

**CWM Site,
Knowle Lane,
Fairoak
Eastleigh**



Mineral Recovery Statement

Client

R & R Contractors

Report No. :
CWM141.D/MRS/001

Revision :
1

Date : July 2020

CWM Site, Knowle Lane

Mineral Recovery Statement

REPORT CWM141.D/MRS/001 CONTROL SHEET

Issue 1 – first issue for comment

Prepared by :

Richard Blaney
WAMITAB BEng(hons), MSc, CEng, CEnv, CWEM, S



Issue/revision				
Date				
Reason for issue				
Prepared by Signature				

CWM Site, Knowle Lane

Mineral Recovery Statement

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CWM Site, Knowle Lane

Mineral Recovery Statement

1.0 INTRODUCTION

Eastleigh Borough Council issued planning permission ref F/16/79074 for the “Construction of 27no. dwellings with access from Knowle Lane; associated parking, landscaping and infrastructure following demolition of existing buildings and structures” at the CWM site on Knowle Lane. Appendices A and B contain the proposed layout drawing and a copy of the planning permission respectively.

As the site is underlain by the Whitecliffe Sand Member and is within an area of former mineral abstractions Condition 9 was included within the planning permission that required:

“Prior to the commencement of development, a minerals recovery statement shall be submitted, and approved in writing by, the Local Planning Authority, outlining:

a) a method for ensuring that minerals that can be viably recovered during development operations are recovered and put to beneficial use, such use to be referred to the Mineral Planning Authority for agreement and such an agreement not to be unreasonably refused; and

b) a method to record the quantity of recovered mineral (for use on site). Reason: To allow incidental recovery of minerals.”

To address this condition WYG Environmental were commissioned to assess the mineral safeguarding issues at the site and as can be seen from a copy of their letter report (ref A087766/HCC-1 dated 18th March 2016) in Appendix C they concluded that:

“In view of the above it is not practicable or viable to undertake any substantial prior extraction of mineral at the CWM site. There may be limited opportunity to incidentally extract sand through some of the development works. However, this sand would need further analysis to determine the presence of any contamination and establish its suitability for use on or off site.”

Following their review of the WYG letter Hampshire County Council, as can be seen in their letter ref CONS/2020/0150 dated 5th March 2020 in Appendix D, commented that

“.....whilst we do not object to the discharge of condition 9 of planning permission F/16/78074 in principle, we would like to request that the applicant adheres to the wording of the condition regarding the production of a Mineral Recovery Statement.

As described within condition 9, this statement should include a method to record the quantity of recovered mineral (re-use on site or off site) and to report this data to HCC as the MPA. A record should also be kept of any materials that are removed from site and subsequently returned to site for reuse following decontamination. This statement should also contain further agreement from the applicant that incidental extraction of viable mineral resources has been considered within the development plans.”

1.1 Objectives

This report has been produced as Mineral Recovery Statement to detail how any natural soils excavated as part of the construction works on the CWM site will be assessed to determine their suitability for reuse.

2.0 GELOGY AND GROUND CONDITIONS

2.1 Published Geology

The BGS on-line geological maps indicate that there are no superficial deposits across the site and that the shallow bedrock is Whitecliff Sand Member, although the western extent of the site could cross a geological boundary into the Durley Sand Member. Both of these formations are from the London Clay parent unit and although the BGS lexicon does not have a lithological description for the Whitecliff Sand Member it describes the Durley Sand Member as:

"Buff, clayey, fine-grained sand"

Figure 1 Extract from the BGS on-line 1:50,000 scale map



2.2 Intrusive Ground Investigations

The site has been subjected to two intrusive investigations. Firstly; by Geo-Environmental in 2015 who drilled 14No. window sample probe holes across the area, and secondly; in 2019 Forge Environmental Management (Forge) sank a further 4No. window sample probe holes and a deep cable percussive borehole.

As can be seen from the exploratory hole logs for these investigations contained in Appendix E the majority of the site was covered with a layer of compacted gravel although the access roads had concrete or asphalt surfacing (50-400mm thick) underlying this was made ground in all location apart from the holes in the garden area to the existing property, which is not in the current development site. The made ground was generally a clayey sand/sandy clay up to a maximum 1.2m deep apart from midway along the southern boundary where this layer was underlain by a second layer comprising a clayey sand with a high proportion of plastic, wood, paper and metal (suspected landfill) that extended to 4.0mbgl

The underlying natural stratum generally comprised the clayey sands resting upon the more cohesive London Clay which was encountered in CP101 at 5.4m. Except for in WS12, which was in the lowest part of the site, where the sand was absent and the clay underlaid the made ground at 0.75m.

Table 1 below summaries the strata revealed within the boreholes and Appendix A contains a drawing showing the estimated contour depths to the natural sands across the site.

Table 1: Summary of Strata Encountered

Depth (m bgl)		Exploratory Holes Identified	Soil Type	General Description/Comments
From	To			
GL	0.10-0.20	CP101, WS1, WS103 & WS104	Surfacing	Concrete
GL	0.05-0.10	WS2, WS3 & WS11	Surfacing	Asphalt locally overlaying concrete, sub-base
GL	0.19-0.40	WS13, WS14 & WS105	Topsoil	Brown silty fine sand or sandy silt clay with occasional fine to medium sub angular flint gravel or frequent roots (2mm)
GL	0.33-0.60	WS1-WS13, COP101 & WS102-WS105,	Made Ground	Orangish, dark brown, light grey brown or brownish grey sand or silty clayey sand or sandy silt or clayey silt with varying proportions of gravel sized brick, concrete, flint, clinker and tarmac. Locally mixed with Type 1 material
0.10-0.60	1.50-4.00	WS1, WS2 CP101 & WS103	Made Ground	Dark brown sand, clayey sand and sandy clay and yellowish brown sand with varying proportions of fine to coarse grained gravel sized brick, concrete, wood, metal, plastic, glass, paper and occasional rootlets and slight organic odour
0.20-4.00	2.45+ -5.40	WS1-WS11, WS13, WS14, CP101	Whitecliff Sand Member	Orangish, yellowish, greyish or reddish brown SAND, clayey, silty, SAND or silty or sandy CLAY with varying proportions of clay lenses and/or ferruginous inclusions
0.75-5.40	3.0+ - 8.00+	WS12 & CP101	London Clay Formation	Brown and grey or orangish brown and grey sandy CLAY with rare ferruginous and sandstone inclusions

3.0 MANAGEMENT OF NATURAL SOILS EXCAVATED

As can be seen from the contour sketch in Appendix A the anticipated depths to the natural Whitcliff Sand Member across the majority of the site will be around 0.5m begl. However, as revealed by the chemical analysis undertaken as part of the previous site investigations the overlying made ground was shown to contain unacceptable concentrations of contamination.

Due to the presence of this contaminated layer of made ground it is possible that the upper layers of the underlying natural soils may have been impacted by the downward migration of contaminated leachate. Therefore, for any natural soils excavated during the construction of the new properties the following procedure will be followed to determine its suitability to be reused.

1. Any excavated natural soils arisings will be visually inspected and placed into stockpiles based upon their appearance (e.g. colour, nature (clay/sand);
2. Each stockpile will be samples at a rate of 1No. sample per 500m³ these samples will be forwarded to a UKAS/MCERTS accredited laboratory for chemical analysis for the validation suite as detailed in Forge "additional gas monitoring and remedial strategy report" ref CWM131/RS/001 and compared against the published human health residential with plant uptake end use threshold values. However, compliance with the human health assessment criteria does not always ensure the material would be suitable for export to other sites as some of the determinants if present at their maximum allowable concentrations will be above the Hazardous Waste thresholds. Therefore, in such cases typical in-house assessment criteria have been substituted in Table 2, below.

Table 2 - Chemical Acceptance Criteria

<i>Determinant</i>	<i>Target Value</i>	<i>Assessment Criteria Source</i>
Arsenic	37	LQM
Cadmium	11	LQM
Chromium	910	LQM
Copper	500	^ in-house adopted acceptance criteria
Lead	200	DERFA
Mercury	40	LQM
Nickel	180	LQM
Zinc	500	^ in-house adopted acceptance criteria
Total Cyanide	34	ATKINS
Water Soluble Boron	290	LQM
Phenols	120	LQM
Naphthalene	2.3	LQM
Acenaphthylene	100	*Total PAH value = 100mg/kg
Acenaphthene	100	*Total PAH value = 100mg/kg
Fluorene	100	*Total PAH value = 100mg/kg
Phenanthrene	95	LQM
Anthracene	100	*Total PAH value = 100mg/kg
Fluoranthene	100	*Total PAH value = 100mg/kg
Pyrene	100	*Total PAH value = 100mg/kg
Benzo(a)anthracene	7.2	LQM
Chrysene	15	LQM
Benzo(b)fluoranthene	2.6	LQM
Benzo(k)fluoranthene	77	LQM
Benzo(a)pyrene	2.2	LQM
Indeno(1,2,3-cd)pyrene	27	LQM
Dibenzo(a,h)anthracene	0.24	LQM
Benzo[g,h,i]perylene	320	*Total PAH value = 100mg/kg
Total PAH	100	Inert soils threshold criteria

Table 21 - Chemical Assessment Criteria (continued)

Determinant	Target Value	Assessment Criteria Source
Benzene	0.087	LQM
Toluene	130	LQM
Ethylbenzene	47	LQM
Xylenes	56	# LQM
>C5-C6 Aliphatic	42	LQM
>C6-C8 Aliphatic	100	LQM
>C8-C10 Aliphatic	27	LQM
>C10-C12 Aliphatic	130	LQM
>C12-C16 Aliphatic	500	LQM
>C16-C21 Aliphatic	500	**Total TPH value = 500mg/kg
>C21-C35 Aliphatic		
>C35-C40 Aliphatic	500	**Total TPH value = 500mg/kg
>C5-C7 Aromatic	70	LQM
>C7-C8 Aromatic	130	
>C8-C10 Aromatic	34	LQM
>C10-C12 Aromatic	74	LQM
>C12-C16 Aromatic	140	LQM
>C16-C21 Aromatic	260	LQM
>C21-C35 Aromatic	500	**Total TPH value = 500mg/kg
>C35-C40 Aromatic	500	**Total TPH value = 500mg/kg
Total TPH	500	Inert soils threshold value
SVOC	Limit of detection	Professional judgement
VOC	Limit of detection	Professional judgement

KEY

LQM = LQM/CIEH Suitable 4 Use Levels (S4UL) published 2015

* = S4UL value is above 100mg/kg maximum PAH threshold for inert material

** = S4UL value is above 500mg/kg maximum TPH threshold for inert material

DEFRA = Category 4 Screening Levels (C4SL) published 2014

=lowest of the individual xylene values adopted

Atkins = due to the absence of any current published guideline values for Cyanide the SSV derived by Atkins (31/03/2011) using CLEA for 1% SOM based on acute exposure for a 0-6 year old child, using 5th percentile bodyweight from CLR10. Information was not available in

Professional Judgement = there are no published target levels for VOC's or SVOC's in soils therefore as the soils are natural no volatile compounds should be present and this has been adopted as the target level as results below the limit of detection are considered to demonstrate the absence of the contaminant.

[^] = in-house threshold values have been substituted where the published human health target level for the individual metal determinants are above the hazardous waste threshold of 1% (i.e. >999mg/kg) and are based upon knowledge of soil contamination and experience of similar types of projects

4.0 RECORDING SOIL MOVEMENTS

As discussed in the WYG mineral safeguarding letter (Appendix C) they concluded that

“Given its location, size, and the historic and current uses which have given rise to contamination across parts of the site, Parsons Construction have confirmed that it would not be practicable or viable to extract the underlying sand to any great depth, unless it is necessary to do so as part of the remedial strategy for the site. It would not be appropriate or practical to build at a substantially lower level than the adjacent land, given the surrounding land uses and existing vegetation. If this were to be done, the land would need to be restored to a level suitable for subsequent built development, either with excavated material which has been removed from site, cleaned and brought back to site, or inert material from elsewhere.”

From the review of the site investigation data the proposed remedial scheme, as detailed in Forge report “additional gas monitoring and remedial strategy report” (ref CWM131.D./RS/001) comprises:

1. The slab and structures across the site will be removed with all suitable material being crushed to generate a suitable granular material for re-use on site;
2. Any soils excavated will be classified as either suitable for re-use or removed from site to an appropriately licensed landfill or treatment facility accompanied by an appropriate transfer/consignment note;
3. Following the construction of the new properties the garden and soft landscaped will be prepared for the placement of the capping layer. With all made ground being removed from the areas to the appropriate depth below the design finished ground levels (i.e. - 600mm in gardens and -300mm in communal soft landscaped area);
4. The chemically suitable imported sub-soil and topsoil will be placed across the areas on a Terram membrane and validated.

The contaminated made ground removed as part of the remedial works will be taken from site to a suitably licensed landfill or waste treatment facility following classification in accordance with current Environment Agency guidance and disposed off-site under duty of care. Full details of these works, including copies of the haulage tickets, will be included in the Verification Report, as discussed in the Forge “additional gas monitoring and remedial strategy report”.

Therefore, following the removal of the contaminated soils there will be no major earthworks or mineral abstraction so the natural soils excavated will be as a direct result of the works necessary to construct of the new properties (e.g. footings, drainage and roads).

As a result there will only be limited volumes of natural arisings produced and their movement will be recorded on a Daily Soil Movement Record Sheet. A copy of the template soil movement record sheet is contained in Appendix F and this will include details of the point of excavation, validation testing and where the soils were re-used.

5.0 CONCLUSION

As discussed in the WYG mineral safeguarding letter it is not viable or practicable to extract the sand underlying the site and based upon the remedial strategy only the contaminated made ground will require removal in soft landscaped areas to a maximum depth of 600mm. Therefore, natural soils will only be excavated for the construction of foundations and infrastructure for the new development.

As a results only limited volumes of the sands are anticipated, which it is intended should be reused on site where possible. To ensure that this material is chemically suitable, as detailed in this Mineral Recovery Strategy all material will visually assessed and chemical tested to confirm its suitability.

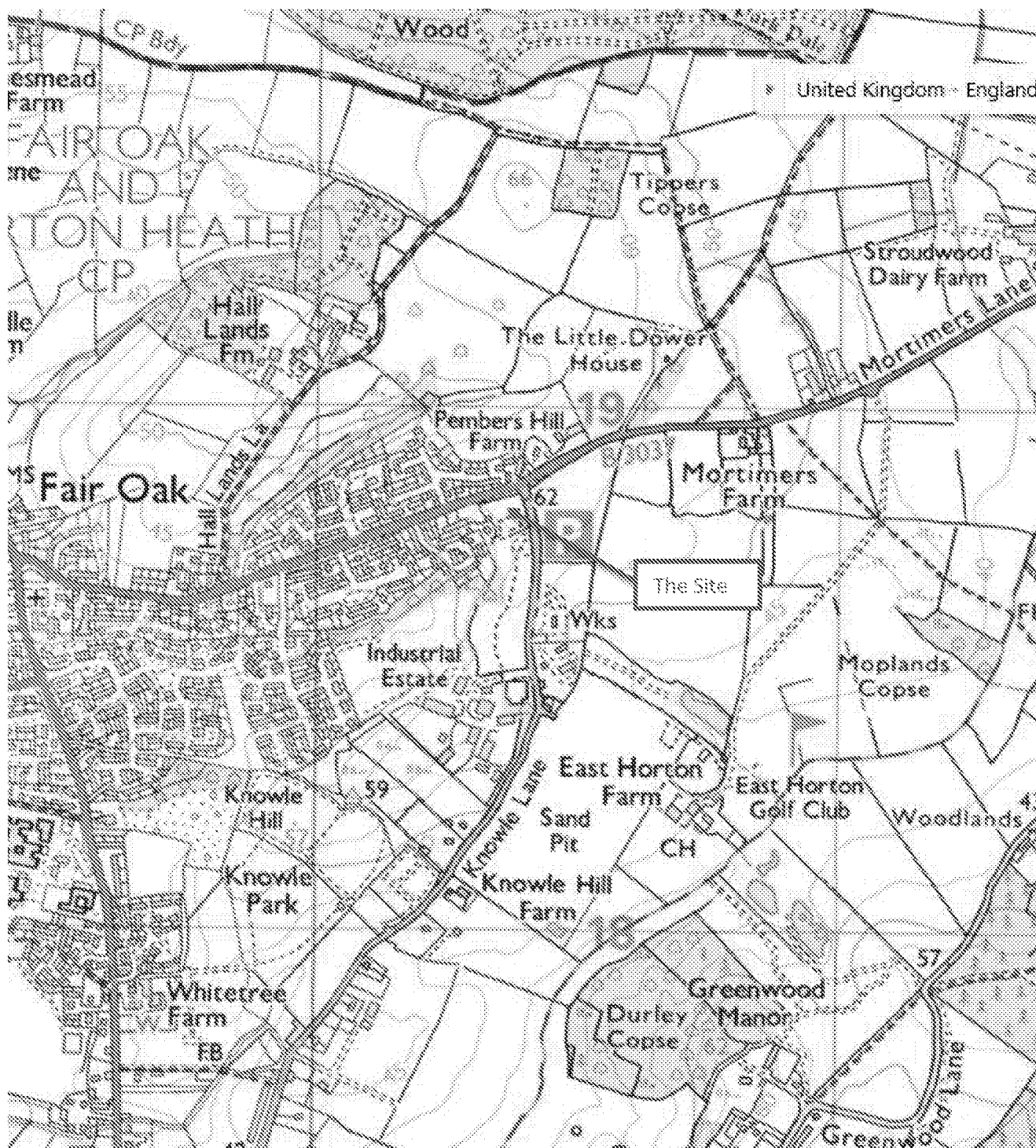
As the material will be used a general fill it is not anticipated geotechnical testing will be required, however, if this is deemed necessary then samples can be collected and dispatched to a geotechnical laboratory for appropriate testing, as required by the engineer.

APPENDICES

- Appendix A *Drawings*
- Appendix B *Eastleigh BC Planning Approval F/16/78074*
- Appendix C *WYG Environmental Mineral Safeguarding letter report dated 18th March 2016*
- Appendix D *Hampshire CC letter re discharge of Condition 9 (Mineral Safeguarding)*
- Appendix E *Site Investigation Exploratory Hole Logs*
- Appendix F *Material Movement Daily Record Sheet*



APPENDIX A - Drawings



PROJECT CWM Site, Knowle Lane	CLIENT R&R CONTRACTORS	Date : 13 th July 2020	 FORGE The Forge Lower Vagg Chillthorne Domes Yeovil Somerset BA21 3PY Tel : 01935 840 346
		Scale : Not To Scale	
DRAWING TITLE Site Location Plan		DRAWING No. CWM131.D/101	



Sound insulation: Glazing & ventilation in facades facing Mortimers Lane to acoustic specialist's report

CC1

MORTIMERS LANE

2.4m high acoustic fence

New footpath & security gate into site

2.4m high acoustic fence

Brick retaining wall

Brick retaining wall

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Car port

Accessing Knowle Lane to acoustic specialist's report

Richmond Court, 94 Botley Road, Park

J	5.07.17	Landscape update (screen plan)
I	11.05.17	Plot 14 parking amend
H	26.04.17	Carport update
G	07.04.17	Parking update
F	27.02.17	Garden update
E	27.02.17	Parking update
D	03.02.16	Planning issue
C	13.11.15	Site update
B	03.11.15	House design update
A	4.08.14	Schedule/area

The site is based on a topographical survey. The surrounding information copied from Q Copyright. Licence Number 100020449

RW to be removed & new landscaped bank to IFA & highway. Authority approved

Rear garden of plots 1-4 to be provided with 2m acoustic fence

Plot 1-5 can collection point

Ex. access road to be modified to eng. design

2.4m

2.4m

2.4m

2.4m

2.4m

2.4m

2.4m

2.4m

2.4m

2.4m

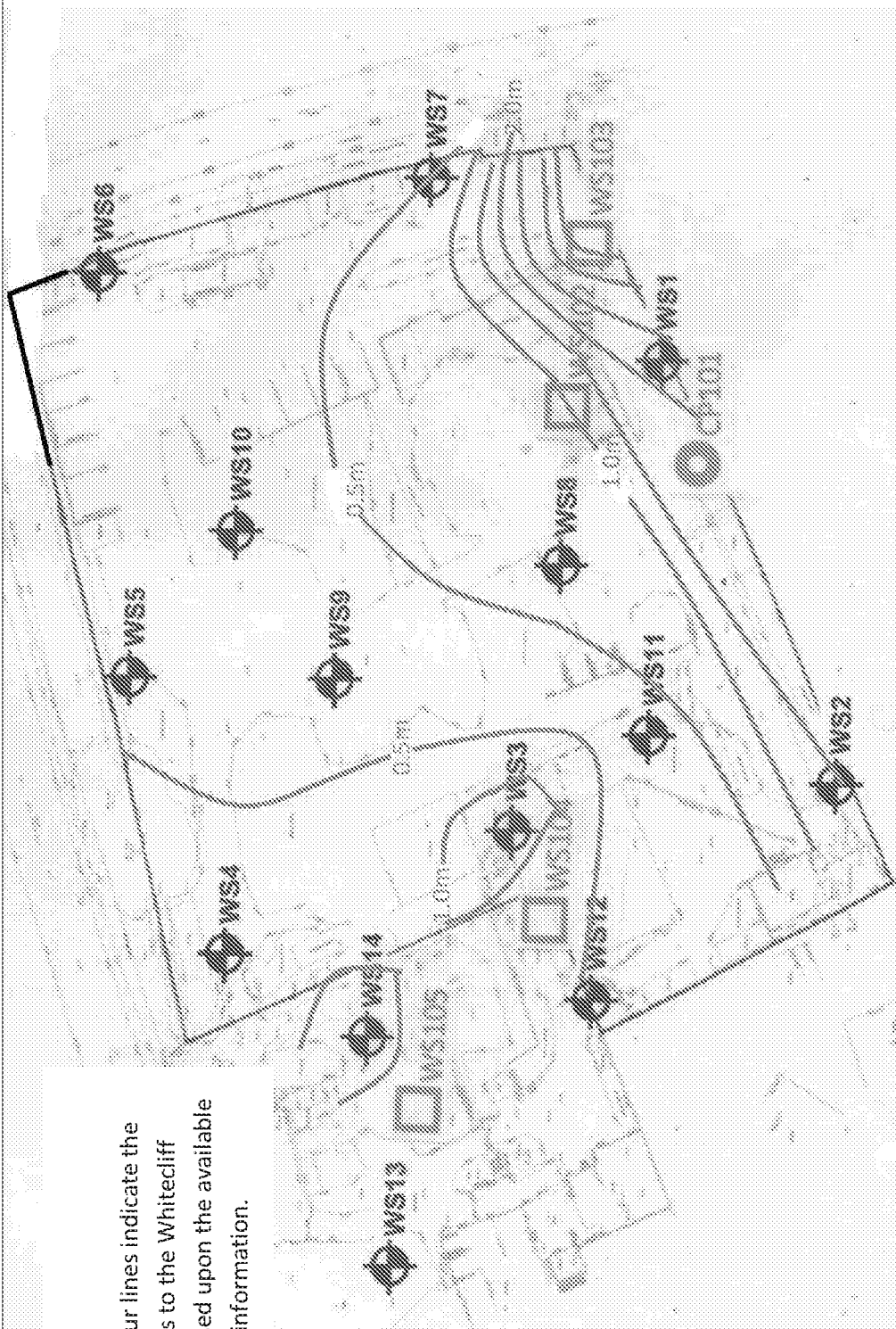
2.4m

2.4m

2.4m

Notes

The orange contour lines indicate the anticipated depths to the Whitecliff Sand member based upon the available site investigation information.



PROJECT

CWM Site, Knowle Lane

CLIENT

R & R CONTRACTORS

Date : 13th July 2020

Scale : Not To Scale

DRAWING TITLE

Approximate Anticipated Depths to the Whitecliff Sand Member

DRAWING No.

CWM141.D/102



FORCE

The Forge
Lower Vagg
Chittome Damer
Yeovil
Somerset
BA21 3PY
Tel : 01935 840 346



APPENDIX B – Eastleigh BC Planning Approval F/16/78074

Application F/16/78074
Please ask for Kitty Budden

MR JON BRAY
FIRST FLOOR LEFT HAND SIDE
THE PAVILION
GRANGE DRIVE
HEDGE END
SOUTHAMPTON
SO30 2AF

Friday 26 January 2018

Town and Country Planning Act 1990
The Town and Country Planning (Development Management Procedure) (England)
Order 2015

Application No. F/16/78074

In pursuance of their powers under the above Act and in accordance with your application received on Tuesday 23 February 2016 the Council, as Local Planning Authority hereby **Permit** the following :

Description: Construction of 27no. dwellings with access from Knowle Lane; associated parking, landscaping and infrastructure following demolition of existing buildings and structures.
Site: CWM, Corner of Mortimers Lane and Knowle Lane, Fair Oak, Eastleigh, SO50 7BT

Subject to due compliance with the following conditions:

- 1 The development hereby permitted shall begin not later than three years from the date of this decision. Reason: To comply with Schedule 2, Part 16 of the Town and Country Planning General Permitted Development Order 2015.
- 2 The development hereby permitted shall be implemented in accordance with the following plans numbered: 1673-02 Rev B, 1673-04 Rev A, 1673-05 Rev C, 1673-06 Rev C, 1673-07 Rev B, 1673-08 Rev B, 1673-09 Rev B, 1673-10 Rev B, 1673-11 Rev B, 1673-12 Rev B, 1673-14 Rev A, 1673-15 Rev B, 1673-16 Rev B, 1673-03 A, 1673-13 B, 1673-01J, 1673-17A, 1673-18A, 1673-19B, 1673-20A, 1673-21B, 1673-22B, 1673-23, 1673-24, 1673-M01i, HP14058/X001b.
Reason: For the avoidance of doubt and in the interests of proper planning.
- 3 No construction or demolition work shall start until a Construction Method Statement has been submitted to, and approved in writing by, the Local Planning Authority. Demolition and construction work shall only take place in

Eastleigh Borough Council, Eastleigh House, Upper Market Street, Eastleigh, Hampshire SO50 9YN

accordance with the approved method statement which shall include:

- a) a programme and phasing of the demolition and construction work, including roads, landscaping and open space;
- b) location of temporary site buildings, compounds, construction material and plant storage areas used during demolition and construction;
- c) the arrangements for the routing/ turning of lorries and details for construction traffic access to the site, including a lorry routing plan;
- d) the arrangements for deliveries associated with all construction works, loading/ unloading of plant & materials and restoration of any damage to the highway [including vehicle crossovers and grass verges];
- e) the parking of vehicles of site operatives and visitors;
- f) measures to control the emission of dust and dirt generated by demolition and construction, including measures to prevent mud on the highway;
- g) a scheme for controlling noise and vibration from demolition and construction activities, including details of any piling. The assessment should have due regard to the advice and guidance contained in British Standard BS5228.2009 (A1 2014) 'Noise and Vibration Control on Construction and Open Spaces';
- h) provision for storage, collection, and disposal of rubbish from the development during construction period;
- i) temporary lighting;
- j) the erection and maintenance of security hoarding including decorative displays and facilities for public viewing, where appropriate;
- k) no burning of materials obtained by site clearance or any other source;
- l) no construction or deliveries to the site except between the hours of 0800 to 1800 Mondays to Fridays or 0900 to 1300 on Saturdays and not at all on Sundays or Bank Holidays.

Reason: To limit the impact the development has on the amenity of the locality.

- 4 No development shall start until details of the access [including any footway and verge crossing] have been submitted to and approved in writing by the Local Planning Authority. The development shall not be occupied until the approved details have been fully implemented unless agreed in writing by the Local Planning Authority.

Reason: To ensure satisfactory vehicular access.

- 5 No development shall start until details have been submitted to and approved in writing by the Local Planning Authority. The development shall not be occupied until the approved details have been fully implemented [unless agreed in writing by the Local Planning Authority] and shall include:

- a) Details and samples of the materials to be used in the construction of the external surfaces of the development.
- b) The alignment, height and materials of all walls, fences and other means of enclosure.
- c) Plans including cross sections to show proposed ground levels and their relationship to existing levels both within the site and on immediately adjoining land.
- d) Width, alignment, gradient, sight lines, lighting and type of construction proposed for any roads, footpaths and accesses. These shall be designed in accordance with the Manual for Streets and any lighting shall be

e) Details for ongoing management and maintenance of any roads, footpaths and accesses including any future plans for adoption.
Reason: To limit the impact the development has on the locality.

- 6 No work shall start on site until the following has been submitted to, and approved in writing by the Local Planning Authority:
- a) A report of preliminary investigation comprising a Desk Study, Conceptual Site Model, and Preliminary Risk Assessment documenting previous and existing land uses of the site and adjacent land in accordance with national guidance and as set out in Contaminated Land Reports Nos.1 and 2, and BS10175:2011 Investigation of Potentially Contaminated Sites Code of Practice, and, unless otherwise agreed with the Local Planning Authority;
 - b) A report of a site investigation documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by Preliminary Investigation and in accordance with BS10175:2001 and BS10175:2011 and unless otherwise agreed with the Local Planning Authority;
 - c) A detailed site specific scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works.
- Reason: To minimise the risk from land contamination for public safety.

- 7 The development hereby permitted shall not be occupied/ brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of condition 6a that any remediation scheme required and approved under the provisions of condition 6a has been implemented fully in accordance with the approved details (unless varied with the written permission of the LPA in advance of implementation).

Unless agreed in writing with the LPA such verification shall comply with the guidance contained in CLR11 and EA Guidance for the Safe Development of Housing on Land Affected by Contamination - R&D Publication 66:2008. Typically such a report would comprise:

- a) A description of the site and its background, and summary of relevant site information;
- b) A description of remediation objectives and remedial works carried out;
- c) Verification data, including - data (sample locations/analytical results, as built drawings of the implemented scheme, photographs of the remediation works in progress, etc;
- d) Certificates demonstrating that imported and/or material left in situ is free from contamination, gas/vapour membranes have been installed correctly. Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 6a.

- 8 No development shall start until details for the sustainable disposal of surface water and disposal of foul sewerage from the development hereby permitted.

and an implementation timetable, have been submitted to and approved in writing by the Local Planning Authority in consultation with the sewerage undertaker. The development shall then accord with the approved details.
Reason: To ensure satisfactory provision of foul and surface water drainage.

- 9 Prior to the commencement of development, a minerals recovery statement shall be submitted, and approved in writing by, the Local Planning Authority, outlining:
- a) a method for ensuring that minerals that can be viably recovered during development operations are recovered and put to beneficial use, such use to be referred to the Mineral Planning Authority for agreement and such an agreement not to be unreasonably refused; and
 - b) a method to record the quantity of recovered mineral (for use on site).
- Reason: To allow incidental recovery of minerals.

- 10 The development must accord with the Arboricultural Implications Assessment and Method Statement "14613-AIA 2" dated 19 February 2016 produced by Ecourban Ltd. Tree Protection must be addressed as per the Tree Protection Plan (Eco 2) produced by Ecourban Ltd. Tree protection measures shall be retained in their approved form for the duration of the work. This condition may only be fully discharged upon completion of the proposed development, subject to satisfactory written evidence of monitoring and compliance by the retained arboricultural consultant during construction.
- Reason: To retain and protect the existing trees which form an important part of the amenity of the locality.

- 11 No development, excavation or demolition shall commence until a site meeting has taken place with the site manager, the retained arboricultural consultant and a representative from the Local Planning Authority. Work cannot commence until the LPA officer has inspected and approved the tree protection, ensuring it conforms to the Tree Protection Plan and the Arboricultural Report. All other aspects of the Arboricultural Report will be addressed at this meeting. The tree protection shall be retained until the development is completed and nothing shall be placed within the fencing, nor shall any ground levels be altered or excavations made without the written consent of the Local Planning Authority. This tree condition may only be fully discharged on completion of the development subject to satisfactory written evidence of monitoring and compliance by the pre-appointed tree specialist during construction. Reason: To retain and protect the existing trees which form an important part of the amenity of the locality.

- 12 No development shall start until a landscaping scheme has been submitted to and approved in writing by the Local Planning Authority. The scheme shall cover all hard & soft landscaping [including trees and boundary treatment] and shall provide details of timings for all landscaping and any future maintenance. The works shall be carried out in accordance with the approved plans and to the appropriate British Standard.
Reason: In the interests of the visual amenity of the locality and to safeguard the amenities of neighbouring residents.

- 13 All hard & soft landscaping, tree planting and boundary treatment shall be carried out in accordance with the approved details and to the appropriate British Standard. For a period of 5 years after planting, any trees or plants which are removed, die or become seriously damaged or defective, shall be replaced as soon as is reasonably practicable with others of the same species, size and number as originally approved in the landscaping scheme.
Reason: In the interests of the visual amenity of the locality and to safeguard the amenities of neighbouring residents.

- 14 The ecological enhancements shall be agreed with the Local Planning Authority and the Council's Biodiversity Officer and implemented prior to occupation of the first dwelling. The enhancements shall be in general accordance with the recommendations outlined in the Ecological Mitigation and Enhancement Strategy ref 14/09/015/PD rev 01 dated 29/01/2016.
Reason: To protect and enhance biodiversity.

- 15 Prior to the commencement of development details of:
 - the glazing; and
 - alternative ventilation measures, and
 - noise screens and other mitigation measures to be utilised on site, shall be submitted to, and approved in writing by, the Local Planning Authority. The development must accord with these details. Suitable verification shall be submitted to confirm that the recommended internal noise levels have been achieved.
 Reason: To protect the amenities of future occupiers.

- 16 Prior to the occupation of any building within each individual phase of the development (or, in accordance with a timetable to be agreed in writing with the Local Planning Authority), as built stage SAP data and as built stage water calculator confirming energy efficiency and the predicted internal mains water consumption to achieve the following shall be submitted to and approved in writing by the Local Planning Authority:
 - In respect of energy efficiency, a standard of a 19% improvement of dwelling emission rate over the target emission rate as set in the 2013 Building Regulations
 - In respect of water consumption, a maximum predicted internal mains water consumption of 105 litres/person/day.
 The development shall not be carried out otherwise than in accordance with the approved details.
Reason: To support a comprehensive approach to high quality design across the site; in line with the guidance set out in the Government's Ministerial Statement of 25 March 2015 which states that Local Planning Authorities should, from the date of its publication, take into account the government's intentions in the statement "and not set conditions with requirements above a Code level 4 equivalent".

- 17 The development hereby permitted shall not be occupied until the parking areas [including the garages and unallocated visitor spaces] have been provided in accordance with the approved plans and thereafter permanently retained and

used only for the purpose of accommodating bicycles and private motor vehicles incidental to the enjoyment of the dwelling house as a residence.
Reason: To make provision for off street parking for the purpose of highway safety and to ensure adequate provision of on-site facilities.

Note to Applicant: In accordance with paragraphs 186 and 187 of the National Planning Policy Framework, Eastleigh Borough Council takes a positive approach to the handling of development proposals so as to achieve, whenever possible, a positive outcome and to ensure all proposals are dealt with in a timely manner.

Note to Applicant: A formal application for connection to the water supply is required in order to service this development. Please contact Southern Water, Sparrowgrove House, Sparrowgrove, Otterbourne, Hampshire SO21 2SW [REDACTED]
[REDACTED]

Note to Applicant: The applicant/developer should enter into a formal agreement with Southern Water to provide the necessary sewerage infrastructure required to service this development. Please contact Southern Water, Sparrowgrove, Otterbourne, Hampshire SO21 2SW [REDACTED]
[REDACTED]

Yours faithfully

[REDACTED]
Andy Grandfield
Lead Specialist for Housing and Development

N.B. See Attached Notes



APPENDIX C – WYG Environmental Mineral Safeguarding Letter Report dated 18th March 2016



18th March 2016

Melissa Spriggs
County Planning
Economy, Transport & Environment Department
Hampshire County Council
Elizabeth II Court West - Floor One
The Castle, Winchester
Hampshire
SO23 8UD

Dear Ms Spriggs

CWM Site, Knowle Lane, Fair Oak, Eastleigh, Hampshire, SO50 7BS

WYG has been commissioned by Parsons Construction Limited to consider the minerals safeguarding issues on land referred to as 'CWM Site, Knowle Lane, Fair Oak' (hereafter CWM Site), insofar as they influence the planning application (ref. F/16/78074) for 'Construction of 27no. dwellings with access from Knowle Lane; associated parking, landscaping and infrastructure following demolition of existing buildings and structures' as submitted to Eastleigh Borough Council.

In this letter, I summarise the background to the site and draw on, in particular, the results of Geotechnical Assessment and Ground Investigation (GI) which has been undertaken by Geo-Environmental Services Ltd (hereafter referred to as Geo-Environmental). I set out the results of the work together with our conclusions on the scope for recovery of minerals in the context of national and local planning policy on minerals safeguarding.

Site Location and Description

The CWM site, which has an area of 0.677 hectares lies on the west of Knowle Lane and the south of Mortimers Lane, Fair Oak. To the east, north and west are residential properties. The southern boundary is defined by a row of semi-mature trees and Heras fencing beyond which is local open space. Scotland Copse and Harding Copse were originally quarries which later served as landfill sites, but ceased operating in the 1980s.

The site is accessed off Knowle Lane some 80 metres from the junction with Mortimers Lane.

The site itself consists largely of concrete roads and hard standings with several prefabricated and engineering / agricultural structures. There are very few if any 'natural' areas within this site.

Ground levels vary across the site. It is set over three levels with a marked fall towards the west. The higher ground is located along the northern and eastern boundaries. The central portion of the site is estimated to be 2-3m lower, with the western portion approximately 3m lower again. The changes in slope are accommodated by sloping roads and ramps for vehicle access and the presence of a series of retaining walls.

Development Proposal

The site is in use as a waste transfer station and supplies aggregate materials, civil engineering and concrete/soil products.

Parsons Construction proposes to redevelop the site for residential use (27 units (houses with gardens and flats) with communal landscaping, car parking, an estate road and associated development infrastructure). In association with the scheme, Parsons Construction is seeking to relocate the existing CWM operation to a site east of Knowle Lane (Hampshire County Council planning application ref. HCC/2016/0123).

The Site Layout (1673-01d) for the redeveloped CWM site is enclosed with this letter.

Minerals Safeguarding

National Policy

The safeguarding of non-renewable resources, such as minerals, is considered to be a key aspect of sustainable development. Para 143 of the National Planning Policy Framework (NPPF), DCLG 2012, obliges MPAs to define Mineral Safeguarding Areas (MSAs) when preparing local plans, in order that known locations of specific mineral resources of local or national importance are not needlessly sterilised by non-mineral development, albeit that MSAs carry no presumption that the resources will be worked. Where it is deemed necessary for non-mineral development to take place, prior extraction is to be encouraged where it would be practicably and environmentally feasible.

Hampshire Minerals and Waste Local Plan

The HMWP includes Policy 15 on the safeguarding of mineral resources. It states that:-

"Hampshire's sand and gravel (sharp sand and gravel and soft sand).....are safeguarded against needless sterilisation by non-minerals development, unless 'prior extraction' takes place...."

Safeguarded mineral resources are defined by a Mineral Safeguarding Area illustrated on the Policies Map.

Development without the prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:

- a) it can be demonstrated that the sterilisation of mineral resources will not occur; or
- b) it would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan; or
- c) the development would not pose a serious hindrance to mineral development in the vicinity; or
- d) the merits of the development outweigh the safeguarding of the mineral..."

The MSA coincides with the area proposed for residential development on land at Knowle Lane, as shown on enclosed Drawing No. MSA-01.

Appendix C of the HMWP provides an explanation as to how the Plan policies will be implemented. In relation to Policy 15 it says that:-

"...In terms of prior extraction, a realistic judgement about the likelihood of the mineral being worked in an environmentally acceptable way will be made in areas where development is proposed within the MSA. The minerals planning authority will not seek to prevent development where it is unlikely that extraction of the mineral would occur in the future. Where mineral deposits are believed to exist but detailed geological information is not available, the existence or otherwise of a potentially workable resource may need to be established by the developer before any application for development that might sterilise the potential deposit is determined."

Minerals and Waste Safeguarding in Hampshire Supplementary Planning Document

HCC have published a draft Supplementary Planning Document (SPD) 'Minerals and Waste Safeguarding in Hampshire' (Draft, June 2015) which sets out in further detail what minerals and waste safeguarding is and why it is important. It also aims to provide clear guidance on the implementation of the safeguarding policies and to improve the way the Hampshire Authorities work with other local

authorities, developers and other interested parties with respect to minerals and waste safeguarding. The SPD states that:-

"This guidance has been produced to identify where particular care is needed to prevent the unnecessary sterilisation of sand and gravel resources or encroachment of existing minerals or waste sites by non-minerals or waste development."

It sets out that:

"Avoiding the sterilisation of mineral resources is an important sustainability issue in Hampshire, both in terms of self-sufficiency regarding its mineral needs and in terms of preserving these resources for future generations. Additionally, it also represents an opportunity to increase the sustainability of development proposals by considering the minerals as a resource through on-site use of local minerals, including any material that is extracted through incidental activities (such as excavating for footings or landscaping).

The aim of *Policy 15 (Safeguarding - mineral resources)* is to avoid the needless sterilisation of proven mineral resources. Therefore, in order to minimise the sterilisation of resources, the Hampshire Authorities encourage the maximum possible level of prior extraction, depending on the viability of mineral extraction. To help achieve this, the Hampshire Authorities promote the use of the following framework for consideration of prior extraction (using a sequential approach)."

The SPD acknowledges that safeguarding is not a bar to non-mineral development and that there are situations where only some of the mineral resource may be extracted prior to development.

Mineral Resources

In their GI Report (May 2015), Geo-Environment set out the geology of the site as follows:-

"British Geological Survey geological mapping indicated the geology of the site to comprise Made Ground over a succession of the Durley Sand Member, Whitecliff Sand Member over London Clay Formation. As described above, the site is set out over three levels with higher ground along the northern and eastern boundaries. As such Made Ground could be at its deepest in these areas and around the upslope side of retaining walls.

[The term Made Ground is used to describe material which has been placed by man either for a particular purpose e.g. to form an embankment, or to dispose of unwanted material. For the former use, the Made Ground may well have been selected for the purpose and placed and compacted in a controlled manner. With the latter, great variations in material type, thickness and degree of compaction invariably occur and there can be deleterious or harmful matter, as well as potentially methanogenic organic material. The BSI Code of Practice for Foundations, BS8004:1986 Clause Made Ground and Fill, includes the caveat that "all made ground should be treated as suspect, because of the likelihood of extreme variability".]

The Whitecliff Sand Member comprises sand which occurs as lenticular bodies within the upper parts of the London Clay Formation as thin discontinuous beds and channels. These sands are noted to be much finer grained (mean grain size typically about 0.2mm) and as such are locally important in the Eastleigh area as construction sands.

The Durley Sand Member comprises yellow and light brown clayey fine grained sand. Within the Southampton area the London Clay formation consists predominantly of interbedded silty sandy clay and silty sand, sporadic claystones occur and thin but persistent bands of rounded flint pebbles occur at the bases of sedimentary cycles."

Hydrogeology

Geo-Environment set out in their GI Report (May 2015) that with reference to information provided by the Environment Agency (EA), the site overlies a Secondary 'A' Aquifer (inferred to be the Durley and Whitecliff Sand Member) over Unproductive Strata (Inferred to be the London Clay Formation). Secondary 'A' Aquifers are defined as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. According to the EA the site is not located within a Groundwater Source Protection Zone.

In line with the findings of the preliminary risk assessment and in view of the low sensitivity hydrogeological site setting it is considered that the site presents a generally low risk to groundwater resources.

Geotechnical and Ground Investigation

Desk Studies

Geo-Environmental was commissioned by Parsons Construction to prepare a Desk Study Report (report reference GE10033/DSR/SEPT14) to covering the geotechnical and geo-environmental factors relating to the site. The report included a Preliminary Risk Assessment (PRA) and Conceptual Site Model to evaluate

plausible pollutant linkages with respect to the proposed development, adjacent land uses and the wider environment. The report recommended that intrusive investigation works and further assessment should be carried out to better characterise the on-site contamination identified and any associated risks.

Other Desk Study Reports prepared by third parties relate to:-

- Land to the east of the site, on the eastern side of Knowle Lane (report ref: GWPR632/DS/April 2013). This identified a potential risk to that site from ground gases emanating from landfills to the south of the CWM Site. The report recommended that gas monitoring be undertaken to further characterise the risk to that site from ground gas migration from off-site sources.
- 'Fair Oak landfill study area', to the east and south east of Fair Oak Village, encompassing land immediately adjacent to the CWM Site (report ref: CG/5515, dated April 2012, prepared for Eastleigh Borough Council). A second report was prepared by others for Eastleigh. This report also identified risks to human health and the environment within the report subject area as a result of ground gas migration from areas of former landfill activity.

Prior to carrying out the most recent assessment, Geo-Environmental and Eastleigh Borough Council (EBC) established that EBC would require a period of continuous ground gas monitoring to be completed due to the proximity and status of the adjacent land which includes gassing landfill (see section 2.10 of Geo-Environment Report May 2015 for details of landfill and waste management facilities in the vicinity of the CWM Site).

Historical mapping of potentially contaminative land uses also identified quarrying of sand and clay, with the operation of sand and gravel pits dating back to 1962 (based on map publication dates but could date back to the late 1940s or 1950s). The closest recorded site was located 77m south of the site. The mapping suggests that the sand deposits to the south of the site were excavated and then subsequently infilled and restored, potentially accepting a number of different wastes. Common practice in the period when the adjacent/nearby landfill sites were in operation was based on the principle of 'dilute and disperse', i.e. there being no measures to contain the lateral or vertical migration of gas or leachate within the landfill mass, or beyond the landfill boundaries. The historic mapping indicates that the landfills correlate with recorded sand pits.

Intrusive Ground Investigation

Further to the results of the Phase 1 Desk Report, Geo-Environmental undertook ground investigation works during March 2015 and ground gas monitoring undertaken during March and April 2015. The investigative works were as follows:-

- The construction of fourteen window sample boreholes located across the site to a depth of up to 5m below ground level (bgl) including regular in-situ testing and sampling.
- Installation of combined ground gas and groundwater monitoring wells within two window sample boreholes on the southern site boundary and one window sample borehole in the north-eastern part of the site.
- Ground gas monitoring comprising continuous monitoring within three monitoring wells for period of one month.
- Laboratory based testing of recovered samples for environmental parameters.
- Waste Acceptance Criteria (WAC) testing on a sample of Made Ground for consideration of likely waste classification of surplus soils that might be removed from the site during development.

Ground Investigation - Summary Results

Paragraph 4.1 of the Geo-Environment GI Report (May 2015) states that:

"The anticipated Whitecliff Sand Member was encountered during the intrusive investigation overlain by a mantle of Topsoil and/or Made Ground. Tarmac or concrete surfacing was also encountered at a number of investigation positions. The soils of the London Clay Formation were encountered beneath the Made Ground at one location in the western (lowest) part of the site. The ground conditions encountered within the exploratory holes are summarised in Table 4.1.

(Extract from Geo-Environment GI Report, May 2015) Table 4.1 Summary of Ground Conditions

Top (mbsl)	Base (mbsl)	Description
0	0.40	TOPSOIL: Brown silty fine sand or sandy silty clay with occasional fine to medium sub angular flint gravel or frequent roots (2mm). WS13 and WS14 only.
0	0.33 – 0.60	MADE GROUND: Orangish, dark brown, light grey brown or brownish grey sand or silty clayey sand or sandy silt or clayey silt with varying proportions of gravel sized brick, concrete, flint, clinker and tarmac, occasional rootlets. WS1-WS13.
0.10-0.70	1.50 – 2.10	MADE GROUND: Dark brown sand, clayey sand and sandy clay and yellowish brown sand with varying proportions of fine to coarse grained

		gravel sized brick, concrete, wood, metal, plastic, glass, paper and occasional rootlets and slight organic odour. WS1 and WS2 only.
0.20 – 2.10	5.0+	WHITECLIFF SAND MEMBER: Orangish, yellowish, greyish or reddish brown SAND, clayey, silty, SAND or silty or sandy CLAY with varying proportions of clay lenses and/or ferruginous inclusions. WS1– WS11, WS13 and WS14
0.75	3.0+	LONDON CLAY FORMATION: Brown and grey or orangish brown and grey sandy CLAY with rare ferruginous and sandstone inclusions. WS12

Paragraph 4.2 confirms that:-

“Groundwater was encountered within boreholes WS2 at 2.1mbgl, WS3 at 1.0mbgl and WS11 at 1.5mbgl during the intrusive investigation and also within monitoring wells installed within boreholes WS1, WS2 and WS6 during subsequent monitoring. Monitoring was undertaken during late March and April 2015. It should be noted that changes in groundwater levels do occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a standpipe or piezometer.”

Summary of Borehole Results

Table 1 below provides a summary of the borehole logs based on Geo-Environment GI Report (May 2015):-

	WS1	WS2	WS3	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13	WS14	WS15
Made Ground Thickness (m)	2.10	1.5	1.2	0.5	0.4	0.3	0.3	0.7	0.2	0.3	0.3	0.75	0.75	0.4	0.69
Whitecliff Sand Member (m)	2.9	3.5	1.8	2.5	2.6	4.7	0.7	2.30	1.8	2.70	1.70	-	2.25	2.6	2.46
London Clay Thickness (m)	-	-	-	-	-	-	-	-	-	-	-	2.25	-	-	2.25
End of BH depth (m)	5.00	5.00	3.00	3.00	3.00	5.00	1.00	3.00	2.00	3.00	2.00	3.00	3.00	3.00	-
Thickness of sand known?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	-

Water Strike Depth (mbgl)	No	1.8	1.0	No	No	No	No	No	No	No	1.3	No	No	No	-
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The borehole results and associated monitoring showed the presence of Made Ground and some contamination of the Made Ground and underlying sands and gravels. Contaminated Made Ground soils were identified in boreholes WS1, WS2, WS7, W12 and WS13 (generally in the southern and western areas of the site). Gas monitoring demonstrated that on-site migration of ground gases was occurring across the southern boundary of the site in the vicinity of borehole WS1, with the gas likely to be arising from the former area of landfilling immediately to the south of the site.

An Annotated SI Plan is enclosed which illustrates the results and conclusions taken from the Geo-Environmental GI Report (May 2015).

Potential for recovery of aggregate

Historic mapping shows that sand was previously extracted from within the vicinity and the pits filled with different types of waste. The site itself has been a waste transfer station for a significant period of time.

The site is relatively modest in size. The borehole results indicate a reasonable depth of the Whitecliff Sand Member, however, the sand lies at a depth below Made Ground across all of the site. Ground investigation has confirmed that contamination is present in the Made Ground in the southern and western parts of the site (WS1, WS2, WS7, W12 and WS13). Material identified in Borehole WS8 has been classified as "inert waste".

Geo-Environmental have advised that, in areas where contamination has been identified, remedial measures such as validation sampling and laboratory testing of soils at formation level would be required for the protection of end users. Should the Made Ground at the above locations remain on site at the time of residential development, remedial measures such as removal of sufficient depth of Made Ground and the introduction of clean soils in the soft landscaped areas would be required. Furthermore, in order to mitigate against gas migration, a 'sterile' strip of accessible land along the southern boundary would need to be incorporated into the site layout. Whilst the design of the Gas Interception System is to be finalised, it is anticipated that a significant trench would need to be constructed for installation of the system with the trench backfilled with a single size granular fill. This would coincide with boreholes WS1 and WS2.

Given its location, size, and the historic and current uses which have given rise to contamination across parts of the site, Parsons Construction have confirmed that it would not be practicable or viable to extract the underlying sand to any great depth, unless it is necessary to do so as part of the remedial strategy for the site. It would not be appropriate or practical to build at a substantially lower level than the adjacent land, given the surrounding land uses and existing vegetation. If this were to be done, the land would need to be restored to a level suitable for subsequent built development, either with excavated material which has been removed from site, cleaned and brought back to site, or inert material from elsewhere.

However, given variations in the topography across the site it is anticipated that some modification of the existing levels would be necessary prior to redevelopment for residential use. Limited excavation would also be required to prepare the site for footings and foundations for the built development and associated infrastructure. Parsons Construction has confirmed that any contaminated material would a) be taken off-site and subject to a Waste Acceptance Test prior to disposal or b) if there is potential for the material to be decontaminated and re-used it would be cleaned and returned to site.

Given the identified contamination on site any limited volume of sand from the Whitecliff Sand Member that is extracted through the construction of footings and foundations, or through the modification of site levels would require classification and testing for contamination before any decision could be made on its suitability for re-use on site or for exportation.

In view of the above it is not practicable or viable to undertake any substantial prior extraction of mineral at the CWM site. There may be limited opportunity to incidentally extract sand through some of the development works. However, this sand would need further analysis to determine the presence of any contamination and establish its suitability for use on or off site.

Yours sincerely



Adrian Lynham

Associate Director

For and on behalf of WYG

CC: J Bray (WYG)

M Parsons (Parsons Construction)

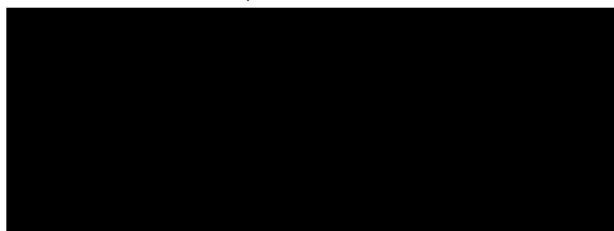
Enc:

Drawing No. MSA-01

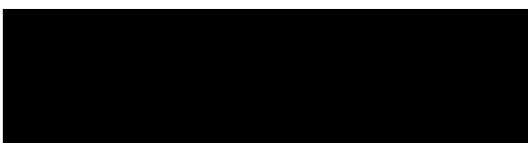
Annotated SI Plan



APPENDIX D – Hampshire CC letter re discharge of Condition 9 (Mineral Safeguarding)



Enquiries to Andy Denton
Direct Line 01962 846746
Date 5 March 2020

My reference CONS/2020/0150
Your reference DC/19/86144
Email 

Dear Sir/Madam,

Discharge of condition numbers 3 (construction method statement), 4 (access), 5 (materials/external works/levels), 6 (contaminated land investigation/remediation), 8 (drainage), 9 (mineral safeguarding), 12 (landscaping/planting) and 15 (noise) of planning permission F/16/78074 for residential development at CWM Site, Knowle Lane, Eastleigh, SO50 7BT.

Thank you for consulting Hampshire County Council (HCC) as the mineral planning authority (MPA) with regards to the above planning application. Specifically, with regard to the discharge of condition 9 (mineral safeguarding).

We would like to take this opportunity to acknowledge and welcome the inclusion of condition 9, pertaining to the requirement for the production of a Mineral Recovery Statement prior to the commencement of development.

Having reviewed the information uploaded to the Eastleigh Borough Council planning portal in support of application DC/19/86144, we note that at the current time no Minerals Recovery Statement has been produced and provided for scrutiny.

With regard to this, we acknowledge that within the Minerals Safeguarding Letter, produced by WYG under reference number A087766/HCC-1, dated 18th March 2016, Parsons Construction initially agreed that any contaminated material excavated during development could be returned to site and reused following decontamination where appropriate.

The letter goes on to state that 'given the identified contamination on site any limited volume of sand from the Whitecliff Sand Member that is extracted through the construction of footings and foundations, or through the

modification of site levels would require classification and testing for contamination before any decision could be made on its suitability for re-use or for exportation.’.

While we welcome the above agreements, we would like to be informed of the methodology the applicant is proposing to use to record quantities of excavated viable mineral resource that can be reused on site. As well as those minerals that are exported for decontamination and returned to site.

As such, whilst we do not object to the discharge of condition 9 of planning permission F/16/78074 in principle, we would like to request that the applicant adheres to the wording of the condition regarding the production of a Mineral Recovery Statement.

As described within condition 9, this statement should include a method to record the quantity of recovered mineral (re-use on site or off site) and to report this data to HCC as the MPA. A record should also be kept of any materials that are removed from site and subsequently returned to site for re-use following decontamination. This statement should also contain further agreement from the applicant that incidental extraction of viable mineral resources has been considered within the development plans.

In the absence of the requested information on how the potential minerals will be handled by the development, the proposal is considered to be contrary to **Policy 15 (Safeguarding – mineral resources)** of the adopted Hampshire Minerals and Waste Plan (2013).

Hampshire County Council is available to discuss this further with Eastleigh Borough Council, as well as the applicant, in forming a suitable agreement following the receipt of the required information.

Yours faithfully,

Andy Denton
Policy Officer



APPENDIX E – Site Investigation Exploratory Hole Logs

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS1 Sheet 1 of 1	
Project Name: CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450383E - 118765N		Hole Type WS	
Location: Knowle Lane, Fair Oak				Level:		Scale 1:25	
Client: Parsons Construction Limited				Dates: 17/03/2015		Logged By DW	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								Concrete. MADE GROUND	
		0.50	ES		0.40			Orangeish brown sand and sandy clay with much fine to coarse grained gravel of brick, concrete and clinker with occasional rootlets. MADE GROUND	
		1.00	ES		0.70			Dark brown sand and sandy clay with some fine to coarse grained gravel of brick, concrete, wood, metal, plastic, glass and paper with occasional rootlets and slight organic odour. MADE GROUND	1
		2.00	ES		2.10			Greyish brown slightly clayey fine to medium grained SAND. WHITECLIFF SAND MEMBER	2
					4.10			Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	4
					5.00		End of Borehole at 5.00m	5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Hole dry on completion. Standpipe installed to 5.0m bgl.





Geo-Environmental
www.gesi.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS2

Sheet 1 of 1

Project Name: CWM Site, Knowle Lane,
Fair Oak

Project No.
GE10615

Co-ords: 450338E - 118747N

Hole Type
WS

Location: Knowle Lane, Fair Oak

Level:

Scale
1:25

Client: Parsons Construction Limited

Dates: 17/03/2015

Logged By
DW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10			Tarmac overlying concrete sub base. MADE GROUND	
		0.20	ES		0.30			Orangeish brown sand with much fine to coarse grained gravel of brick, concrete, tarmac and clinker and occasional rootlets. MADE GROUND	
		0.50	ES					Yellowish brown sand with occasional rootlets. MADE GROUND	
					1.20			Dark brown clayey sand and sandy clay with some wood, plastic, paper, fabric and metal. MADE GROUND	1
		1.30	ES		1.50			Greyish brown slightly clayey fine to medium grained SAND. WHITECLIFF SAND MEMBER	2
					2.30			Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	3
					3.80			Reddish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	4
					4.00			Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					5.00			End of Borehole at 5.00m	5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		2.10	1.80			Water strike at 2.10m bgl, rose to 1.80m bgl after 10 minutes. Standpipe installed to 3.50m bgl.			





Geo-Environmental
www.gesi.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS3

Sheet 1 of 1

Project Name: CWM Site, Knowle Lane,
Fair Oak

Project No.
GE10615

Co-ords: 450332E - 118782N

Hole Type
WS

Location: Knowle Lane, Fair Oak

Level:

Scale
1:25

Client: Parsons Construction Limited

Dates: 17/03/2015

Logged By
DW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.10			Tarmac. MADE GROUND Orangeish brown sand with much fine to coarse grained gravel of brick, concrete and clinker. MADE GROUND	
		0.50	ES						
		1.00	ES						
					1.20			Greyish brown and orange fine to coarse grained SAND. WHITECLIFF SAND MEMBER	
					2.20			Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					3.00			End of Borehole at 3.00m	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		1.00	0.00			Water strike at 1.00m bgl. Backfilled with arisings.			



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS4 Sheet 1 of 1			
Project Name: CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450316E - 118813N		Hole Type WS			
Location: Knowle Lane, Fair Oak				Level:		Scale 1:25			
Client: Parsons Construction Limited				Dates: 23/03/2015		Logged By AB			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.20			Light grey brown silty coarse sand with frequent concrete and brick fragments. MADE GROUND	1
		0.50	ES		0.50			Dark brown silty clayey SAND with occasional gravel and carbonaceous inclusions. Gravel is fine sub-angular flint. MADE GROUND	
					0.80			Light brown slightly silty fine SAND with occasional gravel. Gravel is fine to medium sub-angular to angular flint. WHITECLIFF SAND MEMBER	
					1.00			Light brown fine to medium SAND. WHITECLIFF SAND MEMBER	
					2.50			Orange-brown to yellowish brown fine to medium SAND with occasional clayey lenses. WHITECLIFF SAND MEMBER	
					3.00			Medium strength dark orange-brown fine sandy CLAY with occasional ferruginous inclusions. WHITECLIFF SAND MEMBER	
		3.00	PP	1.0kg/cm2	3.00		End of Borehole at 3.00m		3
									4
									5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
						Hole dry on completion. Collapsed to 2.60m bgl.			



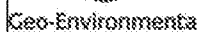
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS5 Sheet 1 of 1	
Project Name: CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450354E - 118825N		Hole Type WS	
Location: Knowle Lane, Fair Oak				Level:		Scale 1:25	
Client: Parsons Construction Limited				Dates: 23/03/2015		Logged By AB	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES				Light grey brown silty coarse sand with frequent concrete and brick fragments and occasional fine sub-angular flint gravel. MADE GROUND	1	
		0.40					Light brown slightly clayey fine to medium SAND. WHITECLIFF SAND MEMBER		
		0.50	ES				Orange-brown occasionally clayey fine to medium SAND. WHITECLIFF SAND MEMBER		
		0.70					Light yellowish brown fine to medium SAND. WHITECLIFF SAND MEMBER		
		1.05							
		1.80					Light grey and orangeish brown fine to medium SAND. WHITECLIFF SAND MEMBER		
		2.80					Dark orangeish brown fine to medium SAND with occasional clayey lenses. WHITECLIFF SAND MEMBER	2	
		3.00					End of Borehole at 3.00m		
								3	
								4	
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks Hole dry on completion. Collapsed to 2.60m bgl.			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				



		Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS6 Sheet 1 of 1	
Project Name:		CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450393E - 118827N		Hole Type WS	
Location:		Knowle Lane, Fair Oak				Level:		Scale 1:25	
Client:		Parsons Construction Limited				Dates: 17/03/2015		Logged By DW	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.30			Orangeish brown sand with much fine to coarse grained gravel of brick, concrete and rare clinker. MADE GROUND	1
		0.50	ES					Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					2.80			Reddish brown and orange fine to medium grained SAND. WHITECLIFF SAND MEMBER	3
					3.00			Orangeish brown and grey fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					5.00		End of Borehole at 5.00m		5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
						Hole dry on completion. Standpipe installed to 5.0m bgl.			





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Borehole No.

WS7

Sheet 1 of 1

Project Name:

CWM Site, Knowle Lane,
Fairoak

Project No.
GE10615

Co-ords: 450405E - 118790N

Hole Type
WS

Location:

Knowle Lane, Fair Oak

Level:

Scale
1:25

Client:

Parsons Construction Limited

Dates: 17/03/2015

Logged By
DW

1
2
3
4
5



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Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS8

Sheet 1 of 1

Project Name: CWM Site, Knowle Lane,
Fair Oak

Project No.
GE10615

Co-ords: 450363E - 118776N

Hole Type
WS

Location: Knowle Lane, Fair Oak

Level:

Scale
1:25

Client: Parsons Construction Limited

Dates: 23/03/2015

Logged By
AB

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES	0.8kg/cm2	0.70 0.75 0.85 1.10 2.10 3.00		Brownish grey slightly silty clayey medium sand with frequent brick, concrete, carbonaceous inclusions and occasional fine sub-angular to angular flint gravel. MADE GROUND Light grey fine to medium SAND. WHITECLIFF SAND MEMBER Low strength orangish brown slightly fine sandy CLAY. WHITECLIFF SAND MEMBER Orange slightly silty medium to fine SAND. WHITECLIFF SAND MEMBER Light grey brown fine to medium SAND. WHITECLIFF SAND MEMBER	1	
		0.50	ES						
		0.80	PP						
							Orangish brown and grey occasionally clayey fine to medium SAND. WHITECLIFF SAND MEMBER	2	
							End of Borehole at 3.00m	3	
								4	
								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Hole dry on completion. Collapsed to 2.80m bgl.

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS9 Sheet 1 of 1	
Project Name: CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450350E - 118799N		Hole Type WS	
Location: Knowle Lane, Fair Oak				Level:		Scale 1:25	
Client: Parsons Construction Limited				Dates: 23/03/2015		Logged By AB	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.20		Dark brown slightly fine sandy silt with occasional concrete and brick fragments, and occasional fine sub-angular to angular flint gravel.		
							MADE GROUND		
		0.50	ES		0.50		Orangeish brown silty CLAY with rare gravel. Gravel is fine sub-angular to angular flint.		
							WHITE CLIFF SAND MEMBER		
					0.90		Orangeish brown and light yellow-brown clayey fine to medium SAND.		
							WHITE CLIFF SAND MEMBER		
					2.00		End of Borehole at 2.00m		

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Hole dry on completion. No recovery between 2.0m bgl and 3.0m bgl. Backfilled with arisings.





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Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS10

Sheet 1 of 1

Project Name: CWM Site, Knowle Lane,
Fair Oak

Project No.
GE10615

Co-ords: 450364E - 118810N

Hole Type
WS

Location: Knowle Lane, Fair Oak

Level:

Scale
1:25

Client: Parsons Construction Limited

Dates: 23/03/2015

Logged By
AB

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.15			Dark brown slightly clayey silt with occasional fine to medium sub-angular to sub-rounded flint gravel. MADE GROUND	
					0.30			Light brown slightly silty fine SAND with occasional gravel. Gravel is fine to medium sub-angular to sub-rounded flint. MADE GROUND	
		0.50	ES					Light orangeish brown slightly clayey fine to medium SAND. WHITECLIFF SAND MEMBER	
					1.00			Light grey-brown and orange-brown fine to medium SAND. WHITECLIFF SAND MEMBER	1
					3.00			End of Borehole at 3.00m	3
									4
									5

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Hole dry on completion. Backfilled with arisings.



Geo-Environmental

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesi.net

Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name:	CWM Site, Knowle Lane, Fairoak	Project No. GE10615	Co-ords: 450343E - 118764N	Hole Type WS
Location:	Knowle Lane, Fairoak		Level:	Scale 1:25
Client:	Parsons Construction Limited		Dates: 17/03/2015	Logged By DW

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.10			Tarmac overlying concrete sub base. MADE GROUND	
					0.30			Orangeish brown sand with much fine to coarse grained gravel of brick, concrete, tarmac and clinker. MADE GROUND	
		0.50	ES					Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					1.10			Reddish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					1.80			Orangeish brown fine to medium grained SAND. WHITECLIFF SAND MEMBER	
					2.00		End of Borehole at 2.00m		2
									3
									4
									5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
		1.80	1.30			Water strike at 1.50m bgl, rose to 1.30m bgl after 10 minutes. Backfilled with arisings.			





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Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

WS12

Sheet 1 of 1

Project Name:	CWM Site, Knowle Lane, Fair Oak	Project No.	GE10615	Co-ords:	450313E - 118771N	Hole Type	WS
Location:	Knowle Lane, Fair Oak			Level:		Scale	1:25
Client:	Parsons Construction Limited			Dates:	23/03/2015	Logged By	AB

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES					Dark brown silty fine to medium sand with frequent brick, concrete and tarmac fragments and occasional fine to medium sub-angular flint. MADE GROUND	
		0.50	ES						
					0.75				
					0.85			Brown and grey mottled slightly fine to medium sandy CLAY. LONDON CLAY	
		1.00	PP	3.5kg/cm2				Orangeish brown and grey mottled fine sandy CLAY with rare ferruginous sandstone inclusions and claystone inclusions. LONDON CLAY	1
		1.50	PP	1.5kg/cm2					
		2.00	PP	3.0kg/cm2					2
		2.50	PP	2.8kg/cm2					
		3.00	PP	4.2kg/cm2	3.00			End of Borehole at 3.00m	3
									4
									5
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
						Hole dry on completion. Backfilled with arisings.			



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesi.net		Borehole Log				Borehole No. WS13 Sheet 1 of 1																		
Project Name: CWM Site, Knowle Lane, Fair Oak		Project No. GE10615		Co-ords: 450283E - 118794N		Hole Type WS																		
Location: Knowle Lane, Fair Oak				Level:		Scale 1:25																		
Client: Parsons Construction Limited				Dates: 23/03/2015		Logged By AB																		
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description																
		Depth (m)	Type	Results																				
		0.20	ES		0.30		Brown slightly fine sandy silty clay with frequent roots (2mm). TOPSOIL																	
		0.50	ES				Orangeish brown clayey fine to medium sand with occasional brick fragments and fine to coarse angular ferruginous sandstone. MADE GROUND																	
		1.00	PP	1.5kg/cm2	0.75		Soft to firm orangeish brown fine sandy CLAY. WHITECLIFF SAND MEMBER																	
		1.50	PP	1.5kg/cm2																				
		2.00	PP	1.5kg/cm2																				
		2.50	PP	1.0kg/cm2	2.50		Orangeish brown and grey mottled CLAY. WHITECLIFF SAND MEMBER																	
	3.00	PP	1.5kg/cm2	3.00		End of Borehole at 3.00m																		
<table border="1"> <tr> <th colspan="2">Casing</th> <th colspan="2">Water Strikes (mbgl)</th> <th colspan="2">Chiselling (mbgl)</th> </tr> <tr> <th>Diameter</th> <th>Depth (m)</th> <th>Depth Strike</th> <th>Rose to</th> <th>Depth from</th> <th>Depth to</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>		Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to							Remarks Hole dry on completion. Backfilled with arisings.				
Casing		Water Strikes (mbgl)		Chiselling (mbgl)																				
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to																			



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Borehole No.

WS14

Sheet 1 of 1

Project No.	GF10615
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Co-ords: 450306E - 118796N

Hole Type
WS

Location: Knowle Lane, Fair Oak

Level:

Scale
1:25

Client: Parsons Construction Limited

Dates: 23/03/2015

Logged By
AB

1

Issue No	A	Drilled by	GP	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. CP101	
Project CWM Site, Knowles Lane							
Job No	CWM141.D	Date Started	30/06/2019	Ground Level		Co-Ordinates	
		Date Completed	31/06/2019				Depth 8.00
Client						Method/Plant	Sheet
Macra Limited						D150	1 of 3

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			0.1	Concrete slab SURFACING				
			(0.40)	Type 1 sub-base with some gravel sized fragments of brick and concrete				
			0.50	MADE GROUND	0.5	disturbed		
			(1.40)	medium dense dark brown grey very clayey sand with some plastic, metal fragments, wood and paper.				
			1.90		1.5	disturbed		
			(3.10)	medium dense greenish grey slightly clayey SAND				

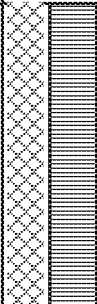
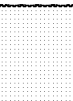
GENERAL REMARKS

Issue No	A	Drilled by Jackson Drilling	Logged by RB	Approved by RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY				Borehole No. CP101
Project CWM Sited, Knowles Lane				
Job No	CWM141.D	Date Started	30/06/2019	Ground Level
		Date Completed	31/06/2019	Co-Ordinates
Client	Macra Limited			Method/Plant
				D150
				Depth
				8.00
				Sheet
				2 of 3

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			(3.10)	medium dense greenish grey slightly clayey SAND				
			5.20	NATURAL SOILS				
			(0.20)	Medium dense brown very gravelly SAND				
			5.40	NATURAL SOILS				
			(1.90)	Soft to firm brown silty sandy CLAY				
			7.00					

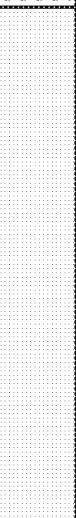
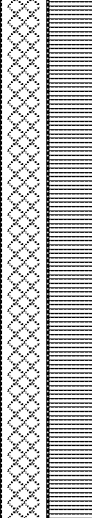
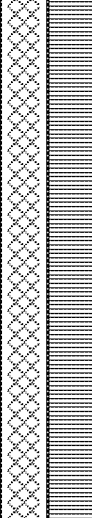
GENERAL REMARKS

Issue No	A	Drilled by Jackson Drilling	Logged by RB	Approved by RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY				Borehole No. CP101
Project CWM Site, Knowles Lane				
Job No	CWM141.D	Date Started	30/06/2019	Ground Level
		Date Completed	31/06/2019	
Client	Macra Limited			Method/Plant
				D150
				Depth
				8
				Sheet
				3 of 3

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			(1.90)	Soft to firm brown silty sandy CLAY				
			7.30	NATURAL SOILS				
			(0.70)	Firm grey sandy CLAY				
			8.00	NATURAL SOILS				
				BASE OF BOREHOLE				

GENERAL REMARKS

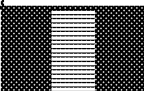
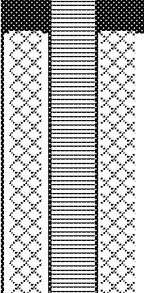
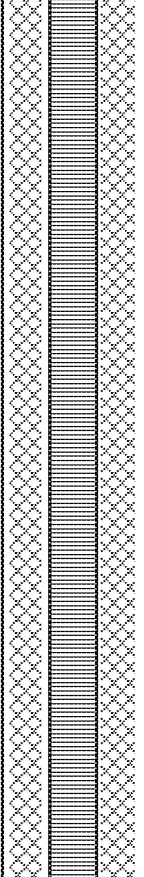
Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS102	
Project CWM Site, Knowles Lane							
Job No	CWM141.D	Date Started	31/06/2019	Ground Level		Co-Ordinates	
		Date Completed	31/06/2019				Depth 2.45
Client						Method/Plant	Sheet
Macra Limited						Competitor 130	1 of 1

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			(0.2) 0.2	Compacted granular sub-base and gravel MADE GROUND				
			(0.40)	medium dense orange brown very gravelly sand with fragments of brick and concrete.	0.25	disturbed		
			(0.8)		0.5	disturbed		
			1.0	MADE GROUND				
			(1.45)	medium dense greenish grey slightly clayey SAND				
			2.45	NATURAL SOILS				
				End of probe hole				

GENERAL REMARKS

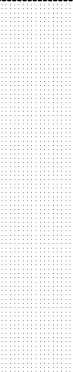
- 2.00-2.45m blows per 75mm = 18, 7(0.2), 23, 27 (0.1)
- Borehole dry during drilling

Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS103	
Project CWM Site, Knowles Lane							
Job No	CWM141.D	Date Started	31/06/2019	Ground Level		Co-Ordinates	
		Date Completed	31/06/2019				Depth 5.00
Client Macra Limited						Method/Plant Competitor 130	Sheet 1 of 2

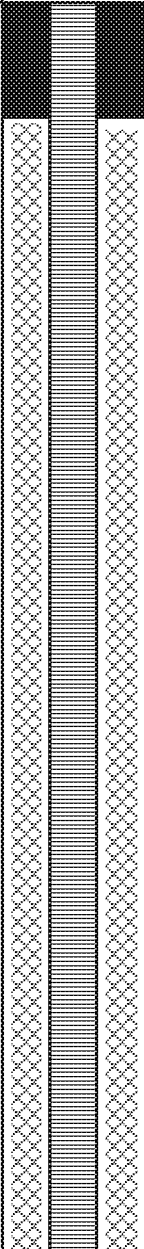
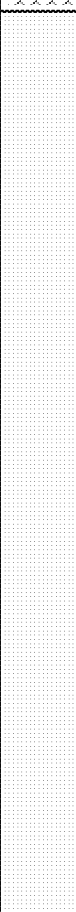
STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			(0.2) 0.2	Concrete slab MADE GROUND				
			(0.8) 1.0	medium dense orange brown very gravelly sand with fragments of brick and concrete.	0.5	disturbed		
			(3.0)	medium dense dark brown grey very clayey sand with some plastic, metal fragments, wood and paper.	1.0	disturbed		
				MADE GROUND				

GENERAL REMARKS 1 2.00-2.45m blows per 75mm - 1,2,1,2,2,2 2 4.00-4.45m blows per 75mm = 2,3,3,3,3,3 3 Borehole dry during drilling	
--	--

Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS103	
Project CWM Site, Knowles Lane							
Job No	CWM141.D	Date Started	31/06/2019	Ground Level		Co-Ordinates	
		Date Completed	31/06/2019				Depth 5.00
Client Macra Limited						Method/Plant Competitor 130	Sheet 2 of 2

STRATA					SAMPLES & TESTS			Backfill	
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result		
			4.0	medium dense dark brown grey very clayey sand with some plastic, metal fragments, wood and paper. MADE GROUND					
			(1.0)	BASE OF BOREHOLE					
			5.0	NATURAL SOILS					
				End of borehole					

GENERAL REMARKS 1 2.00-2.45m blows per 75mm - 1,2,1,2,2,2 2 4.00-4.45m blows per 75mm = 2,3,3,3,3,3 3 Borehole dry during drilling
--

Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB	
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS104		
Project CWM Sited, Knowles Lane								
Job No	CWM141.D	Date Started	31/06/2019	Ground Level		Co-Ordinates		
		Date Completed	31/06/2019				Depth 4.00	
Client						Method/Plant	Sheet	
Macra Limited						Competitor 130	1 of 1	
STRATA				SAMPLES & TESTS			Backfill	
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No		Test Result
			0.10	Weak concrete				
			(0.8)	medium dense orange brown very gravelly sand with fragments of brick and concrete.	0.25	disturbed		
			0.90	MADE GROUND	0.50	disturbed		
			4.00	medium dense greenish grey slightly clayey SAND				
				NATURAL SOILS				
GENERAL REMARKS 1 2.00-2.45m blows per 75mm = 2,3, 3,3,3,3 2 4.00-4.45m blows per 75mm = 3,4,3,4,5,5 3 Borehole dry during drilling								

Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS105	
Project CWM Site, Knowles Lane							
Job No	CWM141.D	Date Started	31/06/2019	Ground Level	Co-Ordinates		Depth
		Date Completed	31/06/2019				5.00
Client					Method/Plant		Sheet
Macra Limited					Competitor 130		1 of 2

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
			(1.90)	Grass over sandy topsoil				
				medium dense orange brown gravelly sand.				
			0.65	MADE GROUND				
				medium dense greenish grey silty SAND				
			(3.35)					
			4.00	NATURAL SOILS				

GENERAL REMARKS

- 2.00-2.45m blows per 75mm = 3,3,3,4,5,5
- 4.00-4.45m blows per 75mm = 3,4,5,5,5,6
- Borehole dry during drilling

Issue No	A	Drilled by	CS	Logged by	RB	Approved by	RB
 Forge Environmental Management Ltd The Forge, Lower Vagg, Chilthorne Damer, Yeovil, Somerset. BA21 3PY						Borehole No. WS105	
Project		CWM Site, Knowles Lane					
Job No	CWM141.D	Date Started	31/06/2019	Ground Level	Co-Ordinates		Depth
		Date Completed	31/06/2019				5.00
Client					Method/Plant		Sheet
Macra Limited					Competitor 130		2 of 2

STRATA					SAMPLES & TESTS			Backfill
Water	Level (mOD)	Legend	Depth (thickness)	Strat Description	Depth	Type No	Test Result	
				medium dense greenish grey silty SAND				
				NATURAL SOILS				
				End of Borehole				

GENERAL REMARKS 1 2.00-2.45m blows per 75mm = 3,3,3,4,5,5 2 4.00-4.45m blows per 75mm = 3,4,5,5,5,6 3 Borehole dry during drilling
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APPENDIX F – Material Movement Daily Record Sheet

MINERAL RECOVERY STATEMENT

R & R Contractors

SITE WON MATERIAL MOVEMENT DAILY RECORD SHEET

Date	Source (Site grid ref)	Volume (estimated or weighed)	Visually Acceptable (Y/N & initial)	Stockpile Reference	Sampled (Sample ref)	Location within the works (grid reference & lift)