|-----------------------------------------------|------|-------|-----------|--------------|--------------|------------|--------------|------------|
| Asbestos in Soil                              | Type | N/A   | ISO 17025 | Not-detected | Not-detected | Detected   | Not-detected | Detected   |
| Asbestos Quantification (Stage 2)             | %    | 0.001 | ISO 17025 | -            | -            | < 0.001    | -            | < 0.001    |
| Asbestos Quantification Total                 | %    | 0.001 | ISO 17025 | -            | -            | < 0.001    | -            | < 0.001    |

#### General Inorganics

|                                                                         |          |         |           |       |       |       |       |       |
|-------------------------------------------------------------------------|----------|---------|-----------|-------|-------|-------|-------|-------|
| pH - Automated                                                          | pH Units | N/A     | MCERTS    | 9.4   | 9.5   | 11.7  | 8.5   | 11.5  |
| Electrical Conductivity                                                 | µS/cm    | 10      | ISO 17025 | 130   | 140   | 2000  | 220   | 1900  |
| Total Cyanide                                                           | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Complex Cyanide                                                         | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide                                                            | mg/kg    | 1       | MCERTS    | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Water Soluble Sulphate as SO <sub>4</sub> 16hr extraction (2:1)         | mg/kg    | 2.5     | MCERTS    | 91    | 88    | 1400  | 120   | 1700  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | g/l      | 0.00125 | MCERTS    | 0.046 | 0.044 | 0.72  | 0.061 | 0.87  |
| Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent) | mg/l     | 1.25    | MCERTS    | 45.5  | 43.9  | 715   | 61.0  | 875   |
| Sulphide                                                                | mg/kg    | 1       | MCERTS    | 2.4   | < 1.0 | 58    | 7.1   | 54    |
| Water Soluble Chloride (2:1)                                            | mg/kg    | 1       | MCERTS    | 5.3   | 6.7   | 440   | 38    | 450   |
| Ammoniacal Nitrogen as NH <sub>4</sub>                                  | mg/kg    | 0.5     | MCERTS    | < 0.5 | < 0.5 | 74    | < 0.5 | 57    |
| Total Organic Carbon (TOC)                                              | %        | 0.1     | MCERTS    | 0.3   | 0.2   | 3.4   | 1.8   | 3.5   |

#### Phenols by HPLC

|                                             |       |     |           |        |        |        |        |        |
|---------------------------------------------|-------|-----|-----------|--------|--------|--------|--------|--------|
| Catechol                                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Resorcinol                                  | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Cresols (o-, m-, p-)                        | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |
| Total Naphthols (sum of 1- and 2- Naphthol) | mg/kg | 0.2 | ISO 17025 | < 0.20 | < 0.20 | < 0.20 | < 0.20 | < 0.20 |
| 2-Isopropylphenol                           | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Phenol                                      | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Trimethylphenol (2,3,5-)                    | mg/kg | 0.1 | ISO 17025 | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |
| Total Xylenols and Ethylphenols             | mg/kg | 0.3 | ISO 17025 | < 0.30 | < 0.30 | < 0.30 | < 0.30 | < 0.30 |

#### Total Phenols

|                      |       |     |           |       |       |       |       |       |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | mg/kg | 1.3 | ISO 17025 | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
|----------------------|-------|-----|-----------|-------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |       |      |        |        |        |     |      |     |
|------------------------|-------|------|--------|--------|--------|-----|------|-----|
| Naphthalene            | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 44  | 1.3  | 45  |
| Acenaphthylene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 25  | 4.1  | 26  |
| Acenaphthene           | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 17  | 0.57 | 18  |
| Fluorene               | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 33  | 3.1  | 37  |
| Phenanthrene           | mg/kg | 0.05 | MCERTS | < 0.05 | 0.27   | 71  | 28   | 71  |
| Anthracene             | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 27  | 9.5  | 28  |
| Fluoranthene           | mg/kg | 0.05 | MCERTS | < 0.05 | 0.39   | 55  | 38   | 57  |
| Pyrene                 | mg/kg | 0.05 | MCERTS | < 0.05 | 0.35   | 61  | 37   | 61  |
| Benzo(a)anthracene     | mg/kg | 0.05 | MCERTS | < 0.05 | 0.23   | 30  | 33   | 32  |
| Chrysene               | mg/kg | 0.05 | MCERTS | < 0.05 | 0.20   | 34  | 30   | 34  |
| Benzo(b)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 27  | 43   | 37  |
| Benzo(k)fluoranthene   | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 19  | 15   | 12  |
| Benzo(a)pyrene         | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 31  | 34   | 29  |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 16  | 20   | 17  |
| Dibenz(a,h)anthracene  | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 4.5 | 5.7  | 4.7 |

**Analytical Report Number: 21-89823**  
**Project / Site name: NGPH Arundel**  
**Your Order No: 81997**

| Lab Sample Number                       |       |                    |                    | 1955579       | 1955580       | 1955581       | 1955582       | 1955583       |
|-----------------------------------------|-------|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                    | Type 1 Cap 13 | Type 1 Cap 14 | Batch 28      | ES NE 2       | Batch 29      |
| Sample Number                           |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                    | None Supplied | None Supplied | None Supplied | 0.30          | None Supplied |
| Date Sampled                            |       |                    |                    | 28/07/2021    | 28/07/2021    | 22/07/2021    | 28/07/2021    | 22/07/2021    |
| Time Taken                              |       |                    |                    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Acceptation Status |               |               |               |               |               |
| Benzo(ghi)perylene                      | mg/kg | 0.05               | MCERTS             | < 0.05        | < 0.05        | 16            | 18            | 17            |

#### Total PAH

|                             |       |     |        |        |      |     |     |     |
|-----------------------------|-------|-----|--------|--------|------|-----|-----|-----|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | 1.44 | 511 | 321 | 524 |
|-----------------------------|-------|-----|--------|--------|------|-----|-----|-----|

#### Heavy Metals / Metalloids

|                                   |       |     |        |       |       |       |       |       |
|-----------------------------------|-------|-----|--------|-------|-------|-------|-------|-------|
| Arsenic (aqua regia extractable)  | mg/kg | 1   | MCERTS | 3.2   | 3.0   | 30    | 20    | 32    |
| Cadmium (aqua regia extractable)  | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | 1.3   | < 0.2 | < 0.2 |
| Chromium (aqua regia extractable) | mg/kg | 1   | MCERTS | 13    | 13    | 38    | 23    | 43    |
| Copper (aqua regia extractable)   | mg/kg | 1   | MCERTS | 11    | 8.9   | 62    | 36    | 72    |
| Iron (aqua regia extractable)     | mg/kg | 40  | MCERTS | 18000 | 16000 | 52000 | 35000 | 48000 |
| Lead (aqua regia extractable)     | mg/kg | 1   | MCERTS | 9.6   | 12    | 200   | 220   | 200   |
| Mercury (aqua regia extractable)  | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable)   | mg/kg | 1   | MCERTS | 10    | 8.8   | 33    | 20    | 33    |
| Selenium (aqua regia extractable) | mg/kg | 1   | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable)     | mg/kg | 1   | MCERTS | 51    | 43    | 850   | 170   | 680   |

#### Monoaromatics & Oxygenates

|                                    |       |   |        |       |       |       |       |       |
|------------------------------------|-------|---|--------|-------|-------|-------|-------|-------|
| Benzene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 31    | < 1.0 | 80    |
| Toluene                            | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 190   | < 1.0 | 220   |
| Ethylbenzene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 220   | < 1.0 | 270   |
| p & m-xylene                       | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 390   | < 1.0 | 470   |
| o-xylene                           | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 240   | < 1.0 | 270   |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                  |       |       |        |         |         |         |         |         |
|----------------------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| TPH-CWG - Aliphatic >EC5 - EC6   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | 27      | < 1.0   | 19      |
| TPH-CWG - Aliphatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | 250     | < 2.0   | 260     |
| TPH-CWG - Aliphatic >EC16 - EC21 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | 300     | < 8.0   | 340     |
| TPH-CWG - Aliphatic >EC21 - EC35 | mg/kg | 8     | MCERTS | < 8.0   | < 8.0   | 200     | < 8.0   | 220     |
| TPH-CWG - Aliphatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | < 10    | 780     | < 10    | 830     |

|                                 |       |       |        |         |         |       |         |       |
|---------------------------------|-------|-------|--------|---------|---------|-------|---------|-------|
| TPH-CWG - Aromatic >EC5 - EC7   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | 0.031 | < 0.001 | 0.079 |
| TPH-CWG - Aromatic >EC7 - EC8   | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | 0.19  | < 0.001 | 0.22  |
| TPH-CWG - Aromatic >EC8 - EC10  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | 1.2   | < 0.001 | 1.5   |
| TPH-CWG - Aromatic >EC10 - EC12 | mg/kg | 1     | MCERTS | < 1.0   | < 1.0   | 90    | < 1.0   | 87    |
| TPH-CWG - Aromatic >EC12 - EC16 | mg/kg | 2     | MCERTS | < 2.0   | < 2.0   | 920   | 23      | 940   |
| TPH-CWG - Aromatic >EC16 - EC21 | mg/kg | 10    | MCERTS | < 10    | < 10    | 1300  | 220     | 1400  |
| TPH-CWG - Aromatic >EC21 - EC35 | mg/kg | 10    | MCERTS | < 10    | < 10    | 1100  | 390     | 1100  |
| TPH-CWG - Aromatic (EC5 - EC35) | mg/kg | 10    | MCERTS | < 10    | 12      | 3400  | 630     | 3500  |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number : 21-89823**

**Project / Site name: NGPH Arundel**

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m)     | Sample Description *                     |
|-------------------|------------------|---------------|---------------|------------------------------------------|
| 1955574           | Type 1 Cap 8     | None Supplied | None Supplied | Light grey sand with gravel and rubble.  |
| 1955575           | Type 1 Cap 9     | None Supplied | None Supplied | Light brown sand with gravel and rubble. |
| 1955576           | Type 1 Cap 10    | None Supplied | None Supplied | Light brown sand with gravel and rubble. |
| 1955577           | Type 1 Cap 11    | None Supplied | None Supplied | Light brown sand with gravel and rubble. |
| 1955578           | Type 1 Cap 12    | None Supplied | None Supplied | Light grey sand with gravel and rubble.  |
| 1955579           | Type 1 Cap 13    | None Supplied | None Supplied | Light brown sand with gravel and rubble. |
| 1955580           | Type 1 Cap 14    | None Supplied | None Supplied | Light brown sand with gravel and rubble. |
| 1955581           | Batch 28         | None Supplied | None Supplied | Brown sandy clay with gravel and brick.  |
| 1955582           | ES NE 2          | None Supplied | 0.3           | Brown clay and sand with gravel.         |
| 1955583           | Batch 29         | None Supplied | None Supplied | Brown clay and sand with gravel.         |

**Analytical Report Number : 21-89823**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                               | Analytical Method Description                                                                                                                                          | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in soil by ICP-OES                          | Determination of metals in soil by aqua-regia digestion followed by ICP-OES.                                                                                           | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).              | In house method.                                                                                                | L038-PL       | D                  | MCERTS               |
| Asbestos identification in soil                    | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.                                                  | In house method based on HSG 248                                                                                | A001-PL       | D                  | ISO 17025            |
| Phenols, speciated, in soil, by HPLC               | Determination of speciated phenols by HPLC.                                                                                                                            | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | ISO 17025            |
| Complex Cyanide in soil                            | Determination of complex cyanide by calculation.                                                                                                                       | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Chloride, water soluble, in soil                   | Determination of Chloride colorimetrically by discrete analyser.                                                                                                       | In house method.                                                                                                | L082-PL       | D                  | MCERTS               |
| Electrical conductivity of soil                    | Determination of electrical conductivity in soil by electrometric measurement.                                                                                         | In-house method                                                                                                 | L031-PL       | D                  | ISO 17025            |
| Free cyanide in soil                               | Determination of free cyanide by distillation followed by colorimetry.                                                                                                 | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Cations in soil by ICP-OES                         | Determination of cations in soil by aqua-regia digestion followed by ICP-OES.                                                                                          | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L038-PL       | D                  | MCERTS               |
| Moisture Content                                   | Moisture content, determined gravimetrically. (30 oC)                                                                                                                  | In house method.                                                                                                | L019-UK/PL    | W                  | NONE                 |
| Speciated EPA-16 PAHs in soil                      | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.                 | In-house method based on USEPA 8270                                                                             | L064-PL       | D                  | MCERTS               |
| pH in soil (automated)                             | Determination of pH in soil by addition of water followed by automated electrometric measurement.                                                                      | In house method.                                                                                                | L099-PL       | D                  | MCERTS               |
| Sulphide in soil                                   | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method                                                                                                 | L010-PL       | D                  | MCERTS               |
| Stones content of soil                             | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.                                            | In-house method based on British Standard Methods and MCERTS requirements.                                      | L019-UK/PL    | D                  | NONE                 |
| Total cyanide in soil                              | Determination of total cyanide by distillation followed by colorimetry.                                                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | MCERTS               |
| Total organic carbon (Automated) in soil           | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.                                          | In house method.                                                                                                | L009-PL       | D                  | MCERTS               |
| BTEX and MTBE in soil (Monoaromatics)              | Determination of BTEX in soil by headspace GC-MS.                                                                                                                      | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | MCERTS               |

**Analytical Report Number : 21-89823**

**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                             | Analytical Method Description                                                                                                                             | Analytical Method Reference                                                                            | Method number | Wet / Dry Analysis | Accreditation Status |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Ammonium as NH <sub>4</sub> in soil              | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.                        | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L082-PL       | W                  | MCERTS               |
| TPHCWG (Soil)                                    | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.                                                                                 | In-house method with silica gel split/clean up.                                                        | L088/76-PL    | W                  | MCERTS               |
| Asbestos Quantification - Gravimetric            | Asbestos quantification by gravimetric method - in house method based on references.                                                                      | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).                                      | A006-PL       | D                  | ISO 17025            |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled.                                                                                   | In house asbestos methods A001 & A006.                                                                 | A006-PL       | D                  | NONE                 |
| Sulphate, water soluble, in soil                 | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method.                                                                                       | L038-PL       | D                  | MCERTS               |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

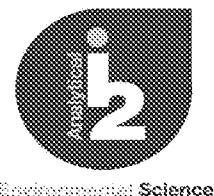
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**



## Sample Deviation Report



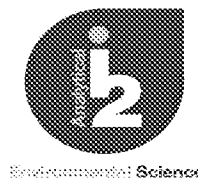
**Analytical Report Number : 21-89823**

**Project / Site name: NGPH Arundel**

| Sample ID     | Other ID      | Sample Type | Lab Sample Number | Sample Deviation | Test Name                             | Test Ref   | Test Deviation |
|---------------|---------------|-------------|-------------------|------------------|---------------------------------------|------------|----------------|
| Batch 28      | None Supplied | S           | 1955581           | c                | Free cyanide in soil                  | L080-PL    | c              |
| Batch 28      | None Supplied | S           | 1955581           | c                | Complex Cyanide in soil               | L080-PL    | c              |
| Batch 28      | None Supplied | S           | 1955581           | c                | Sulphide in soil                      | L010-PL    | c              |
| Batch 28      | None Supplied | S           | 1955581           | c                | Total cyanide in soil                 | L080-PL    | c              |
| Batch 29      | None Supplied | S           | 1955583           | c                | Free cyanide in soil                  | L080-PL    | c              |
| Batch 29      | None Supplied | S           | 1955583           | c                | Complex Cyanide in soil               | L080-PL    | c              |
| Batch 29      | None Supplied | S           | 1955583           | c                | Sulphide in soil                      | L010-PL    | c              |
| Batch 29      | None Supplied | S           | 1955583           | c                | Total cyanide in soil                 | L080-PL    | c              |
| Type 1 Cap 10 | None Supplied | S           | 1955576           | b                | BTEX and MTBE in soil (Monoaromatics) | L073B-PL   | b              |
| Type 1 Cap 10 | None Supplied | S           | 1955576           | b                | TPHCWG (Soil)                         | L088/76-PL | b              |

Key: **a** - No sampling date **b** - Incorrect container  
**c** - Holding time **d** - Headspace **e** - Temperature

Iss No 21-89823-1 NGPH Arundel C1820  
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Celtic EnGlobe  
Columbus House  
Greenmeadow Springs  
Tongwynlais  
Cardiff  
CF15 7NE

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

e:

## **Analytical Report Number : 21-90908**

|                      |                 |                                                |            |
|----------------------|-----------------|------------------------------------------------|------------|
| Project / Site name: | NGPH Arundel    | Samples received on:                           | 04/08/2021 |
| Your job number:     | C1820           | Samples instructed on/<br>Analysis started on: | 04/08/2021 |
| Your order number:   | 82008           | Analysis completed by:                         | 11/08/2021 |
| Report Issue Number: | 1               | Report issued on:                              | 11/08/2021 |
| Samples Analysed:    | 5 water samples |                                                |            |

Signed

Karolina Marek  
PL Head of Reporting Team  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

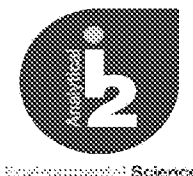
Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

|           |                           |
|-----------|---------------------------|
| soils     | - 4 weeks from reporting  |
| leachates | - 2 weeks from reporting  |
| waters    | - 2 weeks from reporting  |
| asbestos  | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-90908  
Project / Site name: NGPH Arundel

Your Order No: 82008

|                                          |               |                    |                         |               |               |
|------------------------------------------|---------------|--------------------|-------------------------|---------------|---------------|
| Lab Sample Number                        | 1962066       | 1962067            | 1962068                 | 1962069       | 1962070       |
| Sample Reference                         | BH201         | BH104              | BH105                   | FB2           | BH202         |
| Sample Number                            | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Depth (m)                                | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Date Sampled                             | 04/08/2021    | 04/08/2021         | 04/08/2021              | 04/08/2021    | 04/08/2021    |
| Time Taken                               | None Supplied | None Supplied      | None Supplied           | None Supplied | None Supplied |
| Analytical Parameter<br>(Water Analysis) | Units         | Limit of detection | Accreditation<br>Status |               |               |

#### General Inorganics

|                                  |          |       |           |        |       |       |       |       |
|----------------------------------|----------|-------|-----------|--------|-------|-------|-------|-------|
| pH                               | pH Units | N/A   | ISO 17025 | 7.5    | 7.2   | 7.1   | 6.2   | 7.0   |
| Electrical Conductivity at 20 °C | µS/cm    | 10    | ISO 17025 | 2300   | 670   | 1000  | < 10  | 1500  |
| Total Cyanide                    | µg/l     | 10    | ISO 17025 | 200    | 40    | 130   | < 10  | 120   |
| Complex Cyanide                  | µg/l     | 10    | ISO 17025 | 200    | 40    | 130   | < 10  | 120   |
| Free Cyanide                     | µg/l     | 10    | ISO 17025 | < 10   | < 10  | < 10  | < 10  | < 10  |
| Sulphate as SO4                  | mg/l     | 0.045 | ISO 17025 | 504    | 48.7  | 289   | 2.00  | 1010  |
| Sulphide                         | µg/l     | 5     | NONE      | 46     | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Chloride                         | mg/l     | 0.15  | ISO 17025 | 120    | 58    | 59    | 0.33  | 94    |
| Ammoniacal Nitrogen as NH4       | µg/l     | 15    | ISO 17025 | 320000 | 45    | 55000 | 29    | 76000 |
| Total Organic Carbon (TOC)       | mg/l     | 0.1   | ISO 17025 | 93.9   | 3.10  | 7.77  | 0.64  | 62.6  |
| Total Suspended Solids           | mg/l     | 2     | ISO 17025 | 4.0    | 14    | 48    | 4.0   | 46    |

#### Phenols by HPLC

|                              |      |     |      |       |       |       |       |       |
|------------------------------|------|-----|------|-------|-------|-------|-------|-------|
| Catechol                     | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Resorcinol                   | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Ethylphenol & Dimethylphenol | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Cresols                      | µg/l | 0.5 | NONE | 20000 | < 0.5 | < 0.5 | < 0.5 | 7100  |
| Naphthols                    | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Isopropylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Phenol                       | µg/l | 0.5 | NONE | 23000 | < 0.5 | < 0.5 | < 0.5 | 8600  |
| Trimethylphenol              | µg/l | 0.5 | NONE | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |

#### Total Phenols

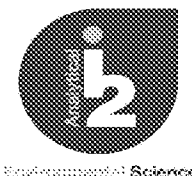
|                      |      |     |      |       |       |       |       |       |
|----------------------|------|-----|------|-------|-------|-------|-------|-------|
| Total Phenols (HPLC) | µg/l | 3.5 | NONE | 43000 | < 3.5 | < 3.5 | < 3.5 | 16000 |
|----------------------|------|-----|------|-------|-------|-------|-------|-------|

#### Speciated PAHs

|                        |      |      |           |        |        |        |        |        |
|------------------------|------|------|-----------|--------|--------|--------|--------|--------|
| Naphthalene            | µg/l | 0.01 | ISO 17025 | 986    | 0.99   | 0.74   | 0.62   | 311    |
| Acenaphthylene         | µg/l | 0.01 | ISO 17025 | 40.1   | < 0.01 | < 0.01 | < 0.01 | 35.7   |
| Acenaphthene           | µg/l | 0.01 | ISO 17025 | 11.8   | < 0.01 | 3.10   | < 0.01 | 4.54   |
| Fluorene               | µg/l | 0.01 | ISO 17025 | 23.6   | < 0.01 | < 0.01 | < 0.01 | 8.62   |
| Phenanthrene           | µg/l | 0.01 | ISO 17025 | 17.7   | < 0.01 | < 0.01 | < 0.01 | 8.44   |
| Anthracene             | µg/l | 0.01 | ISO 17025 | 3.23   | < 0.01 | < 0.01 | < 0.01 | 2.13   |
| Fluoranthene           | µg/l | 0.01 | ISO 17025 | 1.79   | < 0.01 | < 0.01 | < 0.01 | 1.25   |
| Pyrene                 | µg/l | 0.01 | ISO 17025 | 0.97   | < 0.01 | < 0.01 | < 0.01 | 0.78   |
| Benzo(a)anthracene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene               | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene   | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene         | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenzo(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene     | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |

#### Total PAH

|                   |      |      |           |      |      |      |      |     |
|-------------------|------|------|-----------|------|------|------|------|-----|
| Total EPA-16 PAHs | µg/l | 0.16 | ISO 17025 | 1080 | 0.99 | 3.84 | 0.62 | 373 |
|-------------------|------|------|-----------|------|------|------|------|-----|



Analytical Report Number: 21-90908  
Project / Site name: NGPH Arundel

Your Order No: 82008

|                                          |               |                    |                         |  |               |               |               |               |
|------------------------------------------|---------------|--------------------|-------------------------|--|---------------|---------------|---------------|---------------|
| Lab Sample Number                        | 1962066       |                    |                         |  | 1962067       | 1962068       | 1962069       | 1962070       |
| Sample Reference                         | BH201         |                    |                         |  | BH104         | BH105         | FB2           | BH202         |
| Sample Number                            | None Supplied |                    |                         |  | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                                | None Supplied |                    |                         |  | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled                             | 04/08/2021    |                    |                         |  | 04/08/2021    | 04/08/2021    | 04/08/2021    | 04/08/2021    |
| Time Taken                               | None Supplied |                    |                         |  | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Water Analysis) | Units         | Limit of detection | Accreditation<br>Status |  |               |               |               |               |

#### Heavy Metals / Metalloids

|                      |      |       |           |        |        |        |         |        |
|----------------------|------|-------|-----------|--------|--------|--------|---------|--------|
| Iron (dissolved)     | mg/l | 0.004 | ISO 17025 | 0.35   | 0.064  | 0.91   | < 0.004 | 0.71   |
| Arsenic (dissolved)  | µg/l | 0.15  | ISO 17025 | 37.8   | 0.51   | 3.47   | < 0.15  | 4.88   |
| Cadmium (dissolved)  | µg/l | 0.02  | ISO 17025 | < 0.02 | 0.02   | < 0.02 | < 0.02  | < 0.02 |
| Chromium (dissolved) | µg/l | 0.2   | ISO 17025 | 7.7    | 3.0    | 2.8    | 0.3     | 3.7    |
| Copper (dissolved)   | µg/l | 0.5   | ISO 17025 | 2.4    | 3.9    | 1.4    | 3.9     | 1.0    |
| Lead (dissolved)     | µg/l | 0.2   | ISO 17025 | < 0.2  | < 0.2  | < 0.2  | < 0.2   | < 0.2  |
| Mercury (dissolved)  | µg/l | 0.05  | ISO 17025 | 0.09   | < 0.05 | < 0.05 | < 0.05  | < 0.05 |
| Nickel (dissolved)   | µg/l | 0.5   | ISO 17025 | 11     | 2.8    | 7.3    | < 0.5   | 20     |
| Selenium (dissolved) | µg/l | 0.6   | ISO 17025 | 4.2    | 1.9    | 0.6    | < 0.6   | 8.6    |
| Zinc (dissolved)     | µg/l | 0.5   | ISO 17025 | 2.0    | 3.5    | 1.8    | 2.3     | 4.5    |

#### Monoaromatics & Oxygenates

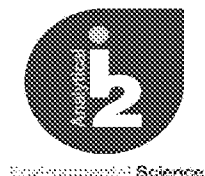
|                                    |      |   |           |       |       |       |       |       |
|------------------------------------|------|---|-----------|-------|-------|-------|-------|-------|
| Benzene                            | µg/l | 1 | ISO 17025 | 7000  | < 1.0 | < 1.0 | < 1.0 | 3280  |
| Toluene                            | µg/l | 1 | ISO 17025 | 2490  | < 1.0 | < 1.0 | < 1.0 | 1060  |
| Ethylbenzene                       | µg/l | 1 | ISO 17025 | 101   | < 1.0 | < 1.0 | < 1.0 | 37.5  |
| p & m-xylene                       | µg/l | 1 | ISO 17025 | 1110  | < 1.0 | < 1.0 | < 1.0 | 213   |
| o-xylene                           | µg/l | 1 | ISO 17025 | 374   | < 1.0 | < 1.0 | < 1.0 | 123   |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

#### Petroleum Hydrocarbons

|                                |      |    |           |       |       |       |       |       |
|--------------------------------|------|----|-----------|-------|-------|-------|-------|-------|
| TPH-CWG - Aliphatic >C5 - C6   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8   | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10  | µg/l | 1  | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 150   |
| TPH-CWG - Aliphatic >C10 - C12 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C12 - C16 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C16 - C21 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10  |
| TPH-CWG - Aliphatic (C5 - C35) | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | 150   |

|                               |      |    |           |       |       |       |       |      |
|-------------------------------|------|----|-----------|-------|-------|-------|-------|------|
| TPH-CWG - Aromatic >C5 - C7   | µg/l | 1  | ISO 17025 | 7000  | < 1.0 | < 1.0 | < 1.0 | 3300 |
| TPH-CWG - Aromatic >C7 - C8   | µg/l | 1  | ISO 17025 | 2500  | < 1.0 | < 1.0 | < 1.0 | 1100 |
| TPH-CWG - Aromatic >C8 - C10  | µg/l | 1  | ISO 17025 | 1800  | < 1.0 | < 1.0 | < 1.0 | 410  |
| TPH-CWG - Aromatic >C10 - C12 | µg/l | 10 | NONE      | 990   | < 10  | < 10  | < 10  | 310  |
| TPH-CWG - Aromatic >C12 - C16 | µg/l | 10 | NONE      | 440   | < 10  | < 10  | < 10  | 330  |
| TPH-CWG - Aromatic >C16 - C21 | µg/l | 10 | NONE      | 24    | < 10  | < 10  | < 10  | 14   |
| TPH-CWG - Aromatic >C21 - C35 | µg/l | 10 | NONE      | < 10  | < 10  | < 10  | < 10  | < 10 |
| TPH-CWG - Aromatic (C5 - C35) | µg/l | 10 | NONE      | 13000 | < 10  | < 10  | < 10  | 5400 |

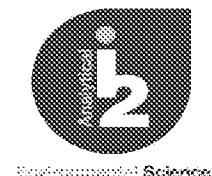
U/S = Unsuitable Sample I/S = Insufficient Sample



**Analytical Report Number : 21-90908**  
**Project / Site name: NGPH Arundel**

**Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)**

| Analytical Test Name                     | Analytical Method Description                                                                                                                                              | Analytical Method Reference                                                                                     | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Metals in water by ICP-OES (dissolved)   | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).                                                 | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Metals in water by ICP-MS (dissolved)    | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.                                  | In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS. | L012-PL       | W                  | ISO 17025            |
| Phenols, speciated, in water, by HPLC    | Determination of speciated phenols by HPLC.                                                                                                                                | In house method based on Blue Book Method.                                                                      | L030-PL       | W                  | NONE                 |
| Complex cyanide in water                 | Determination of complex cyanide by calculation. Accredited matrices SW, PW, GW.                                                                                           | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Electrical conductivity at 20oC of water | Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW                                                             | In-house method                                                                                                 | L031-PL       | W                  | ISO 17025            |
| Free cyanide in water                    | Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Speciated EPA-16 PAHs in water           | Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW | In-house method based on USEPA 8270                                                                             | L102B-PL      | W                  | ISO 17025            |
| Sulphide in water                        | Determination of sulphide in water by ion selective electrode.                                                                                                             | In-house method                                                                                                 | L029-PL       | W                  | NONE                 |
| Sulphate in water                        | Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.                                                               | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.                            | L039-PL       | W                  | ISO 17025            |
| Suspended solids in water                | Determined gravimetrically with GFC filtration papers.                                                                                                                     | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L004-PL       | W                  | ISO 17025            |
| TPHCWG (Waters)                          | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.                                                                 | In-house method                                                                                                 | L070-PL       | W                  | NONE                 |
| Total cyanide in water                   | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW                                                                      | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL       | W                  | ISO 17025            |
| Total organic carbon in water            | Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.                                                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L037-PL       | W                  | ISO 17025            |
| BTEX and MTBE in water (Monoaromatics)   | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW                                                                                  | In-house method based on USEPA8260                                                                              | L073B-PL      | W                  | ISO 17025            |
| Ammonium as NH4 in water                 | Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.                                | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton          | L082-PL       | W                  | ISO 17025            |
| pH at 20oC in water (automated)          | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW                                                                                   | In house method.                                                                                                | L099-PL       | W                  | ISO 17025            |
| Chloride in water                        | Determination of Chloride colorimetrically by discrete analyser.                                                                                                           | In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.                                | L082-PL       | W                  | ISO 17025            |



Analytical Report Number : 21-90908  
Project / Site name: NGPH Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

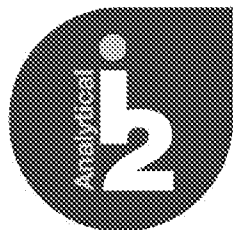
| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|----------------------|-------------------------------|-----------------------------|---------------|--------------------|----------------------|
|----------------------|-------------------------------|-----------------------------|---------------|--------------------|----------------------|

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

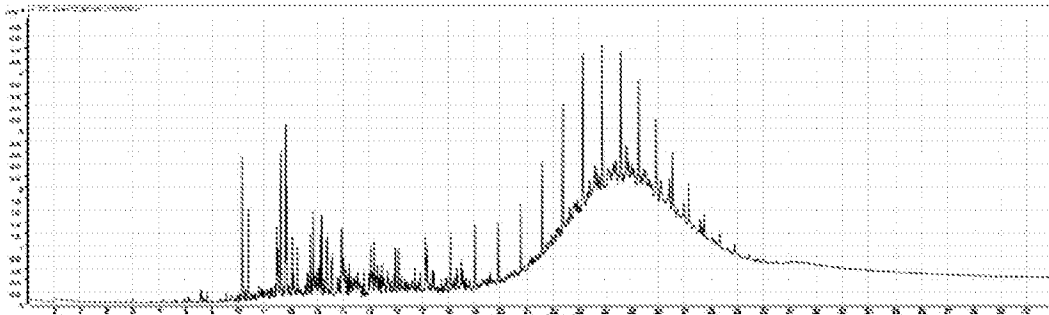
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



Environmental Science



## Analysis For Suspected Coal Tar

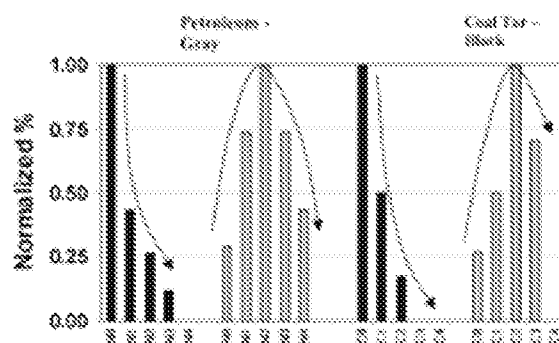
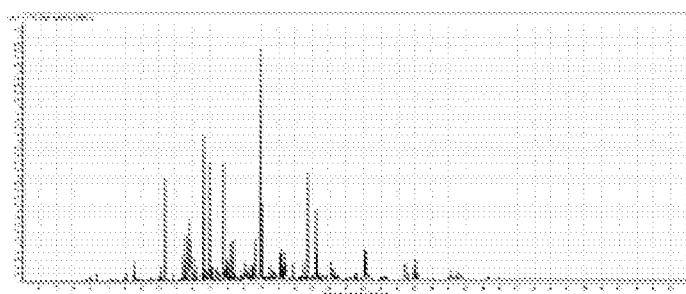
Coal Tar was used in pavement layers up until the mid 1980's and is categorised as Hazardous under WM3. As part of any assessment it is important to identify if it is present as this will affect the classification.

Tar is classed as a category 1 carcinogen, and if present at concentrations greater than 0.1% (from a sum of all fractions) any waste would be considered hazardous by HP 7. If however, the concentration of Benzo(a)pyrene is  $< 0.005\%$  of the Coal Tar (rather than the waste as a whole) it may be exempt.

If Coal Tar is identified and B(a)P exceeds 50mg/kg in the black top layer alone then the amount of Coal Tar present should be considered hazardous.

Coal Tar is a chemically complex and variable, and as such the analysis requires looking at sets of specific markers and assessing the sample from a combination of data manipulations.

- Presence or absence of phenolic compounds (Phenol, Cresols, Xylenols, Trimethylphenols, etc.)
- Ratio of parent to alkyl PAH's
- Presence of specific sulphur, oxygen & nitrogen heterocyclic compounds
- PAH ratios of a number of specific target compounds
- Petrogenic and pyrogenic source differentiation
- Benzo(a)pyrene at the critical 50mg/kg level



The identification of 'Coal Tar' is determined by assessing the overall composition of the material from the results obtained from the above targets to provide a presence/absence classification, along with a breakdown of the individual USEPA16 PAHs and a total Residue/extractable material quantification.

This method will distinguish between heavy fuel oils, bitumen based products and Coal Tar in particular to a limit of around 10mg/kg

Please get in touch:



01203 254600



Environmental Science

## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522471/403/M1

**Report Date:** 30 July 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M1

**Socotec Test Reference:** 26374403

**Test Number:** 1

**Date Tested:** 28 Jul 2021

**Tested By:** SOCOTEC Uxbridge

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Location:** T1

**Material Supplier:** Site

**Material Source:** Site

**Kentledge Type:** 360 exc

**Plate Diameter (mm):** 300

**Depth of Test (mm):** ground

**Material Description:** Crushed Stone

**Layer Thickness (mm):** n/a

**Weather Conditions:** mild

### Results :

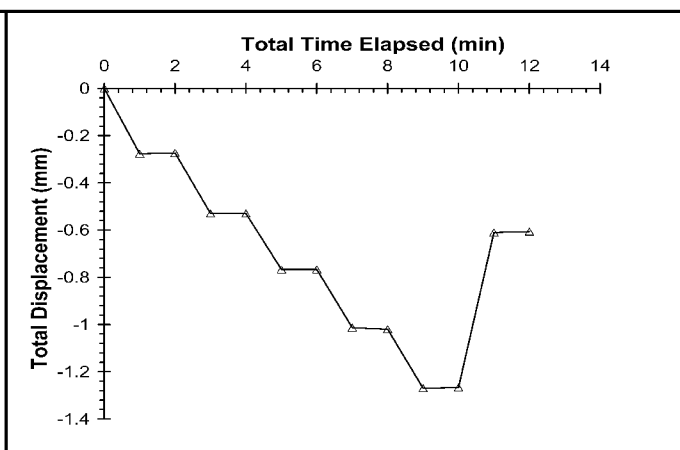
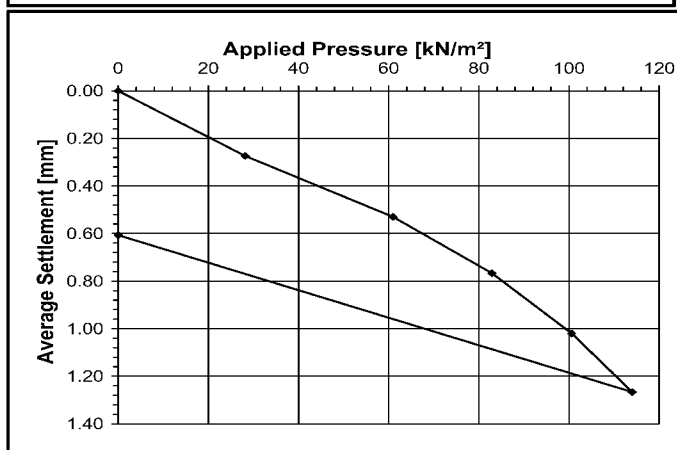
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 1.99              | 28                                    | 0.27                          |
| 4.31              | 61                                    | 0.53                          |
| 5.86              | 83                                    | 0.77                          |
| 7.11              | 101                                   | 1.02                          |
| 8.06              | 114                                   | 1.27                          |
| 0.00              | 0                                     | 0.61                          |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 113

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 40

Moisture Content (%): N/A

Equivalent CBR by Plate Loading (%): 5.8



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited



## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522471/404/M2

**Report Date:** 30 July 2021

**Client:** CELTIC TECHNOLOGIES LTD

**Our Contract Ref:** 51064057/M1

**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Socotec Test Reference:** 26374404

**Test Number:** 2

**Date Tested:** 28 Jul 2021

**Tested By:** SOCOTEC Uxbridge

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** Site

**Location:** T2

**Material Source:** Site

**Depth of Test (mm):** ground

**Kentledge Type:** 360 exc

**Material Description:** Crushed Stone

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** n/a

**Weather Conditions:** mild

### Results :

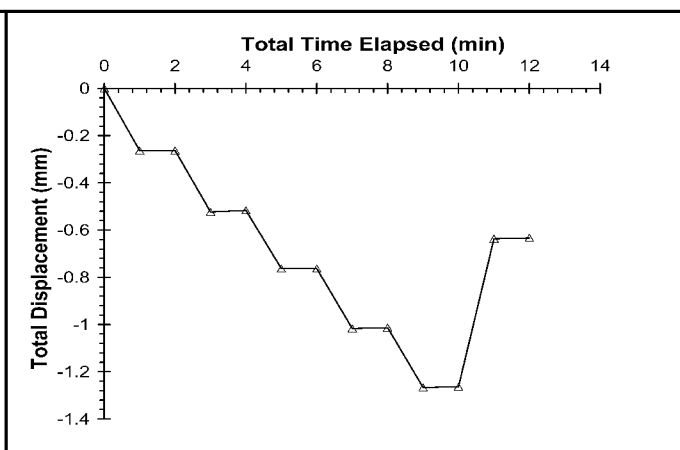
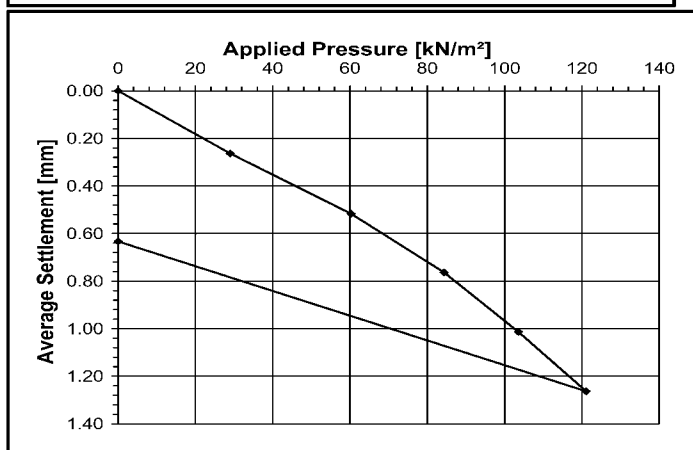
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.05              | 29                                    | 0.26                          |
| 4.26              | 60                                    | 0.52                          |
| 5.96              | 84                                    | 0.76                          |
| 7.32              | 104                                   | 1.01                          |
| 8.56              | 121                                   | 1.26                          |
| 0.00              | 0                                     | 0.63                          |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 120

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 42

Moisture Content (%): N/A

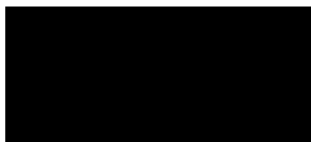
Equivalent CBR by Plate Loading (%): 6.4



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522471/405/M3

**Report Date:** 30 July 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M1

**Socotec Test Reference:** 26374405

**Test Number:** 3

**Date Tested:** 28 Jul 2021

**Tested By:** SOCOTEC Uxbridge

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** Site

**Location:** T3

**Material Source:** Site

**Depth of Test (mm):** ground

**Kentledge Type:** 360 exc

**Material Description:** Crushed Stone

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** n/a

**Weather Conditions:** mild

### Results :

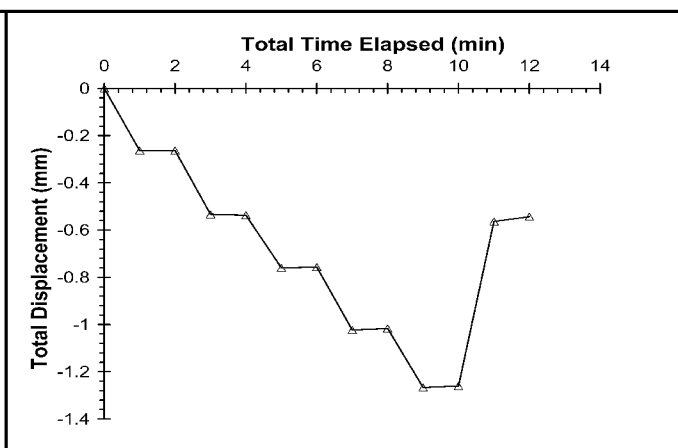
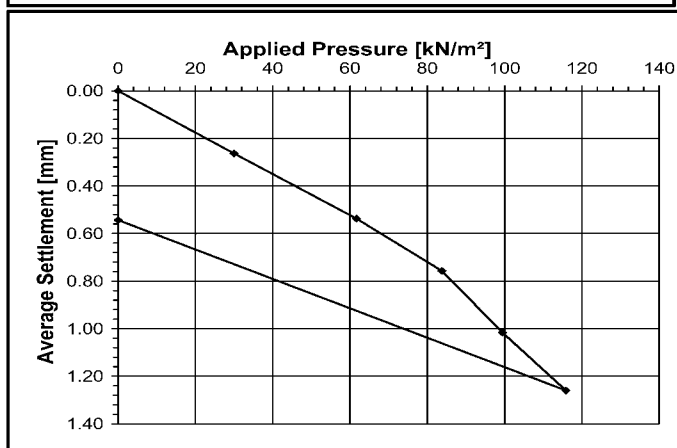
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.12              | 30                                    | 0.26                          |
| 4.36              | 62                                    | 0.54                          |
| 5.92              | 84                                    | 0.76                          |
| 7.03              | 99                                    | 1.02                          |
| 8.19              | 116                                   | 1.26                          |
| 0.00              | 0                                     | 0.54                          |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 115

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 41

Moisture Content (%): N/A

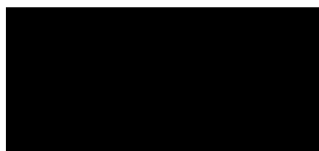
Equivalent CBR by Plate Loading (%): 5.9



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522471/406/M4

**Report Date:** 30 July 2021

**Client:** CELTIC TECHNOLOGIES LTD

**Our Contract Ref:** 51064057/M1

**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Socotec Test Reference:** 26374406

**Test Number:** 4

**Date Tested:** 28 Jul 2021

**Tested By:** SOCOTEC Uxbridge

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** Site

**Location:** T4

**Material Source:** Site

**Depth of Test (mm):** ground

**Kentledge Type:** 360 exc

**Material Description:** Crushed Stone

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** n/a

**Weather Conditions:** mild

### Results :

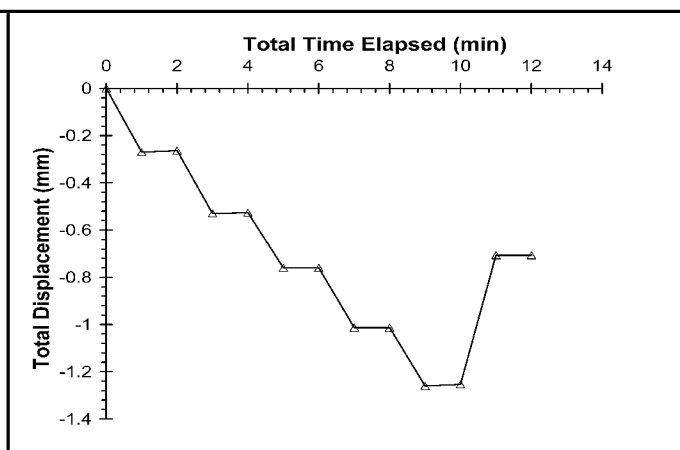
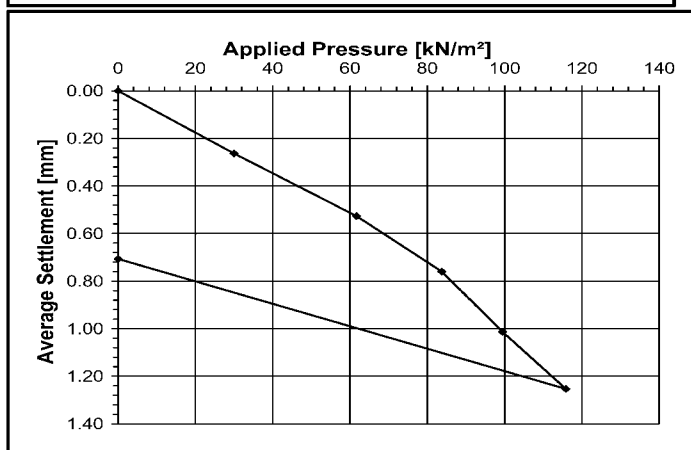
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.12              | 30                                    | 0.26                          |
| 4.36              | 62                                    | 0.53                          |
| 5.92              | 84                                    | 0.76                          |
| 7.03              | 99                                    | 1.01                          |
| 8.19              | 116                                   | 1.25                          |
| 0.00              | 0                                     | 0.71                          |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 116

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 41

Moisture Content (%): N/A

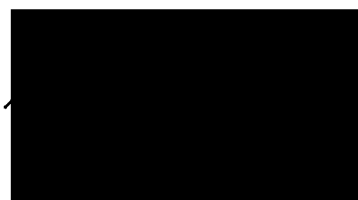
Equivalent CBR by Plate Loading (%): 6.0



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

**Equivalent CBR Value derived from Plate Bearing Test**

**Report No:** UXB0522882/037/M1

**Report Date:** 4 August 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M2

**Socotec Test Reference:** 26379037

**Test Number:** 1

**Date Tested:** 2 Aug 2021

**Tested By:** SOCOTEC Sittingbourne

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** SITE

**Location:** CBR02

**Material Source:** SITE

**Depth of Test (mm):** Surface

**Kentledge Type:** 20t

**Material Description:** Type 1

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** N/G

**Weather Conditions:** Overcast

**Results :**

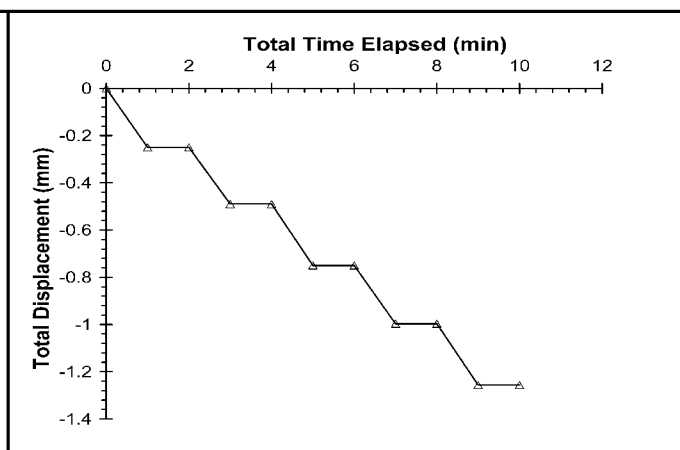
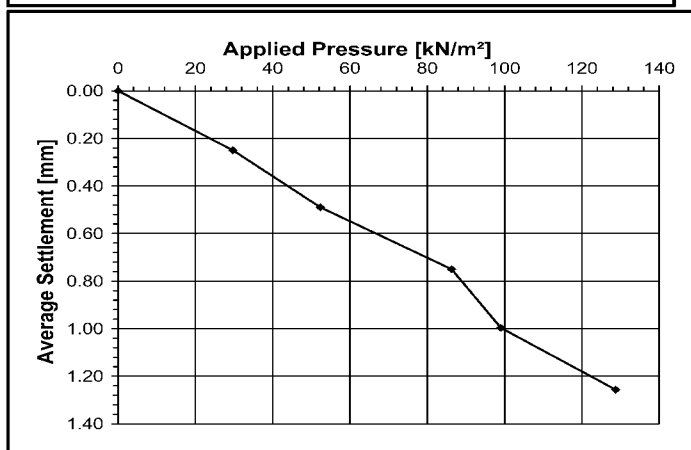
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.10              | 30                                    | 0.25                          |
| 3.70              | 52                                    | 0.49                          |
| 6.10              | 86                                    | 0.75                          |
| 7.00              | 99                                    | 1.00                          |
| 9.10              | 129                                   | 1.26                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 128

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 45

Moisture Content (%): N/A

Equivalent CBR by Plate Loading (%): 7.1



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

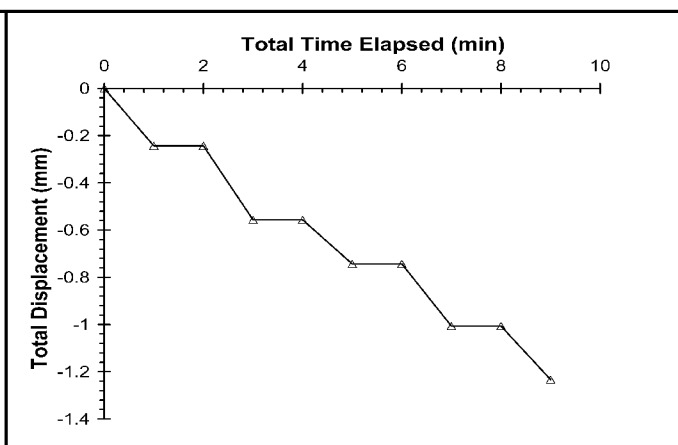
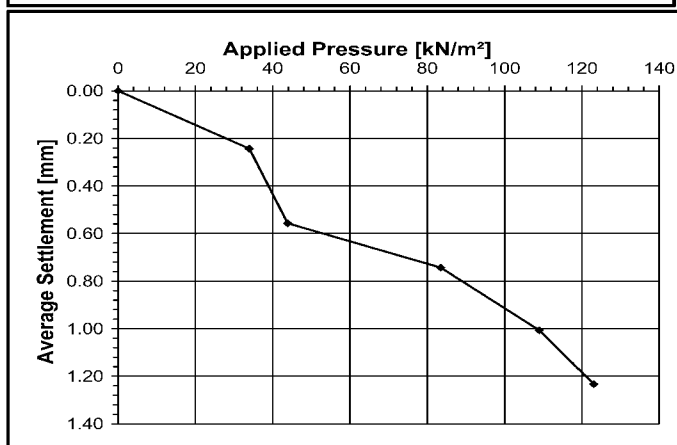
## Determination of Equivalent CBR Value derived from Plate Bearing Test

|                              |                                                        |                                |                       |
|------------------------------|--------------------------------------------------------|--------------------------------|-----------------------|
| <b>Report No:</b>            | <b>UXB0522882/038/M2</b>                               | <b>Report Date:</b>            | <b>4 August 2021</b>  |
| <b>Client:</b>               | CELTIC TECHNOLOGIES LTD                                | <b>Our Contract Ref:</b>       | 51064057/M2           |
| <b>Address:</b>              | GREENMEADOW SPRINGS<br>CARDIFF<br>CF15 7NE<br>GB       | <b>Socotec Test Reference:</b> | <b>26379038</b>       |
| <b>Client Contact:</b>       | Not Advised                                            | <b>Test Number:</b>            | 2                     |
| <b>Site:</b>                 | <b>Former gas holder, Ford Road, Arundel, BN18 9DX</b> | <b>Date Tested:</b>            | 2 Aug 2021            |
| <b>Location:</b>             | CBR03                                                  | <b>Tested By:</b>              | SOCOTEC Sittingbourne |
| <b>Depth of Test (mm):</b>   | Surface                                                | <b>Material Supplier:</b>      | SITE                  |
| <b>Material Description:</b> | Type 1                                                 | <b>Material Source:</b>        | SITE                  |
| <b>Layer Thickness (mm):</b> | N/G                                                    | <b>Kentledge Type:</b>         | 20t                   |
|                              |                                                        | <b>Plate Diameter (mm):</b>    | 300                   |
|                              |                                                        | <b>Weather Conditions:</b>     | Overcast              |

### Results :

| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.40              | 34                                    | 0.24                          |
| 3.10              | 44                                    | 0.56                          |
| 5.90              | 83                                    | 0.74                          |
| 7.70              | 109                                   | 1.01                          |
| 8.70              | 123                                   | 1.23                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 123  
Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 43  
Moisture Content (%): N/A  
Equivalent CBR by Plate Loading (%): 6.7



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)  
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522882/039/M3

**Report Date:** 4 August 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M2

**Socotec Test Reference:** 26379039

**Test Number:** 3

**Date Tested:** 2 Aug 2021

**Tested By:** SOCOTEC Sittingbourne

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** SITE

**Location:** CBR04

**Material Source:** SITE

**Depth of Test (mm):** Surface

**Kentledge Type:** 20t

**Material Description:** Type 1

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** N/G

**Weather Conditions:** Overcast

### Results :

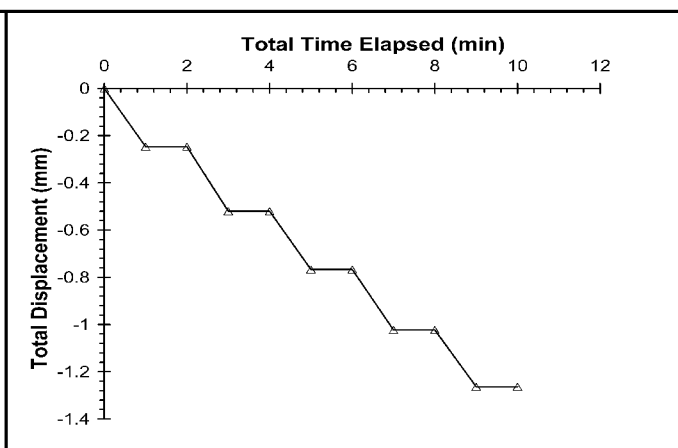
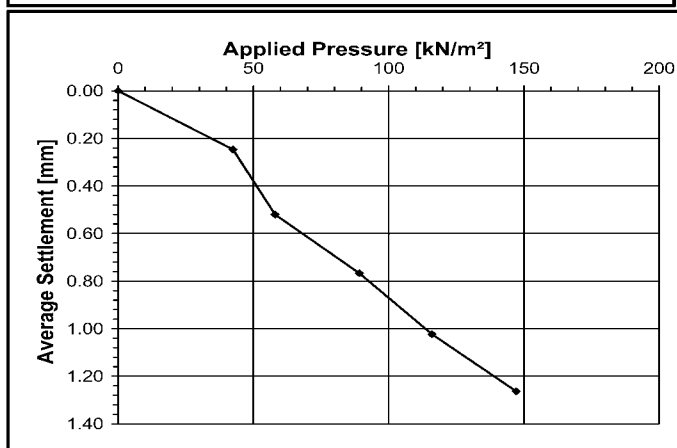
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 3.00              | 42                                    | 0.25                          |
| 4.10              | 58                                    | 0.52                          |
| 6.30              | 89                                    | 0.77                          |
| 8.20              | 116                                   | 1.02                          |
| 10.40             | 147                                   | 1.26                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 145

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 51

Moisture Content (%): N/A

Equivalent CBR by Plate Loading (%): 8.9



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522882/040/M4

**Report Date:** 4 August 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M2

**Socotec Test Reference:** 26379040

**Test Number:** 4

**Date Tested:** 2 Aug 2021

**Tested By:** SOCOTEC Sittingbourne

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** SITE

**Location:** CBR05

**Material Source:** SITE

**Depth of Test (mm):** Surface

**Kentledge Type:** 20t

**Material Description:** Type 1

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** N/G

**Weather Conditions:** Overcast

### Results :

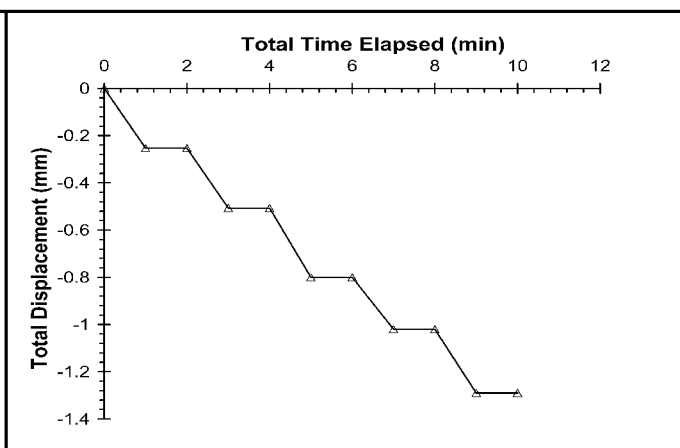
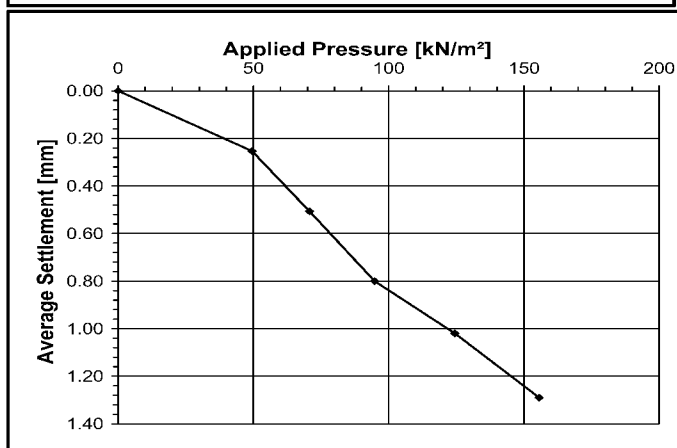
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 3.50              | 50                                    | 0.25                          |
| 5.00              | 71                                    | 0.51                          |
| 6.70              | 95                                    | 0.80                          |
| 8.80              | 124                                   | 1.02                          |
| 11.00             | 156                                   | 1.29                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 151

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 53

Moisture Content (%): N/A

Equivalent CBR by Plate Loading (%): 9.5



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

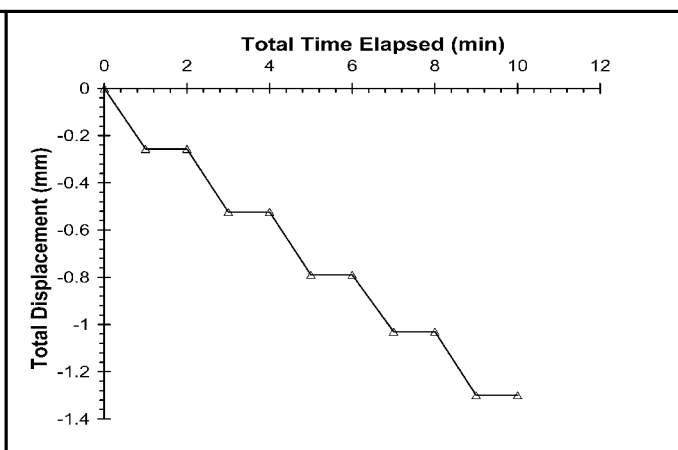
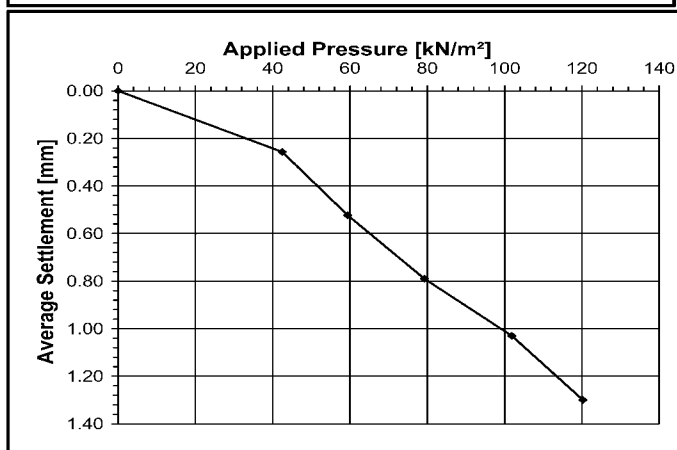
## Determination of Equivalent CBR Value derived from Plate Bearing Test

|                              |                                                        |                                |                       |
|------------------------------|--------------------------------------------------------|--------------------------------|-----------------------|
| <b>Report No:</b>            | <b>UXB0522882/041/M5</b>                               | <b>Report Date:</b>            | <b>4 August 2021</b>  |
| <b>Client:</b>               | CELTIC TECHNOLOGIES LTD                                | <b>Our Contract Ref:</b>       | 51064057/M2           |
| <b>Address:</b>              | GREENMEADOW SPRINGS<br>CARDIFF<br>CF15 7NE<br>GB       | <b>Socotec Test Reference:</b> | <b>26379041</b>       |
| <b>Client Contact:</b>       | Not Advised                                            | <b>Test Number:</b>            | 5                     |
| <b>Site:</b>                 | <b>Former gas holder, Ford Road, Arundel, BN18 9DX</b> | <b>Date Tested:</b>            | 2 Aug 2021            |
| <b>Location:</b>             | CBR06                                                  | <b>Tested By:</b>              | SOCOTEC Sittingbourne |
| <b>Depth of Test (mm):</b>   | Surface                                                | <b>Material Supplier:</b>      | SITE                  |
| <b>Material Description:</b> | Type 1                                                 | <b>Material Source:</b>        | SITE                  |
| <b>Layer Thickness (mm):</b> | N/G                                                    | <b>Kentledge Type:</b>         | 20t                   |
|                              |                                                        | <b>Plate Diameter (mm):</b>    | 300                   |
|                              |                                                        | <b>Weather Conditions:</b>     | Overcast              |

### Results :

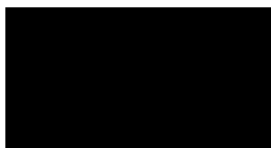
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 3.00              | 42                                    | 0.26                          |
| 4.20              | 59                                    | 0.52                          |
| 5.60              | 79                                    | 0.79                          |
| 7.20              | 102                                   | 1.03                          |
| 8.50              | 120                                   | 1.30                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 117  
Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 41  
Moisture Content (%): N/A  
Equivalent CBR by Plate Loading (%): 6.1



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)  
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**



Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited



## Determination of Equivalent CBR Value derived from Plate Bearing Test

**Report No:** UXB0522882/042/M6

**Report Date:** 4 August 2021

**Client:** CELTIC TECHNOLOGIES LTD  
**Address:** GREENMEADOW SPRINGS  
CARDIFF  
CF15 7NE  
GB

**Our Contract Ref:** 51064057/M2

**Socotec Test Reference:** 26379042

**Test Number:** 6

**Date Tested:** 2 Aug 2021

**Tested By:** SOCOTEC Sittingbourne

**Client Contact:** Not Advised

**Site:** Former gas holder, Ford Road, Arundel, BN18 9DX

**Material Supplier:** SITE

**Location:** CBR07

**Material Source:** SITE

**Depth of Test (mm):** Surface

**Kentledge Type:** 20t

**Material Description:** Type 1

**Plate Diameter (mm):** 300

**Layer Thickness (mm):** N/G

**Weather Conditions:** Overcast

### Results :

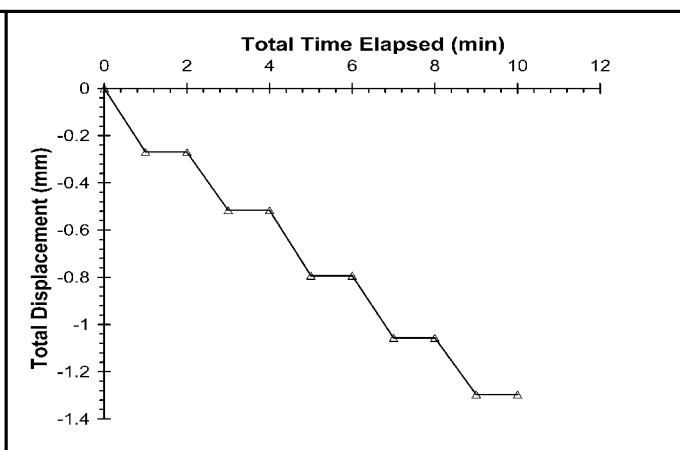
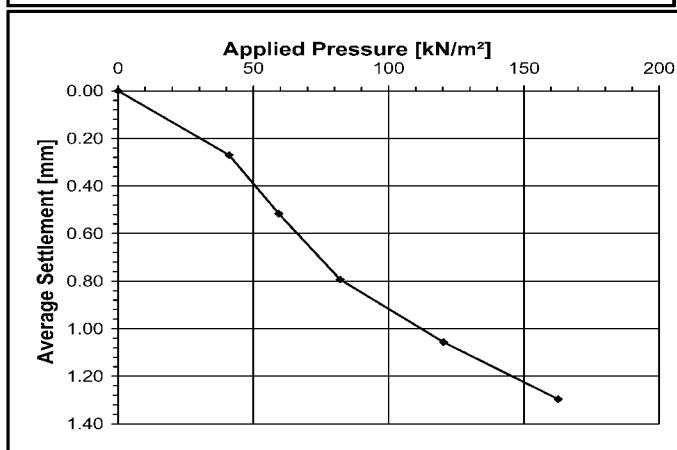
| Applied Load (kN) | Applied Pressure (kN/m <sup>2</sup> ) | Applied Plate Settlement (mm) |
|-------------------|---------------------------------------|-------------------------------|
| 2.90              | 41                                    | 0.27                          |
| 4.20              | 59                                    | 0.52                          |
| 5.80              | 82                                    | 0.79                          |
| 8.50              | 120                                   | 1.06                          |
| 11.50             | 163                                   | 1.30                          |
|                   |                                       |                               |
|                   |                                       |                               |
| End of Test       |                                       |                               |

Pressure at 1.25mm Settlement (kN/m<sup>2</sup>): 154

Modulus of Subgrade Reaction (MN/m<sup>2</sup>/m): 55

Moisture Content (%): N/A

Equivalent CBR by Plate Loading (%): 9.9



Certified that testing was carried out in accordance with DIHM 301 v6 02/18, Design Manual for Road and Bridges Volume 7, Pavement design and Maintenance, IAN 73/06 Rev 1 (2009)

Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

**Signed:**

[Redacted Signature]

Andrew Sears - HSE Support and Facilities Manager  
for and on behalf of SOCOTEC UK Limited

## **APPENDIX H   ENVIRONMENTAL MONITORING DATA**

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|
| <b>Site:</b> NG ARUNDEL                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | <b>Vapour Trigger Values</b><br>OR site receptors<br>Stop Work at <u>1.0</u> ppm (15 min TWA) at site boundary<br>OR site receptors<br>RPE Criteria <u>0.5</u> ppm (15 min TWA) at treatment area<br>Stop Work at <u>10</u> ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action limit value</b><br>General Dust Exposure Action Limit Values: <u>250</u> µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit value and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |         |                      |                   |                                                  |  |
| <b>Date:</b> 07/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind</b> Direct SSW 9mph<br><b>mB:</b>                                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                          |         |                      |                   |                                                  |  |
| <b>PID Calibration</b><br><b>Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                  |             | <b>VOC</b>                                                                                                                                                                                                                                                                   |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                            | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                  |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                              | 15 mins |                      |                   |                                                  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:00:00    | 0.0                                                                                                                                                                                                                                                                          | 0.0                            | 57.8                     | 77.7                          | 195.6              | 173.3   | 139.1               | 123.1   | 9.58                 | 9.72    | 2.31                                                                                                                                                                                                                                                                                                                                                                                                | 3.49    | 0                    | 0                 |                                                  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:20:00    | 0.0                                                                                                                                                                                                                                                                          | 0.0                            | 53.2                     | 84.0                          | 35.6               | 38.7    | 13.6                | 13.1    | 4.8                  | 4.9     | 1.86                                                                                                                                                                                                                                                                                                                                                                                                | 1.95    | 0                    | 0                 |                                                  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:40:00    | 0.0                                                                                                                                                                                                                                                                          | 0.0                            | 54.9                     | 80.9                          | 35.1               | 34.8    | 19                  | 19.5    | 6.9                  | 8.51    | 3.39                                                                                                                                                                                                                                                                                                                                                                                                | 3.36    | 0                    | 0                 |                                                  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:15:00    | 0.0                                                                                                                                                                                                                                                                          | 0.0                            | 58.8                     | 80.4                          | 80.2               | 80.2    | 29.5                | 37.4    | 11.25                | 12.1    | 4.09                                                                                                                                                                                                                                                                                                                                                                                                | 4.15    | 0                    | 0                 |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise, VOC's). Consideration should be given to use of Data logging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                     |         |                      |                   |                                                  |  |

**Odour Monitoring Criteria    Intensity**

0 No detectable odour

1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)

2 Moderate odour (distinct odour detected while standing still)

3 Moderately strong odour (detectable while walking &amp; breathing, normally possibly offensive)

4 Strong odour (bearable, but offensive odour)

5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

0 No detectable odour

1 Local &amp; transient (only during brief periods when wind drops or blows)

2 Transient as above, but detected away from installation boundary

3 Persistent, but fairly localised

4 Persistent and pervasive up to 50m from plant or installation boundary

5 Persistent and widespread (odour detected &gt;50 m from installation boundary)

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|
| <b>Site:</b> NG ARUNDEL                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | <b>Vapour Trigger Values</b><br>OR site receptors<br>Stop Work at <u>1.0</u> ppm (15 min TWA) at site boundary<br>OR site receptors<br>RPE Criteria <u>0.5</u> ppm (15 min TWA) at treatment area<br>Stop Work at <u>10</u> ppm (15 min TWA) at treatment area when RPE worn<br><b>Odour limit and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action limit value</b><br>General Dust Exposure Action Limit Values: <u>250</u> µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit value and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>OR site receptors (15 min LAeq)<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                                  |  |
| <b>Date:</b> 07/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind</b> Direct SSW 9mph<br><b>mB:</b>                                                                                                                                                                                                                                                                                                                                      |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                    |         |                      |                   |                                                  |  |
| <b>PID Calibration Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                            |             | <b>VOC</b>                                                                                                                                                                                                                                                                                                                                                                                              |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                                                                                                                                       | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 15 mins | see below            |                   |                                                  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:15:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                            | 55.3                     | 69.4                          | 56.6               | 55.3    | 43.4                | 44.4    | 8.98                 | 8.43    | 3.85                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3.58    | 0                    | 0                 |                                                  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:35:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                            | 53.3                     | 78.3                          | 43.4               | 44.1    | 21.3                | 20.6    | 6.4                  | 6.9     | 2.48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.84    | 0                    | 0                 |                                                  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:55:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                            | 51.7                     | 79.3                          | 48.4               | 50.3    | 18.6                | 19.5    | 11.2                 | 13.4    | 3.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.10    | 0                    | 0                 |                                                  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:15:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                            | 53.9                     | 81.2                          | 75.2               | 77.4    | 31.2                | 35.3    | 13.25                | 13.9    | 3.91                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.28    | 0                    | 0                 |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise, VOC's). Consideration should be given to use of Data logging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |         |                      |                   |                                                  |  |

**Odour Monitoring Criteria Intensity**

0 No detectable odour

1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)

2 Moderate odour (distinct odour detected while standing still)

3 Moderately strong odour (detectable while walking &amp; breathing, normally possibly offensive)

4 Strong odour (bearable, but offensive odour)

**Extent**

0 No detectable odour

1 Local &amp; transient (only during brief periods when wind drops or blows)

2 Transient as above, but detected away from installation boundary

3 Persistent, but fairly localised

4 Persistent and pervasive up to 50m from plant or installation boundary

[illegible]

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)  
4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
3 Persistent, but fairly localised  
4 Persistent and pervasive up to 50m from plant or installation boundary  
5 Persistent and widespread (odour detected >50 m from installation boundary)

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |          | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <b>Vapour Trigger Values</b><br/> <small>ON site receptors</small><br/>           Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br/> <small>On site receptors</small><br/>           RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br/>           Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br/> <b>Odour Risk and action values:</b><br/>           Action level: Intensity 2 Extent 2<br/>           Stop work Criteria: Intensity 3 Extent 3         </div> <div style="width: 48%;"> <b>Dust action/limit value</b><br/>           General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br/> <b>Noise exposure limit values and action values (15 min LAeq):</b><br/>           Action Level: 85dB where ear protection must be worn<br/>           Stop work Criteria 90 dB<br/> <small>off site receptors (15 min LAeq)</small><br/>           Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become &gt;73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB         </div> </div> |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|------------------------|--------------------------|---------|---------------------------|---------|----------------------------|---------|--------------------------|---------|---------------|------------|-------------------------------------------|
| <b>Date:</b> 08/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |          | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> S 11 mph<br><b>mB:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| <b>PID Calibration</b><br><b>Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>Monitoring Equipment Pre-Checks Completed</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>           DustMate [Celt109]<br/>           Noise Meter [Celt220]<br/>           PID [Celt254]         </div> <div>           Y—N—N/A<br/>           Y—N—N/A<br/>           Y—N—N/A         </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Time     | VOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         | NOISE             |                        | DUST                     |         |                           |         |                            |         |                          |         | ODOUR         |            | Comments (Action required?/ Action taken) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          | Average over 15 mins (ppm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Peak over 15 mins (ppm) | LAeq 15 mins (dB) | Peak over 15 mins (dB) | TSP (µg/m <sup>3</sup> ) |         | PM10 (µg/m <sup>3</sup> ) |         | PM2.5 (µg/m <sup>3</sup> ) |         | PM1 (µg/m <sup>3</sup> ) |         | Intensity 0-5 | Extent 0-5 |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        | 5 mins                   | 15 mins | 5 mins                    | 15 mins | 5 mins                     | 15 mins | 5 mins                   | 15 mins | see below     |            |                                           |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:00:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                     | 52.5              | 76.5                   | 69.5                     | 72.1    | 65.4                      | 64.2    | 19.54                      | 19.53   | 5.43                     | 5.45    | 0             | 0          |                                           |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:20:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                     | 54.9              | 78.7                   | 73.3                     | 74.8    | 54.7                      | 58.7    | 19.76                      | 21.43   | 6.73                     | 6.25    | 0             | 0          |                                           |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:40:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                     | 59.3              | 81.6                   | 67.5                     | 65.7    | 57.6                      | 60.1    | 20.45                      | 20.87   | 6.24                     | 6.73    | 0             | 0          |                                           |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 17:00:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0                     | 58.3              | 80.5                   | 59.8                     | 64.3    | 55.4                      | 57.5    | 17.53                      | 22.14   | 6.38                     | 6.34    | 0             | 0          |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |          | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <b>Vapour Trigger Values</b><br/> <small>ON site receptors</small><br/>           Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br/> <small>On site receptors</small><br/>           RPE Criteria _0.5____ ppm (15 min TWA) at treatment area<br/>           Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br/> <b>Odour Risk and action values:</b><br/>           Action level: Intensity 2 Extent 2<br/>           Stop work Criteria: Intensity 3 Extent 3         </div> <div style="width: 48%;"> <b>Dust action/limit value</b><br/>           General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br/> <b>Noise exposure limit values and action values (15 min LAeq):</b><br/>           Action Level: 85dB where ear protection must be worn<br/>           Stop work Criteria 90 dB<br/> <small>off site receptors (15 min LAeq)</small><br/>           Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become &gt;73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB         </div> </div> |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|------------------------|--------------------------|---------|---------------------------|---------|----------------------------|---------|--------------------------|---------|---------------|------------|-------------------------------------------|
| <b>Date:</b> 09/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |          | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> W 4mph<br><b>mB:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| <b>PID Calibration</b><br><b>Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                  |          | <b>Monitoring Equipment Pre-Checks Completed</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div>           DustMate [Celt109]<br/>           Noise Meter [Celt220]<br/>           PID [Celt254]         </div> <div>           Y—N—N/A<br/>           Y—N—N/A<br/>           Y—N—N/A         </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Time     | VOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         | NOISE             |                        | DUST                     |         |                           |         |                            |         |                          |         | ODOUR         |            | Comments (Action required?/ Action taken) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          | Average over 15 mins (ppm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Peak over 15 mins (ppm) | LAeq 15 mins (dB) | Peak over 15 mins (dB) | TSP (µg/m <sup>3</sup> ) |         | PM10 (µg/m <sup>3</sup> ) |         | PM2.5 (µg/m <sup>3</sup> ) |         | PM1 (µg/m <sup>3</sup> ) |         | Intensity 0-5 | Extent 0-5 |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        | 5 mins                   | 15 mins | 5 mins                    | 15 mins | 5 mins                     | 15 mins | 5 mins                   | 15 mins | see below     |            |                                           |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:20:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                     | 57.9              | 73.2                   | 64.4                     | 67.7    | 85.5                      | 83.4    | 19.43                      | 19.76   | 6.54                     | 7.45    | 0             | 0          |                                           |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:40:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                     | 56.4              | 74.5                   | 78.5                     | 74.8    | 67.4                      | 64.6    | 23.64                      | 21.54   | 5.63                     | 6.74    | 0             | 0          |                                           |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:00:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                     | 52.8              | 81.5                   | 79.6                     | 65.7    | 64.5                      | 65.8    | 24.45                      | 24.67   | 6.65                     | 6.45    | 0             | 0          |                                           |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:20:00 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                     | 58.6              | 76.7                   | 59.6                     | 67.4    | 64.2                      | 59.6    | 19.43                      | 21.43   | 6.32                     | 7.12    | 0             | 0          |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                   |                        |                          |         |                           |         |                            |         |                          |         |               |            |                                           |

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

| Site: Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                          | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"> <b>Vapour Trigger Values</b><br/> <small>Off site receptors</small><br/>           Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br/> <small>On site receptors</small><br/>           RPE Criteria _0.5____ ppm (15 min TWA) at treatment area<br/>           Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn         </td> <td style="width: 50%;"> <b>Dust action/limit value</b><br/>           General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br/> <br/> <small>Noise exposure limit values and action values (15 min LAeq)</small><br/>           Action Level: 85dB where ear protection must be worn<br/>           Stop work Criteria 90 dB<br/> <small>Odour limit and action values</small><br/>           Action level: Intensity 2 Extent 2<br/>           Stop work Criteria: Intensity 3 Extent 3         </td> </tr> </table> |                         |                   |                        |             |         |              |         |               |         | <b>Vapour Trigger Values</b><br><small>Off site receptors</small><br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br><small>On site receptors</small><br>RPE Criteria _0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><br><small>Noise exposure limit values and action values (15 min LAeq)</small><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><small>Odour limit and action values</small><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |               |            |                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|------------------------|-------------|---------|--------------|---------|---------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------|-------------------------------------------|
| <b>Vapour Trigger Values</b><br><small>Off site receptors</small><br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br><small>On site receptors</small><br>RPE Criteria _0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn                                                                                                                                                   | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><br><small>Noise exposure limit values and action values (15 min LAeq)</small><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><small>Odour limit and action values</small><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| Date: 09/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| Round Number: 2                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          | Weather: Sunny<br>Wind Direction: S 12mph<br>mB:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| PID Calibration Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                          | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Time                                                                                                                                                                                                                                                                                                                                                                                                                     | VOC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         | NOISE             |                        | DUST        |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          | ODOUR         |            | Comments (Action required?/ Action taken) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          | Average over 15 mins (ppm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Peak over 15 mins (ppm) | LAeq 15 mins (dB) | Peak over 15 mins (dB) | TSP (µg/m³) |         | PM10 (µg/m³) |         | PM2.5 (µg/m³) |         | PM1 (µg/m³)                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                          | Intensity 0-5 | Extent 0-5 |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        | 5 mins      | 15 mins | 5 mins       | 15 mins | 5 mins        | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                      | 15 mins                                                                                                                                                                                                                                                                                                                                                                                                                  | see below     |            |                                           |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 14:20:00                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                     | 54.5              | 74.6                   | 77.4        | 77.2    | 91.3         | 89.3    | 24.5          | 21.34   | 7.35                                                                                                                                                                                                                                                                                                        | 7.39                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | 0          |                                           |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 14:40:00                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                     | 57.4              | 78.5                   | 69.8        | 72.3    | 76.3         | 77.5    | 23.8          | 19.75   | 6.75                                                                                                                                                                                                                                                                                                        | 6.56                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | 0          |                                           |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:00:00                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                     | 56.3              | 83.2                   | 83.5        | 81.5    | 84.4         | 81.3    | 24.54         | 23.68   | 5.73                                                                                                                                                                                                                                                                                                        | 6.13                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | 0          |                                           |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:20:00                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.0                     | 57.7              | 80.1                   | 65.3        | 66.2    | 69.8         | 70.4    | 20.45         | 21.56   | 7.43                                                                                                                                                                                                                                                                                                        | 7.45                                                                                                                                                                                                                                                                                                                                                                                                                     | 0             | 0          |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                   |                        |             |         |              |         |               |         |                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                          |               |            |                                           |

**Odour Monitoring Criteria****Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)



[illegible]

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| Odour Monitoring Criteria                                                                     | Extent                                                                        |
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| Intensity                                                                                     |                                                                               |
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| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Date:</b> 15/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> NE 7mph<br><b>mB:</b>                                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                      |                   |                                                  |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15 mins | see below            |                   |                                                  |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 54.7                     | 66.7                          |                    |         |                     |         | 91.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:20:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 53.2                     | 68.1                          |                    |         |                     |         | 87.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:40:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 56.4                     | 80.3                          |                    |         |                     |         | 87.8                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 55.8                     | 79.5                          |                    |         |                     |         | 83.8                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>GW site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 16/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> S 8mph<br><b>mB:</b>                                                                                                                                                                                                            |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15 mins | see below            |                   |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:30:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 55.4                     | 63.6                          |                    |         |                     |         | 101.4                |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:50:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 54.3                     | 70.3                          |                    |         |                     |         | 92.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:10:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 56.8                     | 76.5                          |                    |         |                     |         | 84.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:30:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 55.8                     | 79.4                          |                    |         |                     |         | 91.3                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)



[illegible]

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[illegible]

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|----------------|---------------------|----------------|----------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|-------------------|--------------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria _0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |                |                     |                |                      |                | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Odour limit and action values:<br>Off site receptors (15 min LAeq)<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |                |                      |                   |                                                  |  |  |  |  |  |
| <b>Date:</b> 21/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Very Heavy Rain<br><b>Wind Direction:</b> NNE 16mph<br><b>mB:</b>                                                                                                                                                                                            |                                |                          |                               |                    |                |                     |                |                      |                | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                  |                |                      |                   |                                                  |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                   |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                            | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |                | <b>PM10 (µg/m³)</b> |                | <b>PM2.5 (µg/m³)</b> |                | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               | <b>5 mins</b>      | <b>15 mins</b> | <b>5 mins</b>       | <b>15 mins</b> | <b>5 mins</b>        | <b>15 mins</b> | <b>5 mins</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>15 mins</b> | <b>see below</b>     | <b>see below</b>  |                                                  |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             | VERY HEAVY RAIN UNABLE TO MONITOR, NO WORKS UNDERTAKEN                                                                                                                                                                                                                       |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 0                    | 0                 |                                                  |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 0                    | 0                 |                                                  |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 0                    | 0                 |                                                  |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                              |                                |                          |                               |                    |                |                     |                |                      |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                      |                   |                                                  |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
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**Extent**

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[illegible]

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Date:</b> 23/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> NNE 15 mph<br><b>mB:</b>                                                                                                                                                                                                        |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                |         |                      |                   |                                                  |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15 mins | see below            |                   |                                                  |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:20:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 49.3                     | 56.4                          |                    |         |                     |         | 62.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:40:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 53.5                     | 59.4                          |                    |         |                     |         | 58.6                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 57.3                     | 76.5                          |                    |         |                     |         | 59.2                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:20:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 56.8                     | 78.2                          |                    |         |                     |         | 60.1                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                           |         |                      |                   |                                                  |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

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### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Date:</b> 24/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> NW 9mph<br><b>mB:</b>                                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                      |                   |                                                  |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15 mins | see below            |                   |                                                  |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12:10:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 53                       | 67                            |                    |         |                     |         | 43                   |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:10:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 65                       | 69                            |                    |         |                     |         | 23.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:30:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 59                       | 72                            |                    |         |                     |         | 40.3                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:50:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 60                       | 76                            |                    |         |                     |         | 33.2                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
| Dig Area F4                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.52        | 0                                                                                                                                                                                                                                                                               | 0                              | 72                       | 79                            |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                                  |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

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### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|-----------------------------------------|--|------------------------------------------|--|-------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>Off site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                                         |  |                                          |  |                                           |  | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Odour limit and action values:<br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |  |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 25/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Showers<br><b>Wind Direction:</b> WSW 9 mph<br><b>mB:</b>                                                                                                                                                                                                        |                                |                          |                               |                                         |  |                                          |  |                                           |  | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                       |                                | <b>NOISE</b>             |                               | <b>DUST</b>                             |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b><br>5 mins    15 mins |  | <b>PM10 (µg/m³)</b><br>5 mins    15 mins |  | <b>PM2.5 (µg/m³)</b><br>5 mins    15 mins |  | <b>PM1 (µg/m³)</b><br>5 mins    15 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:30:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 53                       | 62                            |                                         |  |                                          |  | 35.5                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      | 0                 | 0                                         |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:50:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 57                       | 64                            |                                         |  |                                          |  | 45.2                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      | 0                 | 0                                         |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:10:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 64                       | 75                            |                                         |  |                                          |  | 36.3                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      | 0                 | 0                                         |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10:30:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 61                       | 77                            |                                         |  |                                          |  | 32.1                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      | 0                 | 0                                         |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                                         |  |                                          |  |                                           |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
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**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
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- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

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### Environmental Monitoring/ Occupational Monitoring Proforma

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|-------------------------------|---------|--------------------------------|---------|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                               |         |                                |         |                                 |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m <sup>3</sup> (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 28/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny Spells<br><b>Wind Direction:</b> S 8 mph<br><b>mB:</b>                                                                                                                                                                                                    |                                |                          |                               |                               |         |                                |         |                                 |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>                   |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m<sup>3</sup>)</b> |         | <b>PM10 (µg/m<sup>3</sup>)</b> |         | <b>PM2.5 (µg/m<sup>3</sup>)</b> |         | <b>PM1 (µg/m<sup>3</sup>)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins                        | 15 mins | 5 mins                         | 15 mins | 5 mins                          | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15 mins | see below            |                   |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 49                       | 54                            |                               |         |                                |         | 44.6                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:20:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 53                       | 58                            |                               |         |                                |         | 47.6                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11:40:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 58                       | 76                            |                               |         |                                |         | 53.6                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 65                       | 73                            |                               |         |                                |         | 49.5                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      | 0                 | 0                                         |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| Breaking concrete with bucket                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |                                                                                                                                                                                                                                                                                 |                                | 60.4                     | 83.3                          |                               |         |                                |         | 68.5                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      | 0                 | 0                                         |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                               |         |                                |         |                                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |



[illegible]

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)  
4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
3 Persistent, but fairly localised  
4 Persistent and pervasive up to 50m from plant or installation boundary  
5 Persistent and widespread (odour detected >50 m from installation boundary)

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>Off site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 30/06/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Overcast<br><b>Wind Direction:</b> N 6 mph<br><b>mB:</b>                                                                                                                                                                                                         |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                       |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15 mins | see below            | see below         |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:10:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 45                       | 57                            |                    |         |                     |         | 31.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:30:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 52                       | 53                            |                    |         |                     |         | 37.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:50:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 56                       | 78                            |                    |         |                     |         | 46.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      | 0                 | 0                                         |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:10:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 59                       | 74                            |                    |         |                     |         | 53.7                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      | 0                 | 0                                         |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

[illegible]

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| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
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| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
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| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

[illegible]

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[illegible]

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[illegible]

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| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|--------------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>(Off site receptors)<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Date:</b> 06/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Overcast<br><b>Wind Direction:</b> W 24mph<br><b>mB:</b>                                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                      |                   |                                                  |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                         |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                  | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15 mins | see below            |                   |                                                  |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:00:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 38                       | 51                            |                    |         |                     |         | 25.3                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:20:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 43                       | 57                            |                    |         |                     |         | 28.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:40:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 57                       | 67                            |                    |         |                     |         | 31.2                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 1                    | 1                 | Slight hydrocarbon odour form excavation works   |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:00:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 55                       | 73                            |                    |         |                     |         | 24.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                                  |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| <b>Site:</b> Arundel<br><b>Date:</b> 07/07/2021 |  | <b>Vapour Trigger Values</b><br>On site exposure<br>Stop Work at <u>1.0</u> ppm (15 min TWA) at site boundary<br>On site exposure<br>RPE Criteria <u>0.5</u> ppm (15 min TWA) at treatment area<br>Stop Work at <u>10</u> ppm (15 min TWA) at treatment area when RPE worn<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3                                                                                                  |  |  |  | <b>Over action/limit value</b><br>General Dust Exposure Action Limit Values: <u>250</u> µg/m3 (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |  |  |  |  |  |  |  |  |  |
|                                                 |  | Round Number: 1<br>Weather: Rain<br>Wind Direction: W16 mph<br>PID Calibration Passed: Y/N<br>mB:                                                                                                                                                                                                                                                                                                                                                             |  |  |  | Monitoring Equipment Pre-Checks Completed<br>DustMate [Celt109]<br>Noise Meter [Celt220]<br>PID [Celt254]                                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |
|                                                 |  | <b>Comments (Action required?/ Action taken)</b>                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  | <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  | Use below to record occupational health monitoring readings in active work areas. I.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise, VOC's). Consideration should be given to use of Data logging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)  
4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
3 Persistent, but fairly localised  
4 Persistent and pervasive up to 50m from plant or installation boundary  
5 Persistent and widespread (odour detected >50 m from installation boundary)

[illegible]

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>(Off site receptors)<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Odour limit and action values:<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 08/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Showers<br><b>Wind Direction:</b> SSW 6mph<br><b>mB:</b>                                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                              |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                         |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                  | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                      |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                  | 15 mins | see below            | see below         |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:30:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 48                       | 59                            |                    |         |                     | 35.4    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 08:50:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 46                       | 62                            |                    |         |                     | 46.8    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:10:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 55                       | 76                            |                    |         |                     | 42.6    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 09:30:00    | 0.0                                                                                                                                                                                                                                                                                | 0.0                            | 59                       | 79                            |                    |         |                     | 54.9    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         | 0                    | 0                 |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                    |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                         |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

[illegible]

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[illegible]

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[illegible]

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------|------------------------|--------------------------|---------|---------------------------|---------|----------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------|------------|--------------------------------------------|--|--|--|--|--|
| Site: Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                                |          | Vapour Trigger Values<br>GW site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                         |                   |                        |                          |         |                           |         |                            |         | Dust action/limit value<br>General Dust Exposure Action Limit Values: ____250____ µg/m <sup>3</sup> (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Odour limit and action values<br>Off site receptors (15 min LAeq)<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |               |            |                                            |  |  |  |  |  |
| Date: 12/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
| Round Number: 2                                                                                                                                                                                                                                                                                                                                                                                                                                              |          | Weather: Showers<br>Wind Direction: SSW 7 mph<br>mB:                                                                                                                                                                                                                     |                         |                   |                        |                          |         |                           |         |                            |         | Monitoring Equipment Pre-Checks Completed<br>DustMate [Celt109] Y—N—N/A<br>Noise Meter [Celt220] Y—N—N/A<br>PID [Celt254] Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                               |         |               |            |                                            |  |  |  |  |  |
| PID Calibration Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | VOC                                                                                                                                                                                                                                                                      |                         | NOISE             |                        | DUST                     |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | ODOUR         |            | Comments (Action required?/ Action taken)  |  |  |  |  |  |
| Location                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Time     | Average over 15 mins (ppm)                                                                                                                                                                                                                                               | Peak over 15 mins (ppm) | LAeq 15 mins (dB) | Peak over 15 mins (dB) | TSP (µg/m <sup>3</sup> ) |         | PM10 (µg/m <sup>3</sup> ) |         | PM2.5 (µg/m <sup>3</sup> ) |         | PM1 (µg/m <sup>3</sup> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |         | Intensity 0-5 | Extent 0-5 |                                            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        | 5 mins                   | 15 mins | 5 mins                    | 15 mins | 5 mins                     | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 15 mins | see below     |            |                                            |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                         |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15:00:00 | 0.0                                                                                                                                                                                                                                                                      | 0.0                     | 51                | 63                     |                          |         |                           |         | 54.3                       |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | 0             | 0          |                                            |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15:20:00 | 0.0                                                                                                                                                                                                                                                                      | 0.0                     | 54                | 68                     |                          |         |                           |         | 49.6                       |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | 0             | 0          |                                            |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15:40:00 | 0.0                                                                                                                                                                                                                                                                      | 0.0                     | 65                | 79                     |                          |         |                           |         | 78.4                       |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | 1             | 1          | Slight Hydrocarbon odour due to excavation |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 16:00:00 | 0.0                                                                                                                                                                                                                                                                      | 0.0                     | 62                | 75                     |                          |         |                           |         | 67.3                       |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         | 1             | 1          | Slight Hydrocarbon odour due to excavation |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise, VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |                                                                                                                                                                                                                                                                          |                         |                   |                        |                          |         |                           |         |                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |         |               |            |                                            |  |  |  |  |  |

**Odour Monitoring Criteria****Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

### Odour Monitoring Criteria

0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)  
4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
3 Persistent, but fairly localised  
4 Persistent and pervasive up to 50m from plant or installation boundary  
5 Persistent and widespread (odour detected >50 m from installation boundary)

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

[illegible]

### Odour Monitoring Criteria

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
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4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
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4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

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1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
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5 Persistent and widespread (odour detected >50 m from installation boundary)

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

[illegible]

Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
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### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|-------------------------------------------------|--|--------------------------------------------------|------|---------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------|-------------------|--------------------------------------------------|
| <b>Site:</b> Arundel<br><b>Date:</b> 19/07/2021                                                                                                                                                                                                                                                                                                                                                                                                              |             | <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <b>Vapour Trigger Values</b><br/> <small>Off site receptors</small><br/>           Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br/> <small>On site receptors</small><br/>           RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br/>           Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br/> <small>Odour limit and action values:</small><br/>           Action level: Intensity 2 Extent 2<br/>           Stop work Criteria: Intensity 3 Extent 3         </div> <div style="width: 48%;"> <b>Dust action/limit value</b><br/>           General Dust Exposure Action Limit Values: ____250____ µg/m<sup>3</sup> (PM10 15 min TWA)<br/> <small>Noise exposure limit values and action values (15 min LAeq):</small><br/>           Action Level: 85dB where ear protection must be worn<br/>           Stop work Criteria 90 dB<br/> <small>Off site receptors (15 min LAeq):</small><br/>           Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become &gt;73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB         </div> </div> |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> S 3 mph<br><b>mB:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  | <b>Monitoring Equipment Pre-Checks Completed</b><br>DustMate [Celt109] Y—N—N/A<br>Noise Meter [Celt220] Y—N—N/A<br>PID [Celt254] Y—N—N/A |  |                      |                   |                                                  |
| <b>PID Calibration</b><br><b>Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                 |             | <b>VOC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                | <b>NOISE</b>             |                               | <b>DUST</b>                                     |  |                                                  |      |                                                   |  |                                                                                                                                          |  | <b>ODOUR</b>         |                   | <b>Comments (Action required?/ Action taken)</b> |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m<sup>3</sup>)</b><br>5 mins 15 mins |  | <b>PM10 (µg/m<sup>3</sup>)</b><br>5 mins 15 mins |      | <b>PM2.5 (µg/m<sup>3</sup>)</b><br>5 mins 15 mins |  | <b>PM1 (µg/m<sup>3</sup>)</b><br>5 mins 15 mins                                                                                          |  | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                                  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                         |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 09:00:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0                            | 58                       | 67                            |                                                 |  |                                                  | 19.4 |                                                   |  |                                                                                                                                          |  | 0                    | 0                 |                                                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 09:20:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0                            | 67                       | 73                            |                                                 |  |                                                  | 32.9 |                                                   |  |                                                                                                                                          |  | 0                    | 0                 |                                                  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 09:40:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0                            | 64                       | 80                            |                                                 |  |                                                  | 25.5 |                                                   |  |                                                                                                                                          |  | 0                    | 0                 |                                                  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10:00:00    | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.0                            | 65                       | 78                            |                                                 |  |                                                  | 18.5 |                                                   |  |                                                                                                                                          |  | 1                    | 1                 | Slight Hydrocarbon odour due to excavation       |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise, VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |                          |                               |                                                 |  |                                                  |      |                                                   |  |                                                                                                                                          |  |                      |                   |                                                  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
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| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |

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### Environmental Monitoring/ Occupational Monitoring Proforma

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| <b>Site:</b> Arundel<br><b>Date:</b> 21/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Vapour Trigger Values</b><br/>           On site receptors<br/>           Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br/>           On site receptors<br/>           RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br/>           Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br/> <b>Odour Risk and action values:</b><br/>           Action level: Intensity 2 Extent 2<br/>           Stop work Criteria: Intensity 3 Extent 3         </td> <td style="width: 50%; vertical-align: top;"> <b>Dust action/limit value</b><br/>           General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br/> <b>Noise exposure limit values and action values (15 min LAeq):</b><br/>           Action Level: 85dB where ear protection must be worn<br/>           Stop work Criteria 90 dB<br/> <b>Off site receptors (15 min LAeq):</b><br/>           Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become &gt;73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB         </td> </tr> </table> |                                |                          |                               |                    |         |                     |         |                      |         | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br><b>Odour Risk and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq):</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Off site receptors (15 min LAeq):</b><br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB | <b>Monitoring Equipment Pre-Checks Completed</b><br>DustMate [Celt109] Y—N—N/A<br>Noise Meter [Celt220] Y—N—N/A<br>PID [Celt254] Y—N—N/A |                   |                                                  |  |  |
| <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn<br><b>Odour Risk and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3                                                                | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq):</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Off site receptors (15 min LAeq):</b><br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
| <b>Round Number:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> NE 3 mph<br><b>mB:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
| <b>PID Calibration</b><br><b>Passed:</b> Y/N                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>VOC</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>ODOUR</b>                                                                                                                             |                   | <b>Comments (Action required?/ Action taken)</b> |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Time</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Intensity 0-5</b>                                                                                                                     | <b>Extent 0-5</b> |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                    | 15 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | see below                                                                                                                                | see below         |                                                  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 09:00:00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                            | 61                       | 72                            |                    |         |                     | 19.4    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                        | 0                 |                                                  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 09:20:00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                            | 68                       | 82                            |                    |         |                     | 20.5    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                        | 0                 |                                                  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 09:40:00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                            | 66                       | 79                            |                    |         |                     | 17.6    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0                                                                                                                                        | 0                 |                                                  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10:00:00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.0                            | 67                       | 80                            |                    |         |                     | 19.8    |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                                                                                        | 1                 | Slight Hydrocarbon odour due to excavation       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
| <b>Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems &amp; adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                          |                   |                                                  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

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| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
| 5 Very strong odour (very offensive, possibly causing nausea)                                 | 5 Persistent and widespread (odour detected >50 m from installation boundary) |



| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
| 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)        | 1 Local & transient (only during brief periods when wind drops or blows)      |
| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
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| Odour Monitoring Criteria                                                                     | Extent                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Intensity                                                                                     |                                                                               |
| 0 No detectable odour                                                                         | 0 No detectable odour                                                         |
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| 2 Moderate odour (distinct odour detected while standing still)                               | 2 Transient as above, but detected away from installation boundary            |
| 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive) | 3 Persistent, but fairly localised                                            |
| 4 Strong odour (bearable, but offensive odour)                                                | 4 Persistent and pervasive up to 50m from plant or installation boundary      |
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[illegible]

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## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>Off site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Off site receptors (15 min LAeq)<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 28/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> SW 27 MPH Gusting 40MPH+<br><b>mB:</b>                                                                                                                                                                                           |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                       |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                                | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 15 mins | see below            |                   |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:00:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 60                       | 70                            |                    |         |                     |         | 55.9                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:20:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 65                       | 74                            |                    |         |                     |         | 48.3                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:40:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 71                       | 80                            |                    |         |                     |         | 52.9                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:00:00    | 0.0                                                                                                                                                                                                                                                                              | 0.0                            | 70                       | 84                            |                    |         |                     |         | 55.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         | 0                    | 0                 |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                  |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)

|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| <b>Site:</b> Arundel<br><b>Date:</b> 29/07/2021 |  | <b>Vapour Trigger Values</b><br>On site exposure<br>Stop Work at <u>1.0</u> ppm (15 min TWA) at site boundary<br>On site exposure<br>RPE Criteria <u>0.5</u> ppm (15 min TWA) at treatment area<br>Stop Work at <u>10</u> ppm (15 min TWA) at treatment area when RPE worn<br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3                                                                                                   |  |  |  | <b>Over action limit value</b><br>General Dust Exposure Action Limit Values: <u>250</u> µg/m3 (PM10 15 min TWA)<br>Noise exposure limit values and action values (15 min LAeq)<br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br>Predicted noise level of 70 dB at site boundary shall be adhered to. Where levels become >73 dB, works shall cease and further mitigation measures installed. Background value for site: 65 dB |  |  |  |  |  |  |  |  |  |
|                                                 |  | Round Number: 1<br>Weather: Sunny<br>Wind Direction: SW 22 MPH Gusting 35MPH+<br>PID Calibration Passed: Y/N<br>mB:                                                                                                                                                                                                                                                                                                                                            |  |  |  | Monitoring Equipment Pre-Checks Completed<br>DustMate [Celt109]<br>Noise Meter [Celt220]<br>PID [Celt254]                                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |  |  |  |
|                                                 |  | <b>Comments (Action required?/ Action taken)</b>                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  | <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                           |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  | Use below to record occupational health monitoring readings in active work areas. I.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Data logging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |

**Intensity**

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)  
4 Strong odour (bearable, but offensive odour)  
5 Very strong odour (very offensive, possibly causing nausea)

### Extent

- 0 No detectable odour  
1 Local & transient (only during brief periods when wind drops or blows)  
2 Transient as above, but detected away from installation boundary  
3 Persistent, but fairly localised  
4 Persistent and pervasive up to 50m from plant or installation boundary  
5 Persistent and widespread (odour detected >50 m from installation boundary)

## SAR-PC-32

### Environmental Monitoring/ Occupational Monitoring Proforma

|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------|-------------------------------|--------------------|---------|---------------------|---------|----------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|-------------------|-------------------------------------------|--|--|--|--|--|
| <b>Site:</b> Arundel                                                                                                                                                                                                                                                                                                                                                                                                                                          |             | <b>Vapour Trigger Values</b><br>On site receptors<br>Stop Work at ____1.0____ ppm (15 min TWA) at site boundary<br>On site receptors<br>RPE Criteria ____0.5____ ppm (15 min TWA) at treatment area<br>Stop Work at ____10____ ppm (15 min TWA) at treatment area when RPE worn |                                |                          |                               |                    |         |                     |         |                      |         | <b>Dust action/limit value</b><br>General Dust Exposure Action Limit Values: ____250____ µg/m3 (PM10 15 min TWA)<br><b>Noise exposure limit values and action values (15 min LAeq)</b><br>Action Level: 85dB where ear protection must be worn<br>Stop work Criteria 90 dB<br><b>Odour limit and action values:</b><br>Action level: Intensity 2 Extent 2<br>Stop work Criteria: Intensity 3 Extent 3 |         |                      |                   |                                           |  |  |  |  |  |
| <b>Date:</b> 29/07/2021                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
| <b>Round Number:</b> 2                                                                                                                                                                                                                                                                                                                                                                                                                                        |             | <b>Weather:</b> Sunny<br><b>Wind Direction:</b> SW 27 MPH Gusting 35MPH+<br><b>mB:</b>                                                                                                                                                                                          |                                |                          |                               |                    |         |                     |         |                      |         | Monitoring Equipment Pre-Checks Completed    DustMate [Celt109]    Y—N—N/A<br>Noise Meter [Celt220]    Y—N—N/A<br>PID [Celt254]    Y—N—N/A                                                                                                                                                                                                                                                            |         |                      |                   |                                           |  |  |  |  |  |
| <b>PID Calibration</b><br>Passed: Y/N                                                                                                                                                                                                                                                                                                                                                                                                                         |             | <b>VOC</b>                                                                                                                                                                                                                                                                      |                                | <b>NOISE</b>             |                               | <b>DUST</b>        |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         | <b>ODOUR</b>         |                   | Comments (Action required?/ Action taken) |  |  |  |  |  |
| <b>Location</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Time</b> | <b>Average over 15 mins (ppm)</b>                                                                                                                                                                                                                                               | <b>Peak over 15 mins (ppm)</b> | <b>LAeq 15 mins (dB)</b> | <b>Peak over 15 mins (dB)</b> | <b>TSP (µg/m³)</b> |         | <b>PM10 (µg/m³)</b> |         | <b>PM2.5 (µg/m³)</b> |         | <b>PM1 (µg/m³)</b>                                                                                                                                                                                                                                                                                                                                                                                    |         | <b>Intensity 0-5</b> | <b>Extent 0-5</b> |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               | 5 mins             | 15 mins | 5 mins              | 15 mins | 5 mins               | 15 mins | 5 mins                                                                                                                                                                                                                                                                                                                                                                                                | 15 mins | see below            |                   |                                           |  |  |  |  |  |
| <b>IMPORTANT: if TRIGGER VALUES are exceeded SITE supervisor and site team should be notified immediately and controls reviewed.</b>                                                                                                                                                                                                                                                                                                                          |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 55                       | 67                            |                    |         |                     |         | 31.3                 |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:20:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 58                       | 76                            |                    |         |                     |         | 40.5                 |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 15:40:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 66                       | 80                            |                    |         |                     |         | 37.4                 |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         | 0                    | 0                 |                                           |  |  |  |  |  |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 16:00:00    | 0.0                                                                                                                                                                                                                                                                             | 0.0                            | 68                       | 80                            |                    |         |                     |         | 55.9                 |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         | 0                    | 0                 |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
| Use below to record occupational health monitoring readings in active work areas, i.e. Remediation technologies processes at excavation/ drilling location (VOC's and noise), within/around WTS/BP systems & adjacent to pumps BH and dewatering locations (noise , VOC's). Consideration should be given to use of Datalogging PID for work shift exposure monitoring and use of Personal PID etc for workers undertaking tasks where exposure is occurring. |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                                                                                                                                                                                                                                                                 |                                |                          |                               |                    |         |                     |         |                      |         |                                                                                                                                                                                                                                                                                                                                                                                                       |         |                      |                   |                                           |  |  |  |  |  |

**Odour Monitoring Criteria**
**Intensity**

- 0 No detectable odour
- 1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)
- 2 Moderate odour (distinct odour detected while standing still)
- 3 Moderately strong odour (detectable while walking & breathing, normally possibly offensive)
- 4 Strong odour (bearable, but offensive odour)
- 5 Very strong odour (very offensive, possibly causing nausea)

**Extent**

- 0 No detectable odour
- 1 Local & transient (only during brief periods when wind drops or blows)
- 2 Transient as above, but detected away from installation boundary
- 3 Persistent, but fairly localised
- 4 Persistent and pervasive up to 50m from plant or installation boundary
- 5 Persistent and widespread (odour detected >50 m from installation boundary)



[illegible]

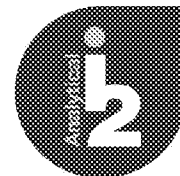
Intensity

- 0 No detectable odour  
1 Faint odour (barely detectable, need to stand still and inhale facing into the wind)  
2 Moderate odour (distinct odour detected while standing still)  
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# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-30-52-10:52:55 | 24/06/2021 | 24/06/2021 | 24/06/2021 | 29/06/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|                         |            |             |              |
|-------------------------|------------|-------------|--------------|
| PO NUMBER               | 81859      | CLIENT SITE | NGPH Arundel |
| END DATE SAMPLED        | 22/06/2021 | CLIENT CODE | C1820        |
| DATE SAMPLED (DD/MM/YY) | 08/06/2021 |             |              |

## Matrix: Water

| Determinand             | Technique | LCD           | Accreditation | i2 Sample Number |       |       |       |      |
|-------------------------|-----------|---------------|---------------|------------------|-------|-------|-------|------|
|                         |           |               |               | Sample Reference | EMP1  | EMP2  | EMP3  | EMP4 |
| Rate of Dust Deposition | T487      | 0.0 mg/m2/day | None          | 57.9             | 53.8  | 80.6  | 30.2  |      |
| Total Solids (mass)     | T487      | 10.0 mg       | None          | 32.8             | 30.5  | 45.7  | 17.1  |      |
| Total Solids (volume)   | T487      | 0.001 l       | None          | 2.790            | 1.790 | 2.590 | 1.780 |      |

| Technical Reviewer  | Role                     |
|---------------------|--------------------------|
| Mrs Kathryn Gleaves | Customer Services        |
| Mrs Jeanette Abbott | Customer Service Manager |

## Extra Testing Information

| Technique Code | Technique Name | Samples                        |
|----------------|----------------|--------------------------------|
| T487           | L004B-Grav     | 234501, 234502, 234503, 234504 |

| Testing Location                                                                                                                                      | Samples                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| All analysis was carried out at i2 Analytical (Poland). i2 Analytical Limited Sp z o o, Ordziat w Polsce, ul.Pionierow 39, 41-711 Ruda Slaska, Poland | 234501, 234502, 234503, 234504 |

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs.

Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.

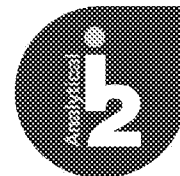
This is a simplified test report.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

Results in black are positive/detected results. Results in gray are below the LOD or have not been found.

LOD = Limit of Determination. This is the lowest reportable limit of the test.

# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-12-12-14:12:45 | 07/07/2021 | 07/07/2021 | 07/07/2021 | 12/07/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|                         |            |             |              |
|-------------------------|------------|-------------|--------------|
| PO NUMBER               | 81914      | CLIENT SITE | NGPH Arundel |
| END DATE SAMPLED        | 06/07/2021 | CLIENT CODE | C1820        |
| DATE SAMPLED (DD/MM/YY) | 22/06/2021 |             |              |

## Matrix: Water

| Determinand             | Technique | LCD           | Accreditation | i2 Sample Number |       |       |       |
|-------------------------|-----------|---------------|---------------|------------------|-------|-------|-------|
|                         |           |               |               | Sample Reference | EMP1  | EMP2  | EMP3  |
| Rate of Dust Deposition | T487      | 0.0 mg/m2/day | None          | 67.9             | 41.3  | 59.1  | 25.9  |
| Total Solids (mass)     | T487      | 10.0 mg       | None          | 38.5             | 23.4  | 33.5  | 14.7  |
| Total Solids (volume)   | T487      | 0.001 l       | None          | 1.900            | 1.640 | 1.860 | 1.200 |

## Matrix: Sticky Pad

| Determinand      | Technique | LCD | Accreditation | i2 Sample Number               |        |        |        |
|------------------|-----------|-----|---------------|--------------------------------|--------|--------|--------|
|                  |           |     |               | Sample Reference               | EMP1   | EMP2   | EMP3   |
| Directional Dust | T488      | 0.0 | None          | 240232, 240233, 240234, 240235 | 240232 | 240233 | 240234 |
|                  |           |     |               | 240232                         | 240233 | 240234 | 240235 |

|                           |                          |
|---------------------------|--------------------------|
| <b>Technical Reviewer</b> | <b>Role</b>              |
| Mrs Jeanette Abbott       | Customer Service Manager |
| Mrs Kathryn Gleaves       | Customer Services        |

## Extra Testing Information

| Technique Code | Technique Name         | Samples                        |
|----------------|------------------------|--------------------------------|
| T487           | LOO4B-Grav             | 240159, 240160, 240161, 240162 |
| T488           | L016-Sticky Pad Reader | 240232, 240233, 240234, 240235 |

| Testing Location                                                                                                                                       | Samples                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| All analysis was carried out at i2 Analytical (Poland), i2 Analytical Limited Sp z o.o., Oddział w Polsce, ul.Pionierow 39, 41-711 Ruda Śląska, Poland | 240159, 240160, 240161, 240162, 240232, 240233, 240234, 240235 |

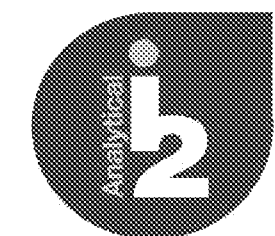
The results reported relate to samples received in the laboratory and may not be representative of a whole batch. Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs. Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request. This is a simplified test report.

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Results in black are positive/detected results. Results in gray are below the LOD or have not been found.  
LOD = Limit of Determination. This is the lowest reportable limit of the test.



# Directional Dust Analysis Report

Job No: 2091 / 21-85386 Sample No: 240159 / 1929481  
 Client: Celtic enGlobe Site Reference: CI820 NGPH Arundel



Environmental Science

**Gauge Ref:** EMPI

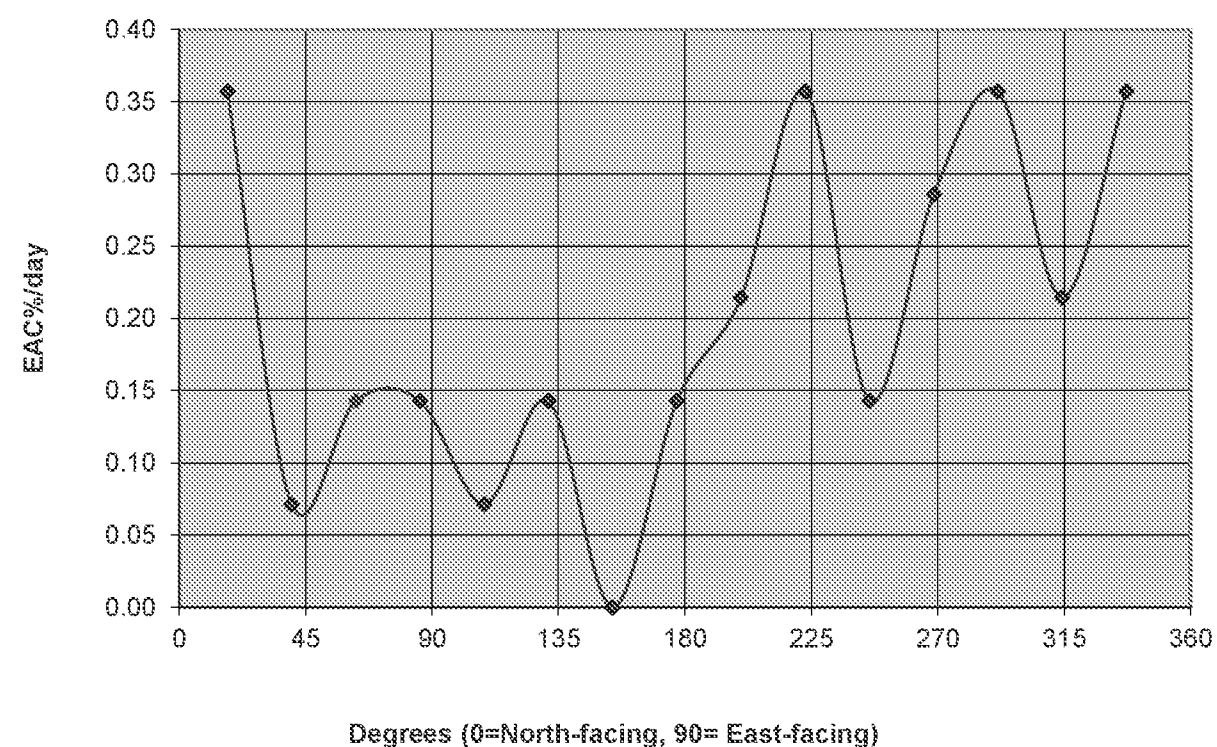
## Sticky Pad Data

Date On: 22/06/2021 Date Off: 06/07/2021 Days = 14

Clean = 101

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 96    | 337       | 0.36     |         |
| 40        | 98    | 314       | 0.21     |         |
| 60        | 96    | 291       | 0.36     |         |
| 80        | 97    | 269       | 0.29     |         |
| 100       | 99    | 246       | 0.14     |         |
| 120       | 96    | 223       | 0.36     |         |
| 140       | 98    | 200       | 0.21     |         |
| 160       | 99    | 177       | 0.14     |         |
| 180       | 101   | 154       | 0.00     |         |
| 200       | 99    | 131       | 0.14     |         |
| 220       | 100   | 109       | 0.07     |         |
| 240       | 99    | 86        | 0.14     |         |
| 260       | 99    | 63        | 0.14     |         |
| 280       | 100   | 40        | 0.07     |         |
| 300       | 96    | 17        | 0.36     |         |

EAC%/day vs Orientation



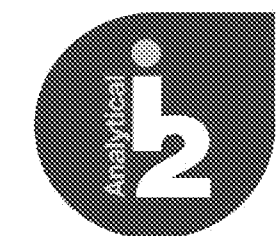
**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,

LR016.1 i2 Analytical 08/2017

# Directional Dust Analysis Report

Job No: 2091 / 21-85386 Sample No: 240160 / 1929482  
 Client: Celtic enGlobe Site Reference: CI820 NGPH Arundel



Environmental Science

**Gauge Ref:** EMP2

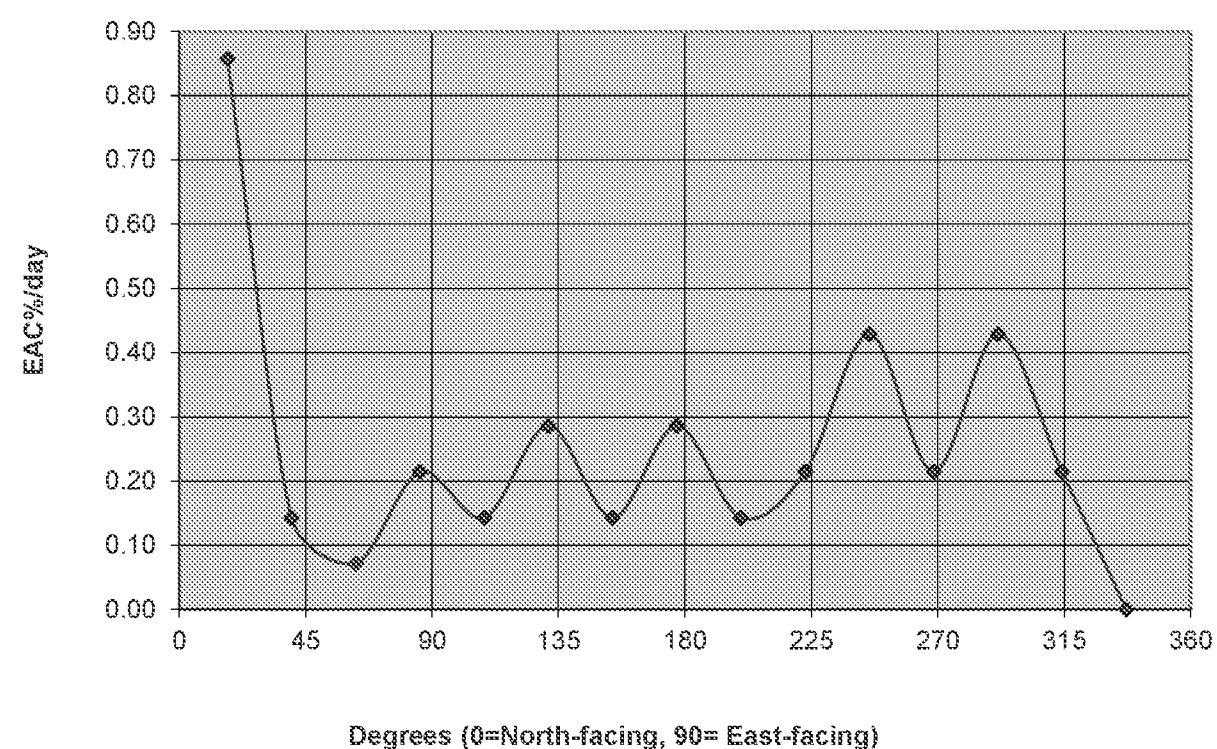
## Sticky Pad Data

Date On: 22/06/2021 Date Off: 06/07/2021 Days = 14

Clean = 101

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 101   | 337       | 0.00     |         |
| 40        | 98    | 314       | 0.21     |         |
| 60        | 95    | 291       | 0.43     |         |
| 80        | 98    | 269       | 0.21     |         |
| 100       | 95    | 246       | 0.43     |         |
| 120       | 98    | 223       | 0.21     |         |
| 140       | 99    | 200       | 0.14     |         |
| 160       | 97    | 177       | 0.29     |         |
| 180       | 99    | 154       | 0.14     |         |
| 200       | 97    | 131       | 0.29     |         |
| 220       | 99    | 109       | 0.14     |         |
| 240       | 98    | 86        | 0.21     |         |
| 260       | 100   | 63        | 0.07     |         |
| 280       | 99    | 40        | 0.14     |         |
| 300       | 89    | 17        | 0.86     |         |

EAC%/day vs Orientation



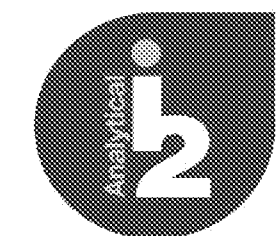
**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,  
 Watford, WD18 8Y5

LR016.1 i2 Analytical 08/2017

# Directional Dust Analysis Report

Job No: 2091 / 21-85386 Sample No: 240161 / 1929483  
 Client: Celtic enGlobe Site Reference: CI820 NGPH Arundel



Environmental Science

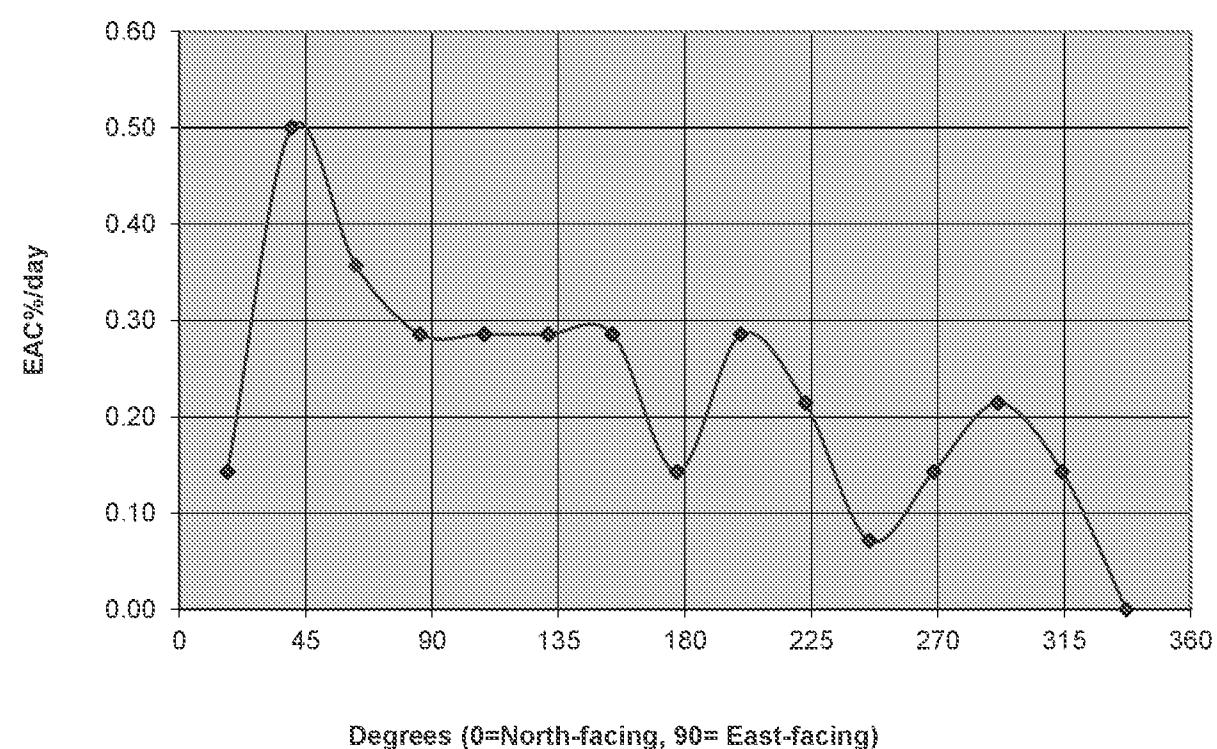
**Gauge Ref:** EMP3

## Sticky Pad Data

Date On: 22/06/2021 Date Off: 06/07/2021 Days = 14  
 Clean = 100

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 100   | 337       | 0.00     |         |
| 40        | 98    | 314       | 0.14     |         |
| 60        | 97    | 291       | 0.21     |         |
| 80        | 98    | 269       | 0.14     |         |
| 100       | 99    | 246       | 0.07     |         |
| 120       | 97    | 223       | 0.21     |         |
| 140       | 96    | 200       | 0.29     |         |
| 160       | 98    | 177       | 0.14     |         |
| 180       | 96    | 154       | 0.29     |         |
| 200       | 96    | 131       | 0.29     |         |
| 220       | 96    | 109       | 0.29     |         |
| 240       | 96    | 86        | 0.29     |         |
| 260       | 95    | 63        | 0.36     |         |
| 280       | 93    | 40        | 0.50     |         |
| 300       | 98    | 17        | 0.14     |         |

EAC%/day vs Orientation



**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

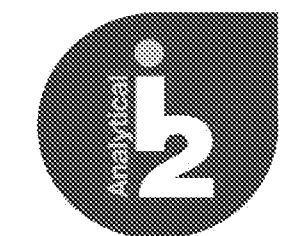
i2 Analytical Ltd.

LR016.1 i2 Analytical 08/2017



# Directional Dust Analysis Report

Job No: 2091 / 21-85386 Sample No: 240162 / 1929484  
 Client: Celtic enGlobe Site Reference: CI820 NGPH Arundel



Environmental Science

**Gauge Ref:** EMP4

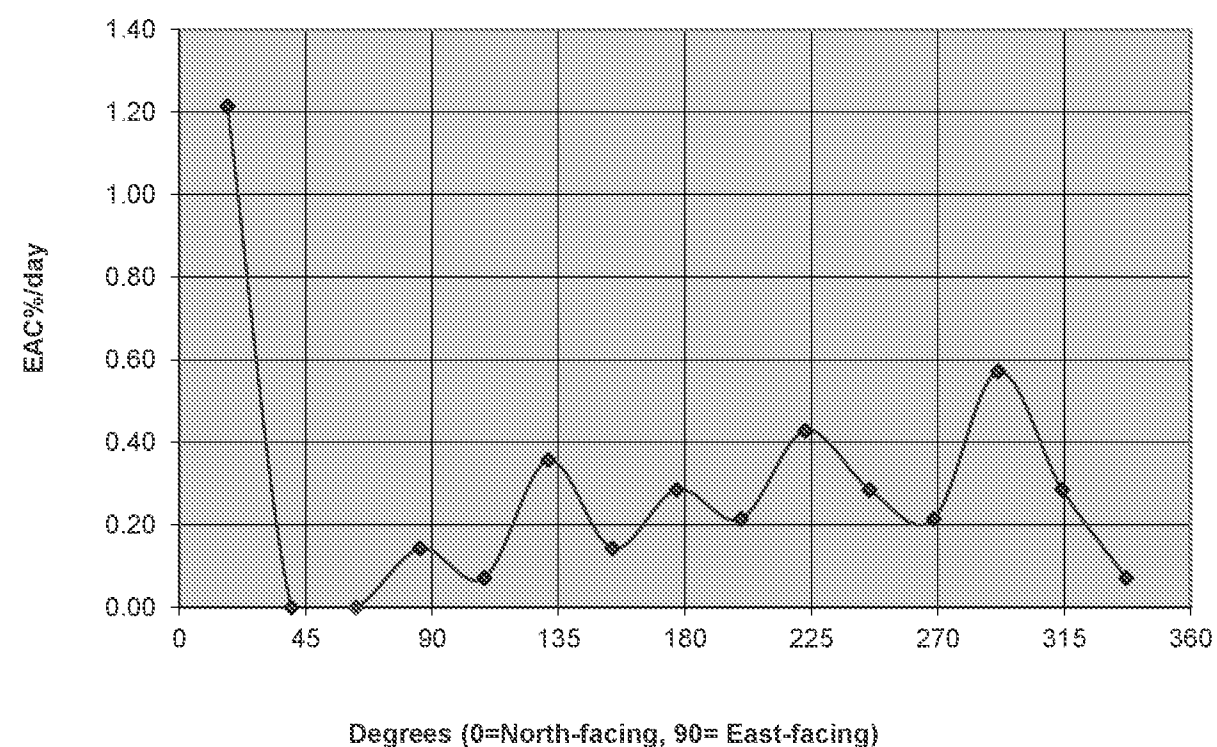
## Sticky Pad Data

Date On: 22/06/2021 Date Off: 06/07/2021 Days = 14

Clean = 101

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 100   | 337       | 0.07     |         |
| 40        | 97    | 314       | 0.29     |         |
| 60        | 93    | 291       | 0.57     |         |
| 80        | 98    | 269       | 0.21     |         |
| 100       | 97    | 246       | 0.29     |         |
| 120       | 95    | 223       | 0.43     |         |
| 140       | 98    | 200       | 0.21     |         |
| 160       | 97    | 177       | 0.29     |         |
| 180       | 99    | 154       | 0.14     |         |
| 200       | 96    | 131       | 0.36     |         |
| 220       | 100   | 109       | 0.07     |         |
| 240       | 99    | 86        | 0.14     |         |
| 260       | 101   | 63        | 0.00     |         |
| 280       | 101   | 40        | 0.00     |         |
| 300       | 84    | 17        | 1.21     |         |

EAC%/day vs Orientation



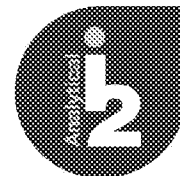
**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,

LR016.1 i2 Analytical 08/2017



# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-26-51-14:51:17 | 28/06/2021 | 16/07/2021 | 16/07/2021 | 26/07/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|             |              |           |       |
|-------------|--------------|-----------|-------|
| CLIENT CODE | C1820        | PO NUMBER | 81957 |
| CLIENT SITE | NGPH Arundel |           |       |

## Matrix: Tenax TD Tube

|                                     | i2 Sample Number    | 235711    | 235712        | 235717                | 235718                |
|-------------------------------------|---------------------|-----------|---------------|-----------------------|-----------------------|
|                                     | Sample Reference    | EMP2      | EMP1          | EMP4                  | EMP3                  |
|                                     | Sampling Time (min) | 20153     | 20144         | 20163                 | 20158                 |
|                                     | Pre Printed Barcode | 437844    | 437847        | 749629                | 749630                |
| Determinand                         | Technique           | LOD       | Accreditation |                       |                       |
| Benzene                             | T352                | 1.0 ng    | None          | 9.0                   | 5.3                   |
| Benzene mg/m3                       | T352                | 0.0 mg/m3 | None          | 0.0011                | 0.0008                |
| Benzene ppb                         | T352                | 0.0 ppb   | None          | 0.339                 | 0.240                 |
| Ethyl Benzene                       | T352                | 1.0 ng    | None          | 1.7                   | 1.2                   |
| Ethyl Benzene mg/m3                 | T352                | 0.0 mg/m3 | None          | 0.0002                | 0.0001                |
| Ethyl Benzene ppb                   | T352                | 0.0 ppb   | None          | 0.0421                | 0.0304                |
| Toluene                             | T352                | 1.0 ng    | None          | 6.9                   | 5.4                   |
| Toluene mg/m3                       | T352                | 0.0 mg/m3 | None          | 0.0008                | 0.0006                |
| Toluene ppb                         | T352                | 0.0 ppb   | None          | 0.306                 | 0.160                 |
| Total VOC (excluding Targets)       | T352                | 10.0 ng   | None          | 360                   | 210                   |
| Total VOC (excluding Targets) mg/m3 | T352                | 0.0 mg/m3 | None          | 0.0410 <sup>483</sup> | 0.0235 <sup>483</sup> |
| m/p-Xylene                          | T352                | 1.0 ng    | None          | 5.6                   | 4.4                   |
| m/p-Xylene mg/m3                    | T352                | 0.0 mg/m3 | None          | 0.0007                | 0.0005                |
| m/p-Xylene ppb                      | T352                | 0.0 ppb   | None          | 0.0756                | 0.0593                |
| o-Xylene                            | T352                | 1.0 ng    | None          | 2.2                   | 1.7                   |
| o-Xylene mg/m3                      | T352                | 0.0 mg/m3 | None          | 0.0003                | 0.0002                |
| o-Xylene ppb                        | T352                | 0.0 ppb   | None          | 0.0589                | 0.0459                |

|                                     | i2 Sample Number    | 235722    |
|-------------------------------------|---------------------|-----------|
|                                     | Sampling Time (min) | 20160     |
|                                     | Sample Reference    | Control 1 |
|                                     | Pre Printed Barcode | 1017171   |
| Determinand                         | Technique           | LOD       |
| Benzene                             | T352                | 1.0 ng    |
| Benzene mg/m3                       | T352                | 0.0 mg/m3 |
| Benzene ppb                         | T352                | 0.0 ppb   |
| Ethyl Benzene                       | T352                | 1.0 ng    |
| Ethyl Benzene mg/m3                 | T352                | 0.0 mg/m3 |
| Ethyl Benzene ppb                   | T352                | 0.0 ppb   |
| Toluene                             | T352                | 1.0 ng    |
| Toluene mg/m3                       | T352                | 0.0 mg/m3 |
| Toluene ppb                         | T352                | 0.0 ppb   |
| Total VOC (excluding Targets)       | T352                | 10.0 ng   |
| Total VOC (excluding Targets) mg/m3 | T352                | 0.0 mg/m3 |
| m/p-Xylene                          | T352                | 1.0 ng    |
| m/p-Xylene mg/m3                    | T352                | 0.0 mg/m3 |
| m/p-Xylene ppb                      | T352                | 0.0 ppb   |
| o-Xylene                            | T352                | 1.0 ng    |
| o-Xylene mg/m3                      | T352                | 0.0 mg/m3 |

|              |           | i2 Sample Number    | 235722        |
|--------------|-----------|---------------------|---------------|
|              |           | Sampling Time (min) | 20160         |
|              |           | Sample Reference    | Control 1     |
|              |           | Pre Printed Barcode | 1017171       |
| Determinand  | Technique | LOD                 | Accreditation |
| o-Xylene ppb | T352      | 0.0 ppb             | None          |

| Technical Reviewer  | Role                     |
|---------------------|--------------------------|
| Mrs Jeanette Abbott | Customer Service Manager |

## Extra Testing Information

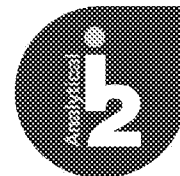
| Technique Code | Technique Name   | Samples                                |
|----------------|------------------|----------------------------------------|
| T352           | AIR02-1-GCMSI-TD | 235711, 235712, 235717, 235718, 235722 |

| Testing Location                                                                                                                                      | Samples                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| All analysis was carried out at i2 Analytical (Poland), i2 Analytical Limited Sp z o.o, Oddział w Polsce, ul.Pionierów 39, 41-711 Puda Śląska, Poland | 235711, 235712, 235717, 235718, 235722 |

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.  
 Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs.  
 Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.  
 This is a simplified test report.  
 This certificate should not be reproduced, except in full, without the express permission of the laboratory.  
 Results in black are positive/detected results. Results in gray are below the LOD or have not been found.  
 LOD = Limit of Determination. This is the lowest reportable limit of the test.  
 450 - Uptake rate used to calculate mg/m3 is based on Toluene



# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-27-37-14/37:41 | 22/07/2021 | 22/07/2021 | 22/07/2021 | 27/07/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|                         |            |             |              |
|-------------------------|------------|-------------|--------------|
| PO NUMBER               | 81975      | CLIENT SITE | NGPH Arundel |
| END DATE SAMPLED        | 20/07/2021 | CLIENT CODE | C1820        |
| DATE SAMPLED (DD/MM/YY) | 06/07/2021 |             |              |

## Matrix: Water

| Determinand             | Technique | LCD           | Accreditation | i2 Sample Number | 247053 | 247054 | 247055 | 247056 |
|-------------------------|-----------|---------------|---------------|------------------|--------|--------|--------|--------|
|                         |           |               |               | Sample Reference | EMP1   | EMP2   | EMP3   | EMP4   |
| Rate of Dust Deposition | T487      | 0.0 mg/m2/day | None          |                  | 39.7   | 73.9   | 65.8   | 60.1   |
| Total Solids (mass)     | T487      | 10.0 mg       | None          |                  | 22.5   | 41.9   | 37.9   | 28.4   |
| Total Solids (volume)   | T487      | 0.001 l       | None          |                  | 1.360  | 1.350  | 1.340  | 1.190  |

## Matrix: Sticky Pad

| Determinand      | Technique | LCD | Accreditation | i2 Sample Number | 247057                           | 247058                           | 247059                           | 247060                           |
|------------------|-----------|-----|---------------|------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                  |           |     |               | Sample Reference | EMP1                             | EMP2                             | EMP3                             | EMP4                             |
| Directional Dust | T488      | 0.0 | None          |                  | Not in scope<br>For verification | Not in scope<br>For verification | Not in scope<br>For verification | Not in scope<br>For verification |

| Technical Reviewer  | Role                     |
|---------------------|--------------------------|
| Mrs Kathryn Gleaves | Customer Services        |
| Mrs Jeanette Abbott | Customer Service Manager |

## Extra Testing Information

| Technique Code | Technique Name         | Samples                        |
|----------------|------------------------|--------------------------------|
| T487           | LO04B-Grav             | 247053, 247054, 247055, 247056 |
| T488           | LO16-Sticky Pad Reader | 247057, 247058, 247059, 247060 |

| Testing Location                                                                                                                                      | Samples                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| All analysis was carried out at i2 Analytical (Poland), i2 Analytical Limited Sp z o.o, Oddział w Polsce, ul.Pionierow 39, 41-711 Ruda Śląska, Poland | 247053, 247054, 247055, 247056, 247057, 247058, 247059, 247060 |

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.  
 Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs.  
 Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.  
 This is a simplified test report

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 Registered in England No.  
 4750390 VAT Reg. No. 821  
 0972 49

This certificate should not be reproduced, except in full, without the express permission of the laboratory.  
Results in black are positive/detected results. Results in gray are below the LOD or have not been found.  
LOD = Limit of Determination. This is the lowest reportable limit of the test.



# Directional Dust Analysis Report



Environmental Science

Job No: 2188 / 21-88314 Sample No: 247057 / 1946191  
 Client: Celtic enGlobe Site Reference: NGPH Arundel

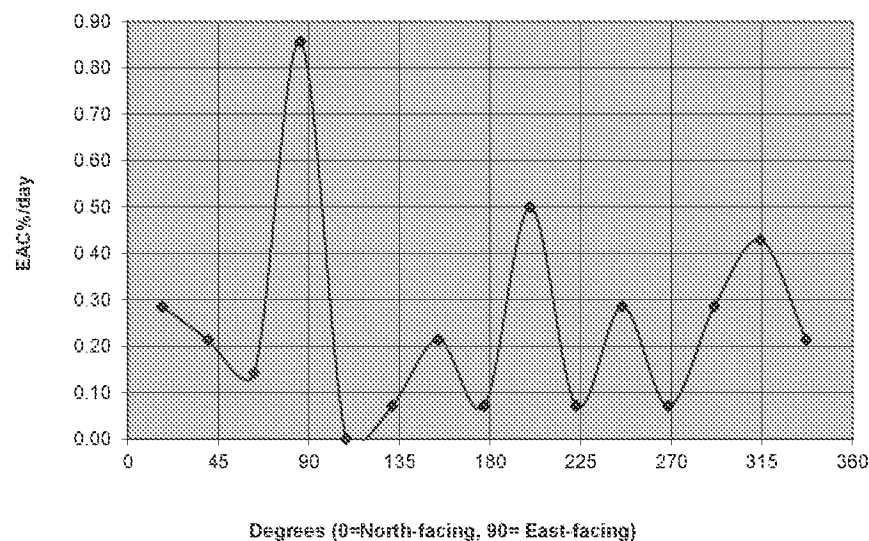
Gauge Ref: EMPI

## Sticky Pad Data

Date On: 06/07/2021 Date Off: 20/07/2021 Days = 14  
 Clean = 103

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 100   | 337       | 0.21     |         |
| 40        | 97    | 314       | 0.43     |         |
| 60        | 99    | 291       | 0.29     |         |
| 80        | 102   | 269       | 0.07     |         |
| 100       | 99    | 246       | 0.29     |         |
| 120       | 102   | 223       | 0.07     |         |
| 140       | 96    | 200       | 0.50     |         |
| 160       | 102   | 177       | 0.07     |         |
| 180       | 100   | 154       | 0.21     |         |
| 200       | 102   | 131       | 0.07     |         |
| 220       | 103   | 109       | 0.00     |         |
| 240       | 91    | 86        | 0.86     |         |
| 260       | 101   | 63        | 0.14     |         |
| 280       | 100   | 40        | 0.21     |         |
| 300       | 99    | 17        | 0.29     |         |

EAC%/day vs Orientation



Note: Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,  
 Watford, WD18 8YS

LR016.1 i2 Analytical 08/2017



Environmental Science

Client: Celtic enGlobe      Site Reference:      NGPH Arundel

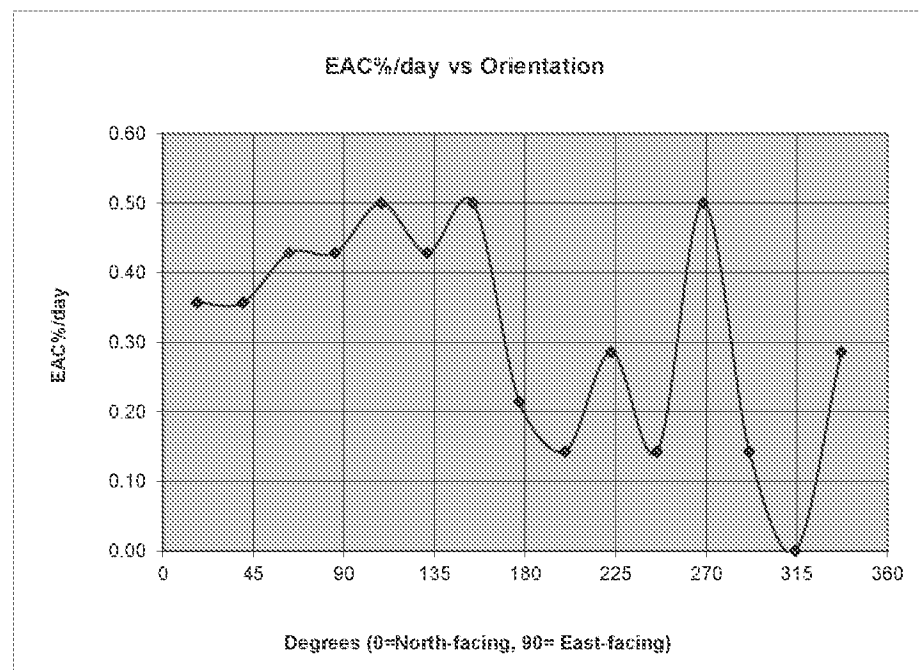
## Gauge Ref: EMP2

### Sticky Pad Data

Date On 06/07/2021 Date Off 20/07/2021 Days = 14

Clean = 196

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 96    | 337       | 0.29     |         |
| 40        | 100   | 314       | 0.00     |         |
| 60        | 98    | 291       | 0.14     |         |
| 80        | 93    | 269       | 0.50     |         |
| 100       | 98    | 246       | 0.14     |         |
| 120       | 96    | 223       | 0.29     |         |
| 140       | 98    | 200       | 0.14     |         |
| 160       | 97    | 177       | 0.21     |         |
| 180       | 93    | 154       | 0.50     |         |
| 200       | 94    | 131       | 0.43     |         |
| 220       | 93    | 109       | 0.50     |         |
| 240       | 94    | 86        | 0.43     |         |
| 260       | 94    | 63        | 0.43     |         |
| 280       | 95    | 40        | 0.36     |         |
| 300       | 95    | 17        | 0.36     |         |



**Note:** Cells coloured green are inputs. The rest are either constants or calculated values. The calculation is based on taking readings at 10mm intervals along the sticky pad.

**E2 Analytical Ltd.**  
**7 Woodshots Meadow**

LR016.1      I2 Analytical      08/2017

# Directional Dust Analysis Report



Environmental Science

Job No: 2188 / 21-88314 Sample No: 247059 / 1946193  
 Client: Celtic enGlobe Site Reference: NGPH Arundel

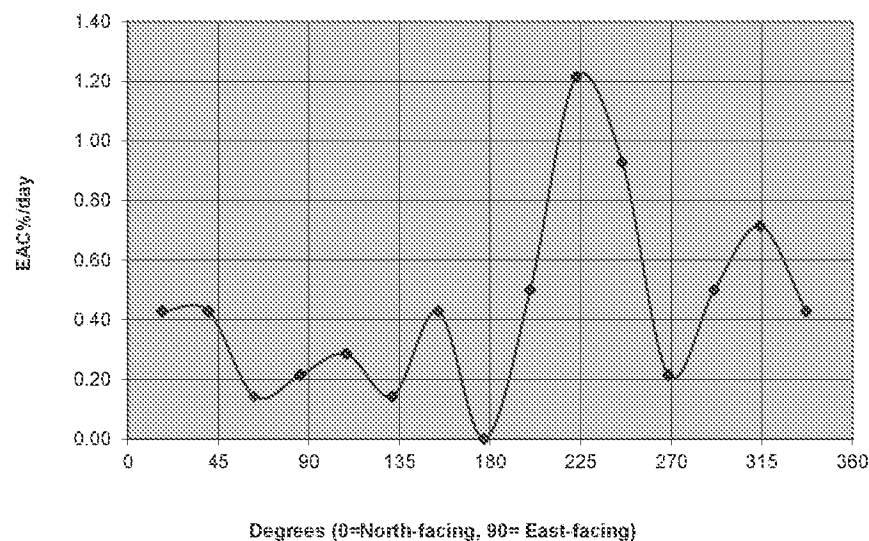
**Gauge Ref:** EMP3

## Sticky Pad Data

Date On: 06/07/2021 Date Off: 20/07/2021 Days = 14  
 Clean = 102

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 96    | 337       | 0.43     |         |
| 40        | 92    | 314       | 0.71     |         |
| 60        | 95    | 291       | 0.50     |         |
| 80        | 99    | 269       | 0.21     |         |
| 100       | 89    | 246       | 0.93     |         |
| 120       | 85    | 223       | 1.21     |         |
| 140       | 95    | 200       | 0.50     |         |
| 160       | 102   | 177       | 0.00     |         |
| 180       | 96    | 154       | 0.43     |         |
| 200       | 100   | 131       | 0.14     |         |
| 220       | 98    | 109       | 0.29     |         |
| 240       | 99    | 86        | 0.21     |         |
| 260       | 100   | 63        | 0.14     |         |
| 280       | 96    | 40        | 0.43     |         |
| 300       | 96    | 17        | 0.43     |         |

EAC%/day vs Orientation



**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,  
 Wootton Bassett, Wiltshire

LR016.1 i2 Analytical 08/2017

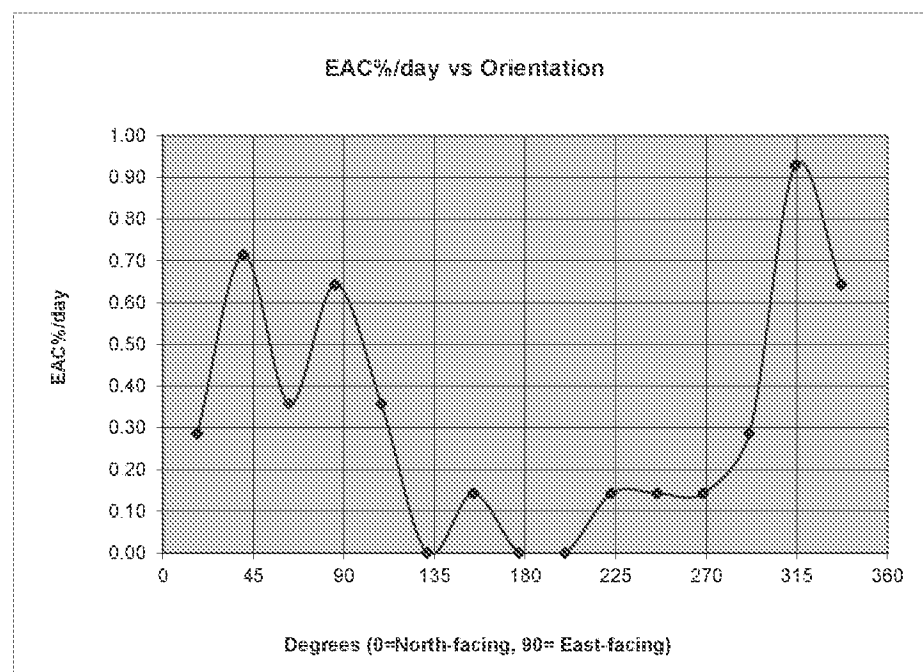


Environmental Science

Gauge Ref: EMP4

Date On 06/07/2021 Date Off 28/07/2021 Days = 14  
Clean = 132

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 93    | 337       | 0.64     |         |
| 40        | 89    | 314       | 0.93     |         |
| 60        | 98    | 291       | 0.29     |         |
| 80        | 100   | 269       | 0.14     |         |
| 100       | 100   | 246       | 0.14     |         |
| 120       | 100   | 223       | 0.14     |         |
| 140       | 102   | 200       | 0.00     |         |
| 160       | 102   | 177       | 0.00     |         |
| 180       | 100   | 154       | 0.14     |         |
| 200       | 102   | 131       | 0.00     |         |
| 220       | 97    | 109       | 0.36     |         |
| 240       | 93    | 86        | 0.64     |         |
| 260       | 97    | 63        | 0.36     |         |
| 280       | 92    | 40        | 0.71     |         |
| 300       | 98    | 17        | 0.29     |         |

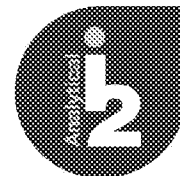


**E2 Analytical Ltd.**  
**7 Woodshots Meadow**

\_\_\_\_\_



# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-06-45-10:45:54 | 28/06/2021 | 30/07/2021 | 30/07/2021 | 06/08/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|                     |       |             |              |
|---------------------|-------|-------------|--------------|
| SAMPLING TIME (MIN) | 20160 | CLIENT SITE | NGPH Arundel |
| PO NUMBER           | 81997 | CLIENT CODE | C1820        |

## Matrix: Tenax TD Tube

| Determinand                         | Technique | LOD       | Accreditation | i2 Sample Number    |        |        |        |
|-------------------------------------|-----------|-----------|---------------|---------------------|--------|--------|--------|
|                                     |           |           |               | 235713              | 235714 | 235715 | 235716 |
|                                     |           |           |               | Sample Reference    | EMP1   | EMP2   | EMP4   |
|                                     |           |           |               | Pre Printed Barcode | 736809 | 736814 | 736821 |
| Benzene                             | T352      | 1.0 ng    | None          | 1.9                 | 6.3    | 18.1   | 24.8   |
| Benzene mg/m3                       | T352      | 0.0 mg/m3 | None          | 0.0002              | 0.0008 | 0.0022 | 0.0030 |
| Benzene ppb                         | T352      | 0.0 ppb   | None          | 0.0702              | 0.239  | 0.685  | 0.938  |
| Ethyl Benzene                       | T352      | 1.0 ng    | None          | 1.2                 | 2.2    | 6.8    | 4.5    |
| Ethyl Benzene mg/m3                 | T352      | 0.0 mg/m3 | None          | 0.0001              | 0.0002 | 0.0007 | 0.0005 |
| Ethyl Benzene ppb                   | T352      | 0.0 ppb   | None          | 0.0304              | 0.0540 | 0.168  | 0.113  |
| Toluene                             | T352      | 1.0 ng    | None          | 5.6                 | 12.4   | 38.3   | 38.8   |
| Toluene mg/m3                       | T352      | 0.0 mg/m3 | None          | 0.0006              | 0.0014 | 0.0043 | 0.0044 |
| Toluene ppb                         | T352      | 0.0 ppb   | None          | 0.186               | 0.371  | 1.15   | 1.16   |
| Total VOC (excluding Targets)       | T352      | 10.0 ng   | None          | 180                 | 200    | 490    | 360    |
| Total VOC (excluding Targets) mg/m3 | T352      | 0.0 mg/m3 | None          | 0.0202              | 0.0229 | 0.0558 | 0.0405 |
| m,p-Xylene                          | T352      | 1.0 ng    | None          | 5.5                 | 16.8   | 86.3   | 51.2   |
| m,p-Xylene mg/m3                    | T352      | 0.0 mg/m3 | None          | 0.0005              | 0.0020 | 0.0102 | 0.0060 |
| m,p-Xylene ppb                      | T352      | 0.0 ppb   | None          | 0.0745              | 0.229  | 1.17   | 0.696  |
| o-Xylene                            | T352      | 1.0 ng    | None          | 2.2                 | 5.8    | 27.5   | 16.1   |
| o-Xylene mg/m3                      | T352      | 0.0 mg/m3 | None          | 0.0003              | 0.0007 | 0.0032 | 0.0019 |
| o-Xylene ppb                        | T352      | 0.0 ppb   | None          | 0.0800              | 0.159  | 0.747  | 0.439  |

| Determinand                         | Technique | LOD       | Accreditation | i2 Sample Number    |           |
|-------------------------------------|-----------|-----------|---------------|---------------------|-----------|
|                                     |           |           |               | 235720              |           |
|                                     |           |           |               | Sample Reference    | Control 2 |
|                                     |           |           |               | Pre Printed Barcode | 1056307   |
| Benzene                             | T352      | 1.0 ng    | None          | < 1.0               |           |
| Benzene mg/m3                       | T352      | 0.0 mg/m3 | None          | < 0.00012           |           |
| Benzene ppb                         | T352      | 0.0 ppb   | None          | < 0.0075            |           |
| Ethyl Benzene                       | T352      | 1.0 ng    | None          | < 1.0               |           |
| Ethyl Benzene mg/m3                 | T352      | 0.0 mg/m3 | None          | < 0.00013           |           |
| Ethyl Benzene ppb                   | T352      | 0.0 ppb   | None          | < 0.0008            |           |
| Toluene                             | T352      | 1.0 ng    | None          | < 1.0               |           |
| Toluene mg/m3                       | T352      | 0.0 mg/m3 | None          | < 0.00013           |           |
| Toluene ppb                         | T352      | 0.0 ppb   | None          | < 0.0008            |           |
| Total VOC (excluding Targets)       | T352      | 10.0 ng   | None          | < 10.0              |           |
| Total VOC (excluding Targets) mg/m3 | T352      | 0.0 mg/m3 | None          | < 0.00013           |           |
| m,p-Xylene                          | T352      | 1.0 ng    | None          | < 1.0               |           |
| m,p-Xylene mg/m3                    | T352      | 0.0 mg/m3 | None          | < 0.00012           |           |
| m,p-Xylene ppb                      | T352      | 0.0 ppb   | None          | < 0.0008            |           |
| o-Xylene                            | T352      | 1.0 ng    | None          | < 1.0               |           |
| o-Xylene mg/m3                      | T352      | 0.0 mg/m3 | None          | < 0.00012           |           |
| o-Xylene ppb                        | T352      | 0.0 ppb   | None          | < 0.0008            |           |

| Technical Reviewer  | Role              |
|---------------------|-------------------|
| Mrs Kathryn Gleaves | Customer Services |

## Extra Testing Information

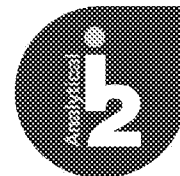
| Technique Code | Technique Name | Samples                                |
|----------------|----------------|----------------------------------------|
| T352           | AP02-1-GCMS-TD | 235713, 235714, 235715, 235716, 235720 |

| Testing Location                                                                                                                                      | Samples                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| All analysis was carried out at I2 Analytical (Poland), I2 Analytical Limited Sp z o.o, Oddział w Polsce, ul Pionierow 39, 41-711 Ruda Śląska, Poland | 235713, 235714, 235715, 235716, 235720 |

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.  
 Tests covered by this certificate were conducted in accordance with I2 Analytical's SOPs.  
 Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.  
 This is a simplified test report.  
 This certificate should not be reproduced, except in full, without the express permission of the laboratory.  
 Results in black are positive/detected results. Results in gray are below the LOD or have not been found.  
 LOD = Limit of Determination. This is the lowest reportable limit of the test.



# CERTIFICATE OF ANALYSIS



Environmental Science

|                     |            |            |            |            |
|---------------------|------------|------------|------------|------------|
| MULTI-SAMPLE        | REGISTERED | RECEIVED   | ANALYSIS   | ANALYSIS   |
| REPORT REFERENCE    | DATE       | DATE       | STARTED    | COMPLETE   |
| 2021-11-44-09:44:00 | 05/08/2021 | 05/08/2021 | 05/08/2021 | 11/08/2021 |

|                             |                     |
|-----------------------------|---------------------|
| LABORATORY                  | CUSTOMER            |
| i2 Analytical               | Celtic enGlobe      |
| Croxley Green Business Park | Columbus House      |
| 7 Woodshots Meadow          | Greenmeadow Springs |
| Watford                     | Tongwynlais         |
| WD18 8YS                    | Cardiff             |
|                             | CF15 7NE            |

|                         |            |             |              |
|-------------------------|------------|-------------|--------------|
| PO NUMBER               | 82008      | CLIENT SITE | NGPH Arundel |
| END DATE SAMPLED        | 03/08/2021 | CLIENT CODE | C1820        |
| DATE SAMPLED (DD/MM/YY) | 27/07/2021 |             |              |

## Matrix: Water

| Determinand             | Technique | LCD           | Accreditation | i2 Sample Number | 252974 | 252975 | 252976 | 252977 |
|-------------------------|-----------|---------------|---------------|------------------|--------|--------|--------|--------|
|                         |           |               |               | Sample Reference | EMP1   | EMP2   | EMP3   | EMP4   |
| Rate of Dust Deposition | T487      | 0.0 mg/m2/day | None          |                  | 210    | 44.5   | 56.8   | 132    |
| Total Solids (mass)     | T487      | 10.0 mg       | None          |                  | 59.5   | 12.6   | 16.1   | 37.3   |
| Total Solids (volume)   | T487      | 0.001 l       | None          |                  | 1.540  | 0.990  | 1.230  | 1.260  |

## Matrix: Sticky Pad

| Determinand      | Technique | LCD | Accreditation | i2 Sample Number | 252978                           | 252979                           | 252980                           | 252981                           |
|------------------|-----------|-----|---------------|------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
|                  |           |     |               | Sample Reference | EMP1                             | EMP2                             | EMP3                             | EMP4                             |
| Directional Dust | T488      | 0.0 | None          |                  | Not in Scope<br>For verification | Not in Scope<br>For verification | Not in Scope<br>For verification | Not in Scope<br>For verification |

|                     |                          |
|---------------------|--------------------------|
| Technical Reviewer  | Role                     |
| Mrs Jeanette Abbott | Customer Service Manager |

## Extra Testing Information

| Technique Code | Technique Name         | Samples                        |
|----------------|------------------------|--------------------------------|
| T487           | L004B-Grav             | 252974, 252975, 252976, 252977 |
| T488           | L016-Sticky Pad Reader | 252978, 252979, 252980, 252981 |

| Testing Location                                                                                                                                       | Samples                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| All analysis was carried out at i2 Analytical (Poland), i2 Analytical Limited Sp z o.o., Oddział w Polsce, ul Pionierow 39, 41-711 Ruda Slaska, Poland | 252974, 252975, 252976, 252977, 252978, 252979, 252980, 252981 |

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.  
 Tests covered by this certificate were conducted in accordance with i2 Analytical's SOPs.  
 Note: All assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement of uncertainty can be provided on request.  
 This is a simplified test report.  
 This certificate should not be reproduced, except in full, without the express permission of the laboratory.  
 Results in black are positive/detected results. Results in gray are below the LCD or have not been found.

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 Registered in England No.  
 4750390 VAT Reg. No. 821  
 0972 49

LOD = Limit of Determination. This is the lowest reportable limit of the test.



# Directional Dust Analysis Report



Environmental Science

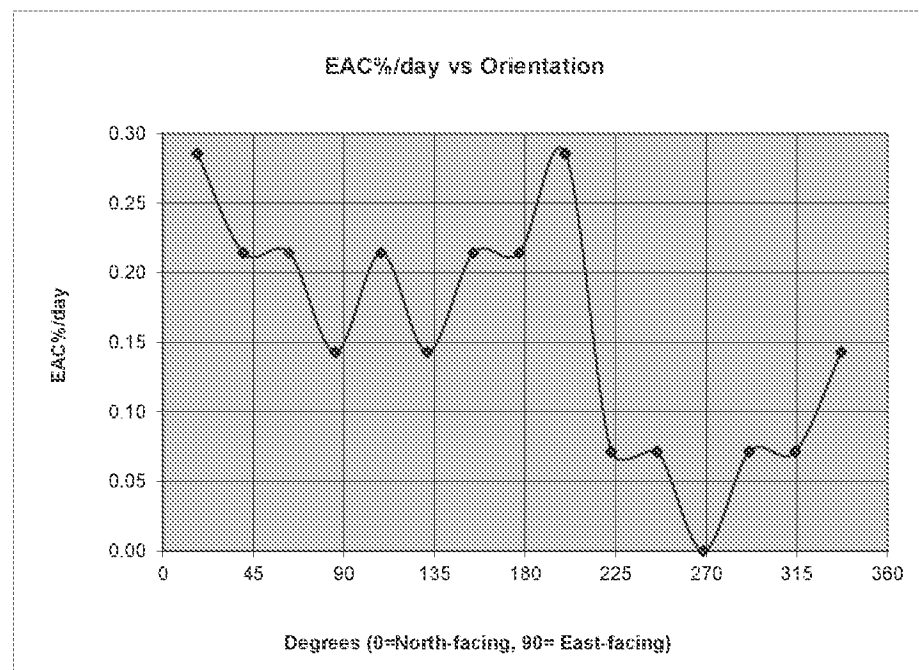
Job No: 2268 / 21-90956 Sample No: 252978 / 1962184  
 Client: Celtic enGlobe Site Reference: NGPH Arundel

Gauge Ref: EMPI

## Sticky Pad Data

Date On: 20/07/2021 Date Off: 03/08/2021 Days = 14  
 Clean = 97

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 95    | 337       | 0.14     |         |
| 40        | 96    | 314       | 0.07     |         |
| 60        | 96    | 291       | 0.07     |         |
| 80        | 97    | 269       | 0.00     |         |
| 100       | 96    | 246       | 0.07     |         |
| 120       | 96    | 223       | 0.07     |         |
| 140       | 93    | 200       | 0.29     |         |
| 160       | 94    | 177       | 0.21     |         |
| 180       | 94    | 154       | 0.21     |         |
| 200       | 95    | 131       | 0.14     |         |
| 220       | 94    | 109       | 0.21     |         |
| 240       | 95    | 86        | 0.14     |         |
| 260       | 94    | 63        | 0.21     |         |
| 280       | 94    | 40        | 0.21     |         |
| 300       | 93    | 17        | 0.29     |         |



Note: Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

i2 Analytical Ltd.  
 7 Woodshots Meadow,  
 Watford, WD18 8YS

LR016.1 i2 Analytical 08/2017

# Directional Dust Analysis Report



Environmental Science

Job No: 2268 / 21-90956 Sample No: 252979 / 1962185  
 Client: Celtic enGlobe Site Reference: NGPH Arundel

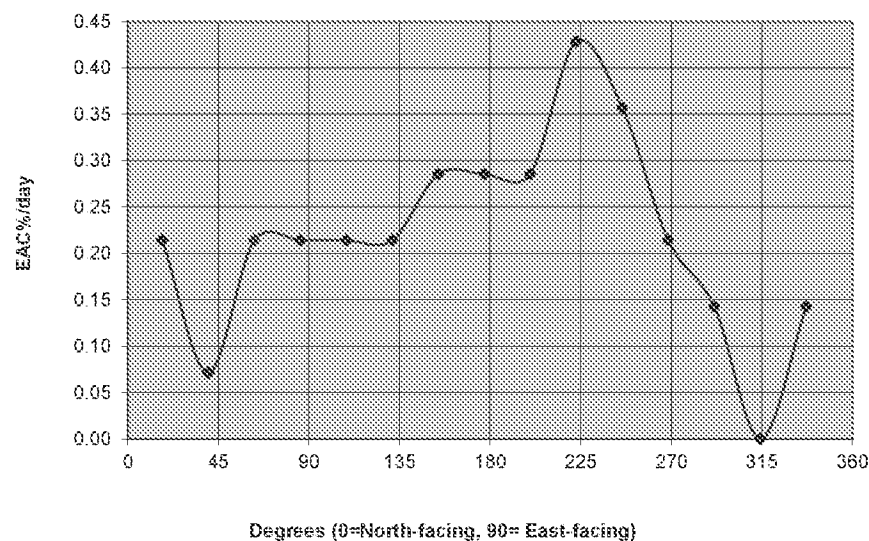
**Gauge Ref:** EMP2

## Sticky Pad Data

Date On: 20/07/2021 Date Off: 03/08/2021 Days = 14  
 Clean = 99

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 97    | 337       | 0.14     |         |
| 40        | 99    | 314       | 0.00     |         |
| 60        | 97    | 291       | 0.14     |         |
| 80        | 96    | 269       | 0.21     |         |
| 100       | 94    | 246       | 0.36     |         |
| 120       | 93    | 223       | 0.43     |         |
| 140       | 95    | 200       | 0.29     |         |
| 160       | 95    | 177       | 0.29     |         |
| 180       | 95    | 154       | 0.29     |         |
| 200       | 96    | 131       | 0.21     |         |
| 220       | 96    | 109       | 0.21     |         |
| 240       | 96    | 86        | 0.21     |         |
| 260       | 96    | 63        | 0.21     |         |
| 280       | 98    | 40        | 0.07     |         |
| 300       | 96    | 17        | 0.21     |         |

EAC%/day vs Orientation



**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

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 Watford, WD18 8YS

LR016.1 i2 Analytical 08/2017

# Directional Dust Analysis Report



Environmental Science

Job No: 2268 / 21-90956 Sample No: 252980 / 1962186  
 Client: Celtic enGlobe Site Reference: NGPH Arundel

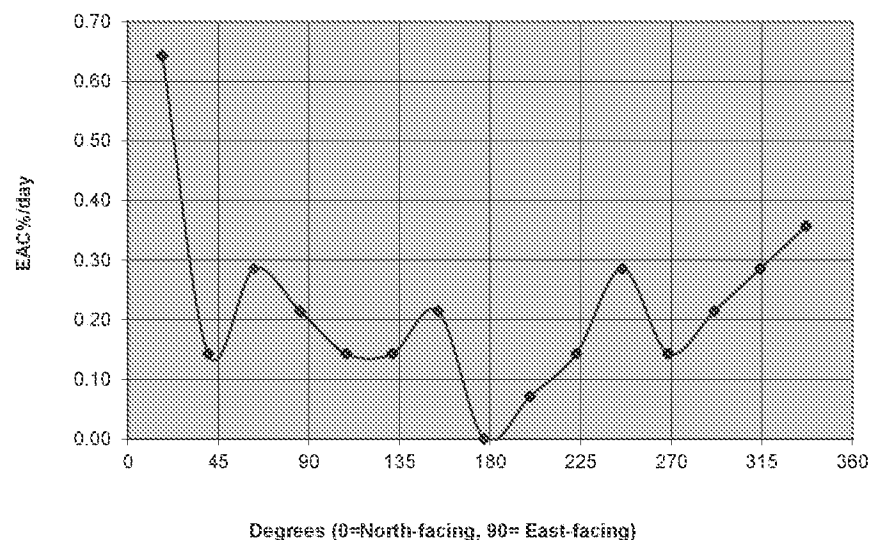
**Gauge Ref:** EMP3

## Sticky Pad Data

Date On: 20/07/2021 Date Off: 03/08/2021 Days = 14  
 Clean = 97

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 92    | 337       | 0.36     |         |
| 40        | 93    | 314       | 0.29     |         |
| 60        | 94    | 291       | 0.21     |         |
| 80        | 95    | 269       | 0.14     |         |
| 100       | 93    | 246       | 0.29     |         |
| 120       | 95    | 223       | 0.14     |         |
| 140       | 96    | 200       | 0.07     |         |
| 160       | 97    | 177       | 0.00     |         |
| 180       | 94    | 154       | 0.21     |         |
| 200       | 95    | 131       | 0.14     |         |
| 220       | 95    | 109       | 0.14     |         |
| 240       | 94    | 86        | 0.21     |         |
| 260       | 93    | 63        | 0.29     |         |
| 280       | 95    | 40        | 0.14     |         |
| 300       | 88    | 17        | 0.64     |         |

EAC%/day vs Orientation



**Note:** Cells coloured green are inputs. The rest are either constants or calculated values.  
 The calculation is based on taking readings at 20mm intervals along the sticky pad.

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 7 Woodshots Meadow,

LR016.1 i2 Analytical 08/2017

# Directional Dust Analysis Report



Job No: 2268 / 21-90956 Sample No: 252981 / 1962187

Client: Celtic enGlobe Site Reference: NGPH Arundel

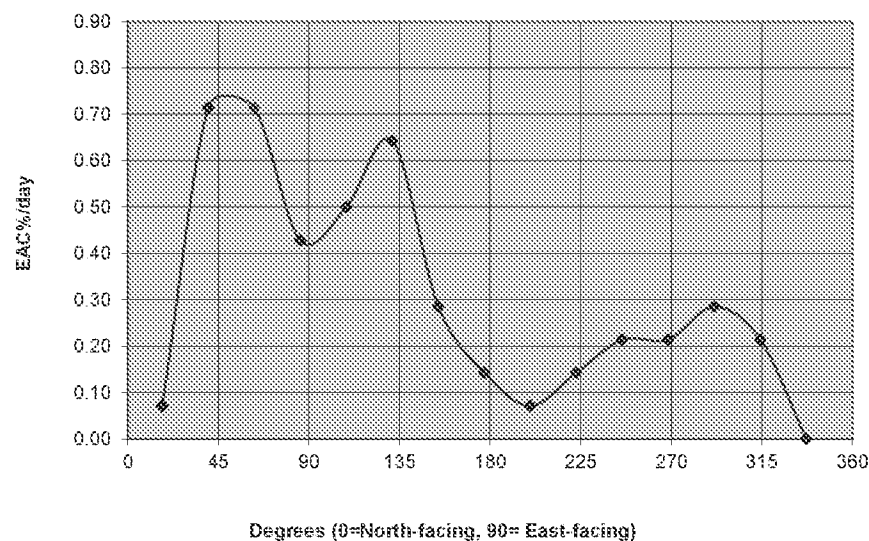
Gauge Ref: EMP4

## Sticky Pad Data

Date On: 20/07/2021 Date Off: 03/08/2021 Days = 14  
Clean = 96

| X Axis mm | Meter | Angle deg | EAC%/day | Comment |
|-----------|-------|-----------|----------|---------|
| 20        | 96    | 337       | 0.00     |         |
| 40        | 93    | 314       | 0.21     |         |
| 60        | 92    | 291       | 0.29     |         |
| 80        | 93    | 269       | 0.21     |         |
| 100       | 93    | 246       | 0.21     |         |
| 120       | 94    | 223       | 0.14     |         |
| 140       | 95    | 200       | 0.07     |         |
| 160       | 94    | 177       | 0.14     |         |
| 180       | 92    | 154       | 0.29     |         |
| 200       | 87    | 131       | 0.64     |         |
| 220       | 89    | 109       | 0.50     |         |
| 240       | 90    | 86        | 0.43     |         |
| 260       | 86    | 63        | 0.71     |         |
| 280       | 86    | 40        | 0.71     |         |
| 300       | 95    | 17        | 0.07     |         |

EAC%/day vs Orientation



Note: Cells coloured green are inputs. The rest are either constants or calculated values.  
The calculation is based on taking readings at 20mm intervals along the sticky pad.

D Analytical Ltd.  
7 Woodshots Meadow,  
Watford, WD18 8YS

LR016.1 D Analytical 08/2017



## AIRBORNE FIBRE CONCENTRATION RECORDS

| <b>Page 1 of 3</b>                                                                                                                                 |           | <b>File / Project number:</b><br>J030960 AMENDED Issue 1 |         | <b>Date of sampling:</b> 30 Jun 2021                                                   |              | <b>Date of analysis:</b> 30 Jun 2021 |                       |                           |                         |                             |                         |            |            |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------|---------|----------------------------------------------------------------------------------------|--------------|--------------------------------------|-----------------------|---------------------------|-------------------------|-----------------------------|-------------------------|------------|------------|---------------------------------|
|                                                                                                                                                    |           |                                                          |         | <b>Date issued:</b> 1 Jul 2021                                                         |              | <b>Certificate number:</b> CM01      |                       |                           |                         |                             |                         |            |            |                                 |
| <b>Client Name &amp; Address:</b><br>Celtic Technologies & Biogenie<br>Columbus House<br>Greenmeadow Springs<br>Tongwynlais<br>Cardiff<br>CF15 7NE |           |                                                          |         | <b>Site Address/Location:</b><br>Arundel Gas Works<br>Ford Road<br>Arundel<br>BN18 9DX |              |                                      |                       |                           |                         |                             |                         |            |            |                                 |
|                                                                                                                                                    |           |                                                          |         | <b>Location Slides Counted:</b><br>Site                                                |              |                                      |                       |                           |                         |                             |                         |            |            |                                 |
| Location                                                                                                                                           | Sample No | Sample Type                                              | Head No | Pump No                                                                                | Time Started | Time Stopped                         | Sample Duration (min) | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow Rate (L/min) | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm <sup>3</sup> |
| Monitoring point A                                                                                                                                 | CM001998  | Reassurance                                              | 858     | H28                                                                                    | 10:05        | 10:58                                | 53                    | 16.0                      | 16.0                    | 16.0                        | 848                     | 1          | 120        | <0.01                           |
| Monitoring point B                                                                                                                                 | CM001999  | Reassurance                                              | 855     | H27                                                                                    | 10:07        | 10:59                                | 52                    | 16.0                      | 16.0                    | 16.0                        | 832                     | 1.5        | 120        | <0.01                           |
| Monitoring point C                                                                                                                                 | CM002000  | Reassurance                                              | 854     | H12                                                                                    | 10:08        | 11:00                                | 52                    | 16.0                      | 16.0                    | 16.0                        | 832                     | 1.5        | 120        | <0.01                           |
| Monitoring point D                                                                                                                                 | CM002001  | Reassurance                                              | 859     | H15                                                                                    | 10:11        | 11:02                                | 51                    | 16.0                      | 16.0                    | 16.0                        | 816                     | 1          | 120        | <0.01                           |
| Canteen                                                                                                                                            | CM002002  | Reassurance                                              | 856     | H6                                                                                     | 10:14        | 11:20                                | 66                    | 8.0                       | 8.0                     | 8.0                         | 528                     | 2          | 200        | <0.01                           |
| Monitoring point A                                                                                                                                 | CM002003  | Reassurance                                              | 858     | H28                                                                                    | 12:44        | 13:41                                | 57                    | 16.0                      | 16.0                    | 16.0                        | 912                     | 1          | 110        | <0.01                           |
| Monitoring point B                                                                                                                                 | CM002004  | Reassurance                                              | 855     | H27                                                                                    | 12:46        | 13:40                                | 54                    | 16.0                      | 16.0                    | 16.0                        | 864                     | 1.5        | 120        | <0.01                           |
| Monitoring point C                                                                                                                                 | CM002005  | Reassurance                                              | 854     | H12                                                                                    | 12:47        | 13:37                                | 50                    | 16.0                      | 16.0                    | 16.0                        | 800                     | 1.5        | 120        | <0.01                           |

## AIRBORNE FIBRE CONCENTRATION RECORDS

| Page 2 of 3          |           | File / Project number:<br>J030960/CM01 AMENDED Issue 1 |         |         |              | Date of sampling: 30 Jun 2021 |                       |                           |                         | Date of analysis: 30 Jun 2021 |                         |            |            |                                 |
|----------------------|-----------|--------------------------------------------------------|---------|---------|--------------|-------------------------------|-----------------------|---------------------------|-------------------------|-------------------------------|-------------------------|------------|------------|---------------------------------|
|                      |           |                                                        |         |         |              | Date issued: 1 Jul 2021       |                       |                           |                         | Certificate number: CM01      |                         |            |            |                                 |
| Location             | Sample No | Sample Type                                            | Head No | Pump No | Time Started | Time Stopped                  | Sample Duration (min) | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow Rate (L/min)   | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm <sup>3</sup> |
| Monitoring point D   | CM002006  | Reassurance                                            | 859     | H15     | 12:48        | 13:36                         | 48                    | 16.0                      | 16.0                    | 16.0                          | 768                     | 1          | 130        | <0.01                           |
| Operator Kevin Fagan | CM002007  | Reassurance                                            | 856     | H6      | 12:50        | 13:38                         | 48                    | 10.0                      | 10.0                    | 10.0                          | 480                     | 2          | 200        | <0.01                           |
| Drying room          | CM002008  | Reassurance                                            | 852     | H28     | 13:59        | 14:45                         | 46                    | 16.0                      | 16.0                    | 16.0                          | 736                     | 1.5        | 140        | <0.01                           |
| Field Blank          | CM002009  | FB                                                     | 860     | N/A     | N/A          | N/A                           | N/A                   | N/A                       | N/A                     | N/A                           | N/A                     | N/A        | N/A        | N/A                             |

All testing is in accordance with HSE Guidance notes HSG 248 & Enquin Asbestos Procedures Manual Section 2  
The number of fields to be counted to obtain a level of accuracy of <0.01 fibres/ml - cm<sup>3</sup> of air is 96000/(sample volume in litres)

Number of measurements undertaken: 12

Report Type: Final AMENDED

Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation

Location of work area: Reassurance air testing at four perimeter monitoring locations and welfare facilities. Static air test in excavator cab

### Comments:

All results satisfactory  
Working practices good

Signed Analyst  
Print Name: Ian Price

1 Ringside Business Centre, Heol Y Rhosog, Wentloog, Cardiff, CF3 2EW

|                                       |                         |                                     |                               |
|---------------------------------------|-------------------------|-------------------------------------|-------------------------------|
| Page 3 of 3                           | File / Project number:  | Date of sampling: 30 Jun 2021       | Date of analysis: 30 Jun 2021 |
|                                       | J030960 AMENDED Issue 1 | Date issued: 1 Jul 2021             | Certificate number: CM01      |
| NPL Test Slide Number                 | 839                     | 5 sets of lines visible             | Yes                           |
| Flowmeter Number                      | 1021.                   | Flowmeter Calibration Factor        | 1.0                           |
| Stage Micrometer Number               | 962                     | Stage Micrometer Calibration Factor | 1.00                          |
| Thermometer Barometer Number          | 00969./00969            | Barometric Pressure mB **           | 1017mb                        |
| ** Correction Factor If Outside Limit | 1.0                     | Temperature Reading °C **           | 16                            |
| Microscope Number                     | 674                     | Measured Graticule Diameter /µm     | 100                           |
| Timepiece Number                      | D - Timepiece           | Corrected Graticule Diameter /µm    | 100                           |

**Signed Analyst**  
**Print Name: Ian Price**

## AIRBORNE FIBRE CONCENTRATION RECORDS

|             |                                   |                                                           |                                                           |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 1 of 3 | File / Project number:<br>J030960 | Date of sampling: 07 Jul 2021<br>Date issued: 07 Jul 2021 | Date of analysis: 07 Jul 2021<br>Certificate number: CM02 |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

| Client Name & Address:<br>Celtic Technologies & Biogenie<br>Columbus House<br>Greenmeadow Springs<br>Tongwynlais<br>Cardiff<br>CF15 7NE |           |             |         |         |              |              | Site Address/Location:<br>Arundel Gas Works<br>Ford Road<br>Arundel<br>BN18 9DX |                           |                         |                        | Location Slides Counted:<br>Site |            |            |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|---------|---------|--------------|--------------|---------------------------------------------------------------------------------|---------------------------|-------------------------|------------------------|----------------------------------|------------|------------|---------------------|
| Location                                                                                                                                | Sample No | Sample Type | Head No | Pump No | Time Started | Time Stopped | Sample Duration (min)                                                           | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow (L/min) | Volume Sampled (litres)          | No. Fibres | No. Fields | Conc. Fibres/ml cm² |
| Canteen                                                                                                                                 | CM002013  | Reassurance | 854     | H6      | 11:26        | 12:50        | 84                                                                              | 10.0                      | 10.0                    | 10.0                   | 840                              | 1          | 200        | <0.01               |
| Monitoring point A                                                                                                                      | CM002014  | Reassurance | 858     | H15     | 11:29        | 12:48        | 79                                                                              | 16.0                      | 16.0                    | 16.0                   | 1264                             | 1          | 100        | <0.01               |
| Monitoring point B                                                                                                                      | CM002015  | Reassurance | 852     | H12     | 11:30        | 12:46        | 76                                                                              | 16.0                      | 16.0                    | 16.0                   | 1216                             | 1          | 100        | <0.01               |
| Monitoring point C                                                                                                                      | CM002016  | Reassurance | 856     | H27     | 11:33        | 12:47        | 74                                                                              | 16.0                      | 16.0                    | 16.0                   | 1184                             | 1          | 100        | <0.01               |
| Monitoring point D                                                                                                                      | CM002017  | Reassurance | 855     | H28     | 11:34        | 12:48        | 74                                                                              | 16.0                      | 16.0                    | 16.0                   | 1184                             | 1          | 100        | <0.01               |
| Drying room                                                                                                                             | CM002018  | Reassurance | 852     | H15     | 13:27        | 14:13        | 46                                                                              | 16.0                      | 16.0                    | 16.0                   | 736                              | 1          | 150        | <0.01               |
| Monitoring point A                                                                                                                      | CM002019  | Reassurance | 854     | H28     | 13:29        | 14:13        | 44                                                                              | 16.0                      | 16.0                    | 16.0                   | 704                              | 1          | 150        | <0.01               |
| Monitoring point B                                                                                                                      | CM002020  | Reassurance | 855     | H27     | 14:18        | 14:52        | 34                                                                              | 16.0                      | 16.0                    | 16.0                   | 544                              | 1          | 200        | <0.01               |

|             |                                        |                                                           |                                                           |
|-------------|----------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 2 of 3 | File / Project number:<br>J030960/CM02 | Date of sampling: 07 Jul 2021<br>Date issued: 07 Jul 2021 | Date of analysis: 07 Jul 2021<br>Certificate number: CM02 |
|-------------|----------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

| Location                              | Sample No | Sample Type | Head No | Pump No | Time Started | Time Stopped | Sample Duration (min) | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow Rate (L/min) | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm <sup>3</sup> |
|---------------------------------------|-----------|-------------|---------|---------|--------------|--------------|-----------------------|---------------------------|-------------------------|-----------------------------|-------------------------|------------|------------|---------------------------------|
| Monitoring point C                    | CM002021  | Reassurance | 858     | H15     | 14:20        | 14:53        | 33                    | 16.0                      | 16.0                    | 16.0                        | 528                     | 6.5        | 200        | <0.01                           |
| Monitoring point D                    | CM002022  | Reassurance | 859     | H6      | 14:21        | 14:54        | 33                    | 16.0                      | 16.0                    | 16.0                        | 528                     | 1          | 200        | <0.01                           |
| Cab of machine operator Aaron Dickens | CM002023  | Reassurance | 854     | H12     | 14:22        | 14:55        | 33                    | 16.0                      | 16.0                    | 16.0                        | 528                     | 1          | 200        | <0.01                           |
| Field Blank                           | CM002024  | FB          | 860     | N/A     | N/A          | N/A          | 0                     | N/A                       | N/A                     | 0.0                         | 0                       | N/A        | N/A        | N/A                             |

**All testing is in accordance with HSE Guidance notes HSG 248 & Enquin Asbestos Procedures Manual Section 2**  
**The number of fields to be counted to obtain a level of accuracy of <0.01 fibres/ml - cm<sup>3</sup> of air is 96000/(sample volume in litres)**

Number of measurements undertaken: 12      Report Type: Final

**Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation**

**Location of work area:** Reassurance air testing at four perimeter monitoring locations, drying room, canteen and within cab of working excavator

**Comments:**  
 All air test results satisfactory  
 Good working practices to minimise dust release

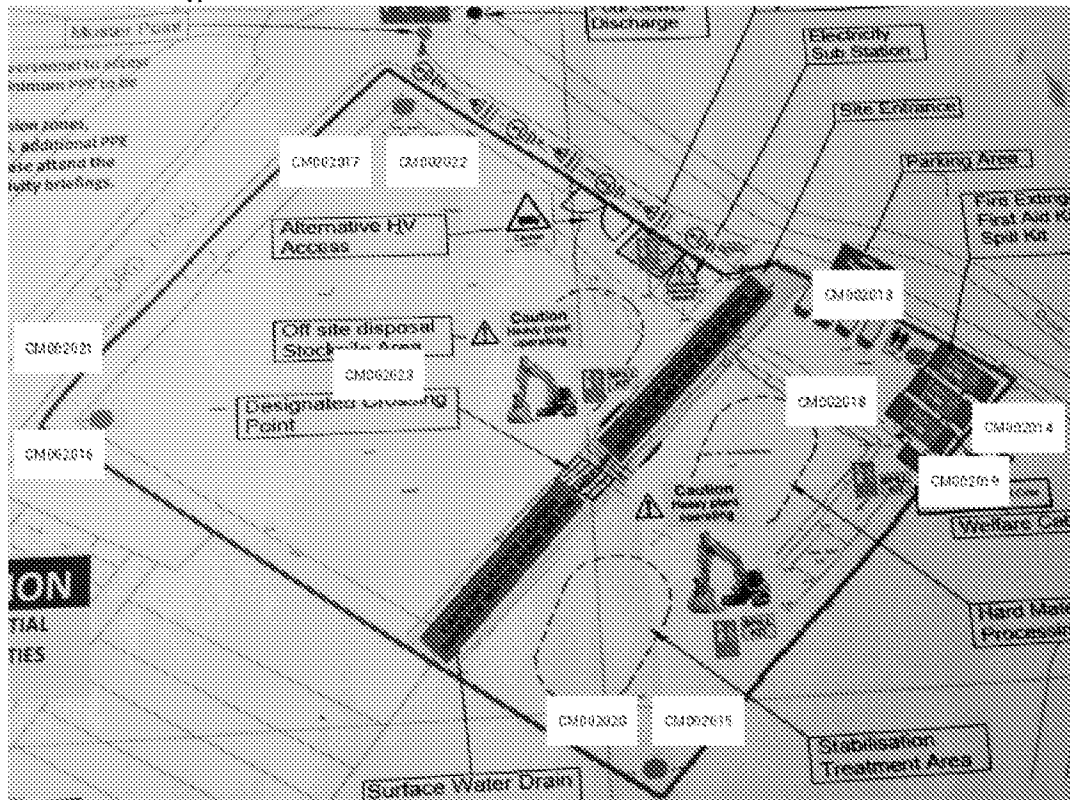
Signed Analyst  
 Print Name: Ian Price

## AIRBORNE FIBRE CONCENTRATION RECORDS

|             |                                   |                                                           |                                                           |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 3 of 3 | File / Project number:<br>J030960 | Date of sampling: 07 Jul 2021<br>Date issued: 07 Jul 2021 | Date of analysis: 07 Jul 2021<br>Certificate number: CM02 |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

|                                       |               |                                        |        |
|---------------------------------------|---------------|----------------------------------------|--------|
| NPL Test Slide Number                 | 839           | 5 sets of lines visible                | Yes    |
| Flowmeter Number                      | 1821          | Flowmeter Calibration Factor           | 1.0    |
| Stage Micrometer Number               | 962           | Stage Micrometer Calibration Factor    | 1.00   |
| Thermometer/Barometer Number          | 00969./00969  | Barometric Pressure mB **              | 1024mb |
| ** Correction Factor If Outside Limit | 1.0           | Temperature Reading °C **              | 21     |
| Microscope Number                     | 674           | Measured Graticule Diameter / $\mu$ m  | 100    |
| Timepiece Number                      | D - Timepiece | Corrected Graticule Diameter / $\mu$ m | 100    |

Diagram (Clearance / Reference only)



Signed Analyst  
Print Name: Ian Price

## AIRBORNE FIBRE CONCENTRATION RECORDS

| <b>Page 1 of 3</b>                                                                                                                                 |           | <b>File / Project number:</b><br>J030960 AMENDED Issue 1 |         | <b>Date of sampling:</b> 16 Jul 2021                                                   |              | <b>Date of analysis:</b> 16 Jul 2021 |                       |                                         |                         |                             |                         |            |            |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------|---------|----------------------------------------------------------------------------------------|--------------|--------------------------------------|-----------------------|-----------------------------------------|-------------------------|-----------------------------|-------------------------|------------|------------|---------------------------------|
|                                                                                                                                                    |           |                                                          |         | <b>Date issued:</b> 22 Jul 2021                                                        |              | <b>Certificate number:</b> CM03      |                       |                                         |                         |                             |                         |            |            |                                 |
| <b>Client Name &amp; Address:</b><br>Celtic Technologies & Biogenie<br>Columbus House<br>Greenmeadow Springs<br>Tongwynlais<br>Cardiff<br>CF15 7NE |           |                                                          |         | <b>Site Address/Location:</b><br>Arundel Gas Works<br>Ford Road<br>Arundel<br>BN18 9DX |              |                                      |                       | <b>Location Slides Counted:</b><br>Site |                         |                             |                         |            |            |                                 |
| Location                                                                                                                                           | Sample No | Sample Type                                              | Head No | Pump No                                                                                | Time Started | Time Stopped                         | Sample Duration (min) | Initial Flow rate (L/min)               | Final Flow Rate (L/min) | Corrected Flow Rate (L/min) | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm <sup>3</sup> |
| Canteen                                                                                                                                            | CM002025  | Reassurance                                              | 854     | H27                                                                                    | 09:24        | 09:57                                | 33                    | 16.0                                    | 16.0                    | 16.0                        | 528                     | 1          | 200        | <0.01                           |
| Monitoring point A                                                                                                                                 | CM002026  | Reassurance                                              | 858     | H15                                                                                    | 09:24        | 09:57                                | 33                    | 16.0                                    | 16.0                    | 16.0                        | 528                     | 1          | 200        | <0.01                           |
| Monitoring point B                                                                                                                                 | CM002027  | Reassurance                                              | 859     | H12                                                                                    | 09:25        | 09:58                                | 33                    | 16.0                                    | 16.0                    | 16.0                        | 528                     | 3          | 200        | <0.01                           |
| Monitoring point C                                                                                                                                 | CM002028  | Reassurance                                              | 852     | H28                                                                                    | 09:26        | 09:59                                | 33                    | 16.0                                    | 16.0                    | 16.0                        | 528                     | 1          | 200        | <0.01                           |
| Monitoring point D                                                                                                                                 | CM002029  | Reassurance                                              | 855     | H6                                                                                     | 09:27        | 10:00                                | 33                    | 16.0                                    | 16.0                    | 16.0                        | 528                     | 2          | 200        | <0.01                           |
| Drying room                                                                                                                                        | CM002030  | Reassurance                                              | 854     | H27                                                                                    | 11:04        | 11:47                                | 43                    | 16.0                                    | 16.0                    | 16.0                        | 688                     | 2.5        | 200        | <0.01                           |
| Monitoring point A                                                                                                                                 | CM002031  | Reassurance                                              | 858     | H15                                                                                    | 11:04        | 11:47                                | 43                    | 16.0                                    | 16.0                    | 16.0                        | 688                     | 1          | 200        | <0.01                           |
| Monitoring point B                                                                                                                                 | CM002032  | Reassurance                                              | 859     | H12                                                                                    | 11:05        | 11:48                                | 43                    | 16.0                                    | 16.0                    | 16.0                        | 688                     | 3          | 200        | <0.01                           |

## AIRBORNE FIBRE CONCENTRATION RECORDS

| Page 2 of 3        |           | File / Project number:<br>J030960/CM03 AMENDED Issue 1 |         |         |              |              | Date of sampling: 16 Jul 2021 |                           |                         |                             | Date of analysis: 16 Jul 2021 |            |            |                     |
|--------------------|-----------|--------------------------------------------------------|---------|---------|--------------|--------------|-------------------------------|---------------------------|-------------------------|-----------------------------|-------------------------------|------------|------------|---------------------|
|                    |           |                                                        |         |         |              |              | Date issued: 22 Jul 2021      |                           |                         |                             | Certificate number: CM03      |            |            |                     |
| Location           | Sample No | Sample Type                                            | Head No | Pump No | Time Started | Time Stopped | Sample Duration (min)         | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow Rate (L/min) | Volume Sampled (litres)       | No. Fibres | No. Fields | Conc. Fibres/ml cm³ |
| Monitoring point C | CM002033  | Reassurance                                            | 852     | H28     | 11:06        | 11:49        | 43                            | 16.0                      | 16.0                    | 16.0                        | 688                           | 2          | 200        | <0.01               |
| Monitoring point D | CM002034  | Reassurance                                            | 855     | H6      | 11:07        | 11:51        | 44                            | 16.0                      | 16.0                    | 16.0                        | 704                           | 3          | 200        | <0.01               |
| Field Blank        | CM002035  | FB                                                     | 860     | N/A     | N/A          | N/A          | N/A                           | N/A                       | N/A                     | N/A                         | N/A                           | N/A        | N/A        | N/A                 |

**All testing is in accordance with HSE Guidance notes HSG 248 & Enquin Asbestos Procedures Manual Section 2**  
**The number of fields to be counted to obtain a level of accuracy of <0.01 fibres/ml - cm<sup>3</sup> of air is 96000/(sample volume in litres)**

Number of measurements undertaken: 11

Report Type: Final AMENDED

**Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation**

**Location of work area: Reassurance air testing at perimeter monitoring locations, canteen, drying room and in cab of excavator**

### Comments:

All air tests results were satisfactory  
 Work methods suitable and satisfactory with regard to dust suppression

**Signed Analyst**  
**Print Name: Ian Price**

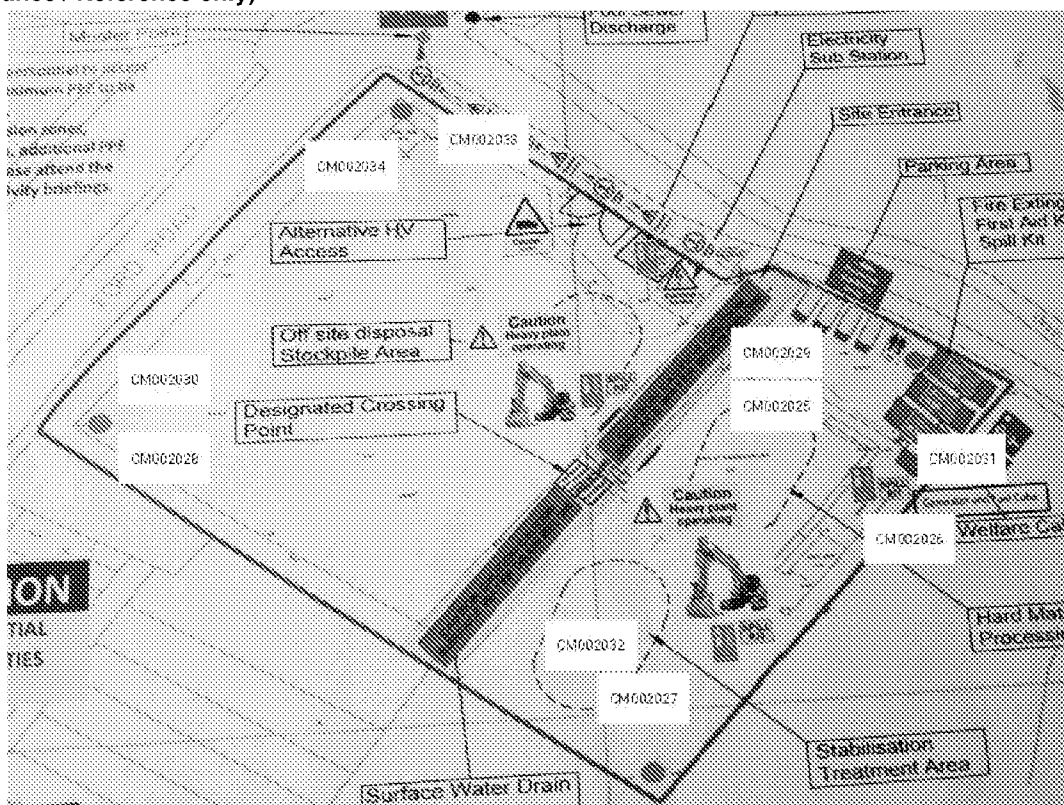


## AIRBORNE FIBRE CONCENTRATION RECORDS

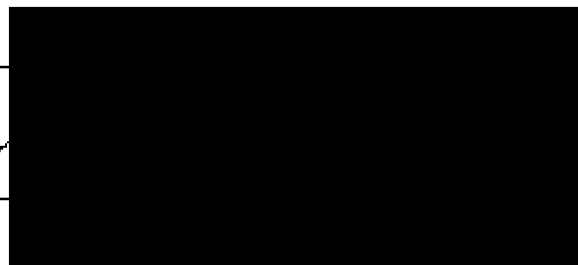
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|-------------|---------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 3 of 3 | File / Project number:<br>J030960 AMENDED Issue 1 | Date of sampling: 16 Jul 2021<br>Date issued: 22 Jul 2021 | Date of analysis: 16 Jul 2021<br>Certificate number: CM03 |
|-------------|---------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

|                                       |               |                                     |        |
|---------------------------------------|---------------|-------------------------------------|--------|
| NPL Test Slide Number                 | 839           | 5 sets of lines visible             | Yes    |
| Flowmeter Number                      | 1021.         | Flowmeter Calibration Factor        | 1.0    |
| Stage Micrometer Number               | 962           | Stage Micrometer Calibration Factor | 1.00   |
| Thermometer Barometer Number          | 00969./00969  | Barometric Pressure mB **           | 1022mb |
| ** Correction Factor If Outside Limit | 1.0           | Temperature Reading °C **           | 26     |
| Microscope Number                     | 674           | Measured Graticule Diameter /µm     | 100    |
| Timepiece Number                      | D - Timepiece | Corrected Graticule Diameter /µm    | 100    |

### Diagram (Clearance / Reference only)



Signed Analyst  
Print Name: Ian Price



## AIRBORNE FIBRE CONCENTRATION RECORDS

|             |                                   |                                                           |                                                           |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 1 of 3 | File / Project number:<br>J030960 | Date of sampling: 20 Jul 2021<br>Date issued: 20 Jul 2021 | Date of analysis: 20 Jul 2021<br>Certificate number: CM04 |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

| Client Name & Address:<br>Celtic Technologies & Biogenie<br>Columbus House<br>Greenmeadow Springs<br>Tongwynlais<br>Cardiff<br>CF15 7NE |           |             |         |         |              |              | Site Address/Location:<br>Arundel Gas Works<br>Ford Road<br>Arundel<br>BN18 9DX |                           |                         |                        | Location Slides Counted:<br>Site |                         |            |            |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------|---------|---------|--------------|--------------|---------------------------------------------------------------------------------|---------------------------|-------------------------|------------------------|----------------------------------|-------------------------|------------|------------|---------------------|
| Location                                                                                                                                | Sample No | Sample Type | Head No | Pump No | Time Started | Time Stopped | Sample Duration (min)                                                           | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow (L/min) | Rate                             | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm² |
| Canteen                                                                                                                                 | CM002036  | Reassurance | 854     | H27     | 09:24        | 09:57        | 33                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 528                     | 1          | 200        | <0.01               |
| Drying room                                                                                                                             | CM002037  | Reassurance | 858     | H15     | 09:24        | 09:57        | 33                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 528                     | 3          | 200        | <0.01               |
| Monitoring point A                                                                                                                      | CM002038  | Reassurance | 854     | H27     | 11:02        | 12:16        | 74                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 1184                    | 1          | 200        | <0.01               |
| Monitoring point B                                                                                                                      | CM002039  | Reassurance | 858     | H15     | 11:03        | 12:17        | 74                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 1184                    | 1          | 200        | <0.01               |
| Monitoring point C                                                                                                                      | CM002040  | Reassurance | 855     | H6      | 11:03        | 12:18        | 75                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 1200                    | 1          | 200        | <0.01               |
| Monitoring point D                                                                                                                      | CM002041  | Reassurance | 852     | H26     | 11:07        | 14:59        | 223                                                                             | 16.0                      | 16.0                    | 16.0                   |                                  | 3568                    | 2          | 200        | <0.01               |
| Monitoring point A                                                                                                                      | CM002042  | Reassurance | 854     | H27     | 14:26        | 15:09        | 43                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 688                     | 4.5        | 200        | <0.01               |
| Monitoring point B                                                                                                                      | CM002043  | Reassurance | 858     | H15     | 14:27        | 15:10        | 43                                                                              | 16.0                      | 16.0                    | 16.0                   |                                  | 688                     | 3          | 200        | <0.01               |

## AIRBORNE FIBRE CONCENTRATION RECORDS

|             |                                        |                                                           |                                                           |
|-------------|----------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 2 of 3 | File / Project number:<br>J030960/CM04 | Date of sampling: 20 Jul 2021<br>Date issued: 20 Jul 2021 | Date of analysis: 20 Jul 2021<br>Certificate number: CM04 |
|-------------|----------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

| Location                      | Sample No | Sample Type | Head No | Pump No | Time Started | Time Stopped | Sample Duration (min) | Initial Flow rate (L/min) | Final Flow Rate (L/min) | Corrected Flow Rate (L/min) | Volume Sampled (litres) | No. Fibres | No. Fields | Conc. Fibres/ml cm <sup>3</sup> |
|-------------------------------|-----------|-------------|---------|---------|--------------|--------------|-----------------------|---------------------------|-------------------------|-----------------------------|-------------------------|------------|------------|---------------------------------|
| Monitoring point C            | CM002044  | Reassurance | 859     | H12     | 14:28        | 15:11        | 43                    | 16.0                      | 16.0                    | 16.0                        | 688                     | 2          | 200        | <0.01                           |
| Monitoring point B            | CM002045  | Reassurance | 852     | H28     | 14:29        | 15:12        | 43                    | 16.0                      | 16.0                    | 16.0                        | 688                     | 1          | 200        | <0.01                           |
| Cab of operator Aaron Dickens | CM002046  | Reassurance | 855     | H6      | 14:31        | 15:12        | 41                    | 16.0                      | 16.0                    | 16.0                        | 656                     | 5          | 200        | <0.01                           |
| Field Blank                   | CM002047  | FB          | 860     | N/A     | N/A          | N/A          | 0                     | N/A                       | N/A                     | 0.0                         | 0                       | N/A        | N/A        | N/A                             |

All testing is in accordance with HSE Guidance notes HSG 248 & Enquin Asbestos Procedures Manual Section 2  
The number of fields to be counted to obtain a level of accuracy of <0.01 fibres/ml - cm<sup>3</sup> of air is 96000/(sample volume in litres)

Number of measurements undertaken: 12 Report Type: Final

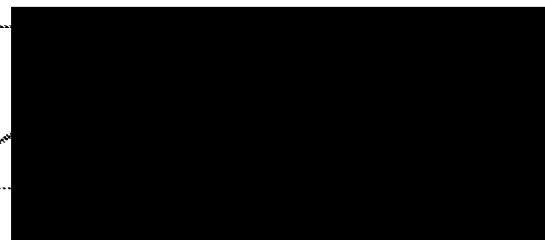
Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation

Location of work area: Reassurance air testing at perimeter monitoring locations, canteen, drying room and in cab of excavator

### Comments:

All air tests gave satisfactory results  
Dust suppression methods suitable and adequate

Signed Analyst  
Print Name: Ian Price

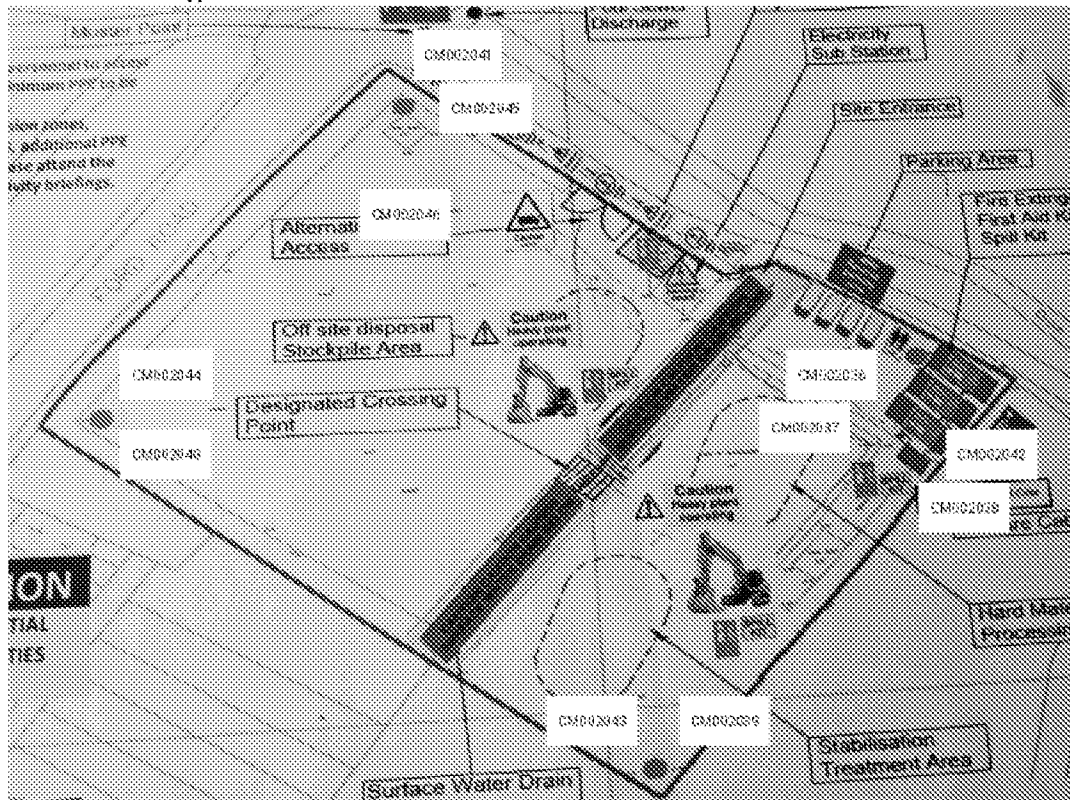


## AIRBORNE FIBRE CONCENTRATION RECORDS

|             |                                   |                                                           |                                                           |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Page 3 of 3 | File / Project number:<br>J030960 | Date of sampling: 20 Jul 2021<br>Date issued: 20 Jul 2021 | Date of analysis: 20 Jul 2021<br>Certificate number: CM04 |
|-------------|-----------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|

|                                       |               |                                     |        |
|---------------------------------------|---------------|-------------------------------------|--------|
| NPL Test Slide Number                 | 839           | 5 sets of lines visible             | Yes    |
| Flowmeter Number                      | 1821          | Flowmeter Calibration Factor        | 1.0    |
| Stage Micrometer Number               | 962           | Stage Micrometer Calibration Factor | 1.00   |
| Thermometer Barometer Number          | 00969./00969  | Barometric Pressure mB **           | 1028mb |
| ** Correction Factor If Outside Limit | 1.0           | Temperature Reading °C **           | 28     |
| Microscope Number                     | 674           | Measured Graticule Diameter /µm     | 100    |
| Timepiece Number                      | D - Timepiece | Corrected Graticule Diameter /µm    | 100    |

### Diagram (Clearance / Reference only)



Signed Analyst  
Print Name: Ian Price