



Celtic Technologies

Borehole No

BH201

Sheet 1 of 1

enGlobeProject Name
NGPH ArundelProject No.
C1820

Co-ords: 501291E - 106768N

Hole Type
Rotary

Location: Ford Road, Arundel BN18 9DX

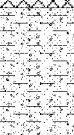
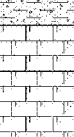
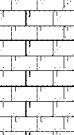
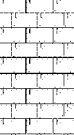
Level: 3.42 m AOD

Scale
1:75

Client: National Grid Property Holdings

Dates: 16/11/2020

Logged By
SG

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		5.00	PID1	0.2	1.20	2.22		Hand pitted: Made Ground. Light brown sand and gravel with much brick fragments (MADE GROUND)	1
					2.70	0.72		Orange brown stiff CLAY with flint gravel (Gravelly CLAY)	2
								Grey / black weathered CHALK (CHALK - Natural)	3
					4.20	-0.78		Grey / black weathered CHALK (CHALK - Natural)	4
					5.70	-2.28		Grey / black weathered CHALK (CHALK - Natural)	5
								Light orange clay and CHALK (CHALK - Natural)	6
		5.00	PID1	0.2	7.20	-3.78		End of Borehole at 7.20 m	7
									8
									9
									10
									11
									12
									13
									14

Remarks: Casing used throughout. The installation pipe is 100mm and the gravel pack is 2mm-4mm washed





Celtic Technologies

Borehole No

BH202

Sheet 1 of 1

enGlobeProject Name
NGPH ArundelProject No.
C1820

Co-ords: 501282E - 106765N

Hole Type
Rotary

Location: Ford Road, Arundel BN18 9DX

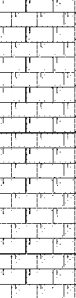
Level: 3.59 m AOD

Scale
1:75

Client: National Grid Property Holdings

Dates: 17/11/2020

Logged By
SG

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					1.20	2.39		Hand pitted: Made Ground. Reworked chalk and red bricks (MADE GROUND)	1
								No return. (MADE GROUND)	2
					2.70	0.89		Concrete slab (100 mm thick) at 3 m. Limited core recovery. Reworked chalk, possibly becoming natural by 4.5 m. Black tar staining from 6.5m. (MADE GROUND)	3
									4
									5
									6
					7.20	-3.61		White clay and CHALK with flint bands. Tar staining between 7.2 m to 9 m. (CHALK - Natural)	7
		7.50	PID1	176.0					8
		7.70	PID2	26.7					
		7.90	PID3	164.0					
		8.90	PID4	4.4					9
		9.50	PID5	75.7					
		9.90	PID6	59.0					10
					10.20	-6.61		End of Borehole at 10.20 m	
									11
									12
									13
									14
		Type	Results						

Remarks: Casing used throughout. The installation pipe is 100mm and the gravel pack is 2mm-4mm washed





Celtic Technologies

Borehole No

BH203

Sheet 1 of 1

enGlobeProject Name
NGPH ArundelProject No.
C1820

Co-ords: 501283E - 106755N

Hole Type
Rotary

Location: Ford Road, Arundel BN18 9DX

Level: 3.37 m AOD

Scale
1:75

Client: National Grid Property Holdings

Dates: 17/11/2020

Logged By
SG

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					1.20	2.17		Hand pitted: Made Ground. Red bricks in sand and gravel (MADE GROUND)	1
								No return. (MADE GROUND)	2
					2.70	0.67		Made Ground. Brick, ash, clinker (MADE GROUND)	3
		3.50	PID1	1.2	3.00	0.37		Grey / black gravelly SAND with flint and chalk (Gravelly SAND)	4
		4.00	PID2	0.9					
		5.00	PID3	1.4	5.00	-1.64		White / grey clayey CHALK with flint, occasional black sandy lenses and tar staining. (CHALK - Natural)	5
		5.70	PID4	20.9					6
		6.00	PID5	0.9					7
		7.00	PID6	22.8					8
		7.50	PID7	14.6					9
		8.50	PID8	0.8					10
		9.00	PID9	1.0					11
		10.00	PID10	0.8	10.20	-6.84		End of Borehole at 10.20 m	12
									13
									14

Remarks: Casing used throughout. The installation pipe is 100mm and the gravel pack is 2mm-4mm washed



[illegible]

Remarks: Casing used throughout. The installation pipe is 100mm and the gravel pack is 2mm-4mm washed



APPENDIX E WASTE DISPOSAL DOCUMENTATION

Conveyance & Waste Transfer Note

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

Tel: [REDACTED]
Waste Carrier Registration CBDU59437



Ticket No

Customer	[REDACTED]	Location	[REDACTED]	DATE	[REDACTED]
Contact	[REDACTED]	Address	[REDACTED]		
Order No	[REDACTED]		[REDACTED]		

Producer's Certificate

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

Disposal Certificate

Vehicle Reg No	[REDACTED]	Ticket No	[REDACTED]
Driver's	[REDACTED]	Disposer's	[REDACTED]
Signature	[REDACTED]	Signature	[REDACTED]
PRINT NAME	[REDACTED]	PRINT NAME	[REDACTED]
Disposal Site	BAWML/10146	Date	[REDACTED]
		Time	[REDACTED]

**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 £ [REDACTED]
Total £ [REDACTED]
VAT £ [REDACTED]

VAT No. 819 1570 23

Conveyance & Waste Transfer Note

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

Tel: [REDACTED]
Waste Carrier Registration CBDU59437



Ticket No

Customer	[REDACTED]	Location	[REDACTED]	DATE	[REDACTED]
Contact	[REDACTED]	Address	[REDACTED]		
Order No	[REDACTED]		[REDACTED]		

Producer's Certificate

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

Disposal Certificate

Vehicle Reg No	[REDACTED]	Ticket No	[REDACTED]
Driver's	[REDACTED]	Disposer's	[REDACTED]
Signature	[REDACTED]	Signature	[REDACTED]
PRINT NAME	[REDACTED]	PRINT NAME	[REDACTED]
Disposal Site	BAWML/10146	Date	[REDACTED]
		Time	[REDACTED]

**NO ASBESTOS, RUBBER TRACKS,
GAS CYLINDERS, TYRES, TREE
ROOTS, BATTERIES, MATTRESSES,**

**Overloaded bins will
be refused collection**

Net price £ [REDACTED]
Total £ [REDACTED]



Customer	WASTE MANAGEMENT LTD	Location	170 CULFIC TECHNDL	DATE
Contact	WASTE	Address	FORD ROAD	
Order No	WASTE/10136			

Producer's Certificate

Container	1.2M ³ SKIP	Brief	WASTE CONSTRUCTION AND DEMOLITION
Quantity	1	Description	WASTE
Service	WASTE	of waste	
Extra	1.2M ³ SKIP NO LVL	Signature	<i>N. O. S. C. B.</i>
SIC Code	13200	PRINT NAME	
Info		Date	10/10
Sec 62 No		Time	12.30

Disposal Certificate

Vehicle Reg No		Ticket No	
Driver's		Disposer's	
Signature		Signature	
PRINT NAME		PRINT NAME	
Disposal Site	EAWML/10136	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 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

APPENDIX F ENVIRONMENTAL MONITORING

Baseline Monitoring undertaken prior to start of works
Noise - using portable 3M SD-200 Noise Meter (CELT 220)

Monitoring during drilling BH201

Monitoring during drilling BH202

Monitoring during drilling BH203

Location	Time /			L _{EQ}	Max	Min	Time /			L _{EQ}	Max	Min	Time /			L _{EQ}	Max	Min
	Date	Duration					Date	Duration					Date	Duration				
E	16/11/2020	09:48 - 10:03		56.3	78.7	47.6	16/11/2020	15 mins		61.8	78.2	46.4	17/11/2020	15 mins		58.2	74.7	46.5
N	16/11/2020	11:46 - 12:33		60.2	76.2	48	16/11/2020	15 mins		80.3	93.4	49	17/11/2020	15 mins		70	80.1	45.5
W	16/11/2020	10:30 - 11:23		66.1	81.9	43.5	16/11/2020	15 mins		65.3	80.7	45.1	17/11/2020	55 mins		61.7	77.6	43
S	16/11/2020	10:05 - 10:28		52.1	74.1	43.5	16/11/2020	15 mins		54.5	76.1	44	17/11/2020	15 mins		51.9	68.4	43.6

Vapour Pho Check Tiger PID Serial No. T-109955 (CELT 254)

Location	Date	Time	Max ppm (total VOCs)	Date	Time	Max ppm (total VOCs)	Date	Time	Max ppm (total VOCs)	Date	Time	Max ppm (total VOCs)
E	16/11/2020	09:50	0	16/11/2020	13:38	0	17/11/2020	09:00	0	17/11/2020	13:00	0
N	16/11/2020	11:47	0	16/11/2020	14:05	0	17/11/2020	09:30	0	17/11/2020	13:20	0
W	16/11/2020	10:30	0	16/11/2020	14:25	0	17/11/2020	10:00	0	17/11/2020	15:20	0
S	16/11/2020	10:05	0	16/11/2020	14:45	0	17/11/2020	11:00	0	17/11/2020	16:00	0

APPENDIX G DIPPING RECORDS

Borehole	East	North	nAOD	Dip to base	Base mAOD	Response zone	Dip to water	Water level mAOD	Time	Date	Dip to water	Water level mAOD	Time	Date	Dip to water	Water level mAOD	Time	Date	Dip to water	Water level mAOD	Time	Date
BH105	501334.1	106736.5	2.48	7.62	-5.14	6-10m	1.81	0.67	09:56	19/11/2020	0.83	1.65	14:54	01/12/2020	2.23	0.25	08:10	02/12/2020	0.45	2.03	14:06	02/12/2020
BH102	501274.2	106731.1	3.267	8.86	-5.593	6-10m	2.12	1.147	09:59	19/11/2020	1.59	1.677	15:07	01/12/2020	2.5	0.767	08:21	02/12/2020	1.37	1.897	14:09	02/12/2020
BH103s	501285.2	106770.2	3.654	4.27	0.616	2-4.5m	1.95	1.704	10:14	19/11/2020	2.08	1.574	15:03	01/12/2020	2.45	1.204	08:24	02/12/2020	2.23	1.424	14:13	02/12/2020
BH101d	501285.2	106770.3	3.659	9.47	-5.811	6-10m	2.66	0.999	10:17	19/11/2020	2.03	1.629	15:03	01/12/2020	3.13	0.529	08:25	02/12/2020	1.81	1.849	14:13	02/12/2020
BH201	501291.1	106768.3	3.418	7.14	-3.722	4-7m	2.46	0.958	10:05	19/11/2020	1.8	1.618	15:02	01/12/2020	2.9	0.518	08:25	02/12/2020	1.59	1.828	14:14	02/12/2020
BH202	501282.1	106765	3.593	9.78	-6.187	6-10m	1.77	1.823	10:09	19/11/2020	1.99	1.603	15:04	01/12/2020	2.63	0.963	08:24	02/12/2020	1.92	1.673	14:12	02/12/2020
BH203	501282.7	106754.9	3.365	9.47	-6.105	6-10m	2.3	1.065	10:03	19/11/2020	1.77	1.595	15:05	01/12/2020	2.63	0.735	08:23	02/12/2020	1.55	1.815	14:11	02/12/2020
BH204	501285.8	106749.3	3.341	4.94	-1.599	1.5-5m	2.28	1.061	10:01	19/11/2020	1.65	1.691	15:06	01/12/2020	2.64	0.701	08:22	02/12/2020	1.48	1.861	14:10	02/12/2020

APPENDIX H CHEMICAL ANALYSIS CERTIFICATES

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

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

e: steve.gronow@celtic-ltd.com

Analytical Report Number : 20-41212

Project / Site name:	Arundel	Samples received on:	12/11/2020
Your job number:	C1820	Samples instructed on/ Analysis started on:	12/11/2020
Your order number:	81231	Analysis completed by:	20/11/2020
Report Issue Number:	1	Report issued on:	20/11/2020
Samples Analysed:	1 leachate sample - 15 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: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number	1682757	1682758	1682759	1682760
Sample Reference	TP201	TP202	TP203	TP204
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.80	1.00	1.00
Date Sampled	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken	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
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	1.5

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	Chrysotile, Amosite, Loose Fibres
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	8.3	8	8
Electrical Conductivity	µS/cm	10	ISO 17025	320	120	350	87
Total Cyanide	mg/kg	1	MCERTS	6	3	< 1	7
Complex Cyanide	mg/kg	1	MCERTS	6	1	< 1	7
Free Cyanide	mg/kg	1	MCERTS	< 1	2	< 1	< 1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	830	1200	960	810
Sulphide	mg/kg	1	MCERTS	3.1	92	140	3.3
Total Chloride	mg/kg	5	NONE	250	180	140	210
Ammonium as NH ₄	mg/kg	0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5
Total Organic Carbon (TOC)	%	0.1	MCERTS	3.2	2.4	2	2.1

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number	1682757	1682758	1682759	1682760
Sample Reference	TP201	TP202	TP203	TP204
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.80	1.00	1.00
Date Sampled	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	MCERTS Status	Accred- itation

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	1.9	2.1	1.7	0.97
Acenaphthylene	mg/kg	0.05	MCERTS	4.5	4	2.9	2.4
Acenaphthene	mg/kg	0.05	MCERTS	0.67	0.66	0.92	0.23
Fluorene	mg/kg	0.05	MCERTS	3.2	3.2	2.3	0.89
Phenanthrene	mg/kg	0.05	MCERTS	33	30	20	7.7
Anthracene	mg/kg	0.05	MCERTS	12	9.5	7.3	3.7
Fluoranthene	mg/kg	0.05	MCERTS	78	62	32	23
Pyrene	mg/kg	0.05	MCERTS	66	52	28	21
Benzo(a)anthracene	mg/kg	0.05	MCERTS	51	40	21	18
Chrysene	mg/kg	0.05	MCERTS	32	26	14	12
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	42	35	22	17
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	30	21	9.5	9.1
Benzo(a)pyrene	mg/kg	0.05	MCERTS	46	34	21	16
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	21	18	11	7.9
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	6.2	4.9	2.8	2.3
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	23	18	12	8.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	449	361	210	150
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	47	21	17	18
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.9	2.9	9.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.8	1
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	31	21	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	66	31	43	67
Lead (aqua regia extractable)	mg/kg	1	MCERTS	510	390	220	210
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	1.1	< 0.3	< 0.3	0.8
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	25	32	44
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	290	410	270	670

Monoaromatics & Oxygenates

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number	1682757	1682758	1682759	1682760
Sample Reference	TP201	TP202	TP203	TP204
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.80	1.00	1.00
Date Sampled	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	Accred- itation Status	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 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
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	3.8	9.9	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	13	33	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	17	75	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	11	100	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	44	220	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 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
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	8.7	18	7.9	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	46	46	24	15
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	210	620	210	78
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	260	400	240	110
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	520	1100	480	200

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number	1682761	1682762	1682763	1682764
Sample Reference	TP205	TP206	TP206	TP207
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1,50	1,20	2,00	1,80
Date Sampled	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken	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
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	1.2

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile- Loose Fibres	-	Amosite, Crocidolite- Loose Fibres; Amosite, Chrysotile- Loose Fibrous Debris
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Detected

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8	8.1	8.1	8
Electrical Conductivity	µS/cm	10	ISO 17025	100	100	78	170
Total Cyanide	mg/kg	1	MCERTS	2	9	34	26
Complex Cyanide	mg/kg	1	MCERTS	2	9	34	26
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1
Total Sulphate as SO4	mg/kg	50	MCERTS	880	1200	1300	1900
Sulphide	mg/kg	1	MCERTS	18	7	160	57
Total Chloride	mg/kg	5	NONE	140	280	360	280
Ammonium as NH4	mg/kg	0.5	MCERTS	< 0.5	< 0.5	1100	13
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.4	3.1	-	5.2

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	< 0.2	0.6	< 0.2	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	0.4	69	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	0.8	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	< 1.0	2	69	< 1.0
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Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number				1682761	1682762	1682763	1682764
Sample Reference				TP205	TP206	TP206	TP207
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1,50	1,20	2,00	1,80
Date Sampled				11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	Accred- itation Status				
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	1.3	5.6	1100	680
Acenaphthylene	mg/kg	0.05	MCERTS	2.7	9.9	310	610
Acenaphthene	mg/kg	0.05	MCERTS	0.22	0.7	48	95
Fluorene	mg/kg	0.05	MCERTS	0.76	2.5	260	530
Phenanthrene	mg/kg	0.05	MCERTS	3.8	22	830	1900
Anthracene	mg/kg	0.05	MCERTS	2.4	14	270	760
Fluoranthene	mg/kg	0.05	MCERTS	11	67	600	1300
Pyrene	mg/kg	0.05	MCERTS	11	59	470	1000
Benzo(a)anthracene	mg/kg	0.05	MCERTS	9.8	50	270	600
Chrysene	mg/kg	0.05	MCERTS	6.5	41	150	400
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	12	65	190	440
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	3.5	17	72	290
Benzo(a)pyrene	mg/kg	0.05	MCERTS	11	52	160	380
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	5.8	28	66	160
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.5	8.4	16	48
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	6.6	29	75	170

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	90.6	471	4920	9410
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	21	24	79
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	1.3	3.4	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	< 0.2	1.1	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	16	21	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	30	40	28	55
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	430	300	250
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.9	1.5	1.5
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	25	18	19	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	160	150	230	430

Monoaromatics & Oxygenates

Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	2300	27
Toluene	ug/kg	1	MCERTS	< 1.0	< 1.0	2500	160
Ethylbenzene	ug/kg	1	MCERTS	< 1.0	< 1.0	110	18
p & m-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	2700	310
o-xylene	ug/kg	1	MCERTS	< 1.0	< 1.0	1200	480
MTBE (Methyl Tertiary Butyl Ether)	ug/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number					1682761	1682762	1682763	1682764
Sample Reference					TP205	TP206	TP206	TP207
Sample Number					None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)					1,50	1,20	2,00	1,80
Date Sampled					11/11/2020	11/11/2020	11/11/2020	11/11/2020
Time Taken					None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	Accred- itation Status	Accred- itation Status				
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS		< 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
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS		< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS		11	16	27	21
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS		47	61	64	68
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS		65	83	78	89
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS		91	190	130	120
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS		210	350	300	300
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS		< 0.001	< 0.001	2.3	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS		< 0.001	< 0.001	2.5	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS		< 0.001	< 0.001	5.1	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS		5.5	25	1100	1700
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS		20	77	880	1700
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS		150	850	1700	2800
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS		220	1100	1500	3800
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS		400	2000	5200	10000

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number	1682765	1682766	1682767	1682768
Sample Reference	TP208	TP209	TP210	TP211
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.50	0.60	1.00	0.80
Date Sampled	11/11/2020	11/11/2020	11/11/2020	12/11/2020
Time Taken	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
Moisture Content	%	0.01	NONE	11
Total mass of sample received	kg	0.001	NONE	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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.4	8.1	7.3	7
Electrical Conductivity	µS/cm	10	ISO 17025	390	210	110	70
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	260	74
Complex Cyanide	mg/kg	1	MCERTS	< 1	< 1	260	72
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	2
Total Sulphate as SO4	mg/kg	50	MCERTS	260	670	11000	17000
Sulphide	mg/kg	1	MCERTS	1.8	1.1	2.1	4.7
Total Chloride	mg/kg	5	NONE	110	210	250	180
Ammonium as NH4	mg/kg	0.5	MCERTS	< 0.5	< 0.5	0.9	< 0.5
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	0.9	1.9	3.1

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-41212
 Project / Site name: Arundel
 Your Order No: 81231

Lab Sample Number				1682765	1682766	1682767	1682768
Sample Reference				TP208	TP209	TP210	TP211
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.60	1.00	0.80
Date Sampled				11/11/2020	11/11/2020	11/11/2020	12/11/2020
Time Taken				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	0.42	0.98	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.83	6.5	0.76
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.41	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.37	1.3	0.34
Phenanthrene	mg/kg	0.05	MCERTS	0.27	2.3	11	5.5
Anthracene	mg/kg	0.05	MCERTS	< 0.05	4.3	4.8	1.5
Fluoranthene	mg/kg	0.05	MCERTS	0.42	29	29	12
Pyrene	mg/kg	0.05	MCERTS	0.46	27	39	11
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.28	24	25	7.6
Chrysene	mg/kg	0.05	MCERTS	0.21	17	22	5.9
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	22	32	7.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	8.3	8.4	4.8
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	19	20	6.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	7.9	14	4.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	2.9	4	1.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	7.5	15	4.5

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	1.64	173	234	74
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	19	21	17
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	0.8	0.6	1.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	20	17	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	17	35	38
Lead (aqua regia extractable)	mg/kg	1	MCERTS	19	63	190	130
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.6	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	41	27	9.6	21
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	72	53	40	110

Monoaromatics & Oxygenates

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number					1682765	1682766	1682767	1682768
Sample Reference					TP208	TP209	TP210	TP211
Sample Number					None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)					1.50	0.60	1.00	0.80
Date Sampled					11/11/2020	11/11/2020	11/11/2020	12/11/2020
Time Taken					None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)					Units	Limit of Detection	Accred- itation Status	
Petroleum Hydrocarbons								
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	0.025
TPH-CWG - Aromatic >EC7 - EC8					mg/kg	0.001	MCERTS	0.15
TPH-CWG - Aromatic >EC8 - EC10					mg/kg	0.001	MCERTS	1.2
TPH-CWG - Aromatic >EC10 - EC12					mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16					mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21					mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35					mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic (EC5 - EC35)					mg/kg	10	MCERTS	< 10

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number		1682769	1682770	1682771
Sample Reference		TP212	TP213	TP214
Sample Number		None Supplied	None Supplied	None Supplied
Depth (m)		0,50	1,00	0,40
Date Sampled		12/11/2020	11/11/2020	12/11/2020
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
Moisture Content	%	0.01	NONE	16
Total mass of sample received	kg	0.001	NONE	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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	7.9	7.4
Electrical Conductivity	µS/cm	10	ISO 17025	130	74	39
Total Cyanide	mg/kg	1	MCERTS	4	< 1	59
Complex Cyanide	mg/kg	1	MCERTS	4	< 1	57
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	2
Total Sulphate as SO ₄	mg/kg	50	MCERTS	1400	300	4100
Sulphide	mg/kg	1	MCERTS	2	< 1.0	6.9
Total Chloride	mg/kg	5	NONE	110	140	71
Ammonium as NH ₄	mg/kg	0.5	MCERTS	< 0.5	< 0.5	0.6
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	0.2	1.4

Phenols by GC-MS

Phenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
2-Chlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol	mg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	< 0.2

Total Phenols

Total Phenols (GC-MS)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
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Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number					1682769	1682770	1682771
Sample Reference					TP212	TP213	TP214
Sample Number					None Supplied	None Supplied	None Supplied
Depth (m)					0.50	1.00	0.40
Date Sampled					12/11/2020	11/11/2020	12/11/2020
Time Taken					None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	MCERTS Status	Accred- itation			
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS		0.61	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS		1.6	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS		0.32	< 0.05	0.19
Fluorene	mg/kg	0.05	MCERTS		1.3	< 0.05	0.33
Phenanthrene	mg/kg	0.05	MCERTS		15	0.17	3.6
Anthracene	mg/kg	0.05	MCERTS		1.9	< 0.05	0.92
Fluoranthene	mg/kg	0.05	MCERTS		21	0.35	6.5
Pyrene	mg/kg	0.05	MCERTS		17	0.38	5
Benzo(a)anthracene	mg/kg	0.05	MCERTS		12	0.25	3.2
Chrysene	mg/kg	0.05	MCERTS		8.6	0.18	2.8
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS		12	< 0.05	3.5
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS		7.3	< 0.05	1.6
Benzo(a)pyrene	mg/kg	0.05	MCERTS		11	< 0.05	2.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS		6.9	< 0.05	1.7
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS		1.7	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS		7.6	< 0.05	1.8

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS		126	1.33	33.7
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS		16	13	16
Boron (water soluble)	mg/kg	0.2	MCERTS		1.4	0.8	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS		< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS		16	29	32
Copper (aqua regia extractable)	mg/kg	1	MCERTS		42	11	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS		180	17	37
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS		< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS		18	19	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS		< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS		130	67	57

Monoaromatics & Oxygenates

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

Analytical Report Number: 20-41212

Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number					1682769	1682770	1682771
Sample Reference					TP212	TP213	TP214
Sample Number					None Supplied	None Supplied	None Supplied
Depth (m)					0,50	1,00	0,40
Date Sampled					12/11/2020	11/11/2020	12/11/2020
Time Taken					None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of Detection	MCERTS Status	Accred- itation			
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		6.6	1.7	2.5
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS		16	< 2.0	3.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS		47	11	14
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS		91	24	28
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS		160	38	48
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	< 1.0	4.9
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS		6	< 2.0	11
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS		67	< 10	36
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS		170	< 10	74
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS		240	< 10	130

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



Analytical Report Number: 20-41212
Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number				1684278	
Sample Reference				TP206	
Sample Number				None Supplied	
Depth (m)				2.00	
Date Sampled				11/11/2020	
Time Taken				None Supplied	
Analytical Parameter (Leachate Analysis)		Units	Limit of Detection	Accred- itation Status	Accred- itation Number

General Inorganics

pH	pH Units	N/A	ISO 17025	7.5
Electrical Conductivity	µS/cm	10	ISO 17025	620
Total Cyanide	µg/l	10	ISO 17025	100
Complex Cyanide	µg/l	10	ISO 17025	100
Free Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	µg/l	100	ISO 17025	40100
Sulphide	µg/l	5	NONE	< 5.0
Chloride	mg/l	0.15	ISO 17025	7.9
Ammonium as NH4	µg/l	15	NONE	67000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	55.1

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	3800
Cresols	µg/l	0.5	NONE	1600
Naphthols	µg/l	0.5	NONE	< 0.5
Isopropylphenol	µg/l	0.5	NONE	< 0.5
Phenol	µg/l	0.5	NONE	3700
Trimethylphenol	µg/l	0.5	NONE	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	9100
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	2100
Acenaphthylene	µg/l	0.01	ISO 17025	170
Acenaphthene	µg/l	0.01	ISO 17025	9.4
Fluorene	µg/l	0.01	ISO 17025	23
Phenanthrene	µg/l	0.01	ISO 17025	27
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	3.8
Pyrene	µg/l	0.01	ISO 17025	2.3
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	2300
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Analytical Report Number: 20-41212
Project / Site name: Arundel

Your Order No: 81231

Lab Sample Number				1684278	
Sample Reference				TP206	
Sample Number				None Supplied	
Depth (m)				2.00	
Date Sampled				11/11/2020	
Time Taken				None Supplied	
Analytical Parameter (Leachate Analysis)		Units	Limit of Detection	Accred- itation Status	Accred- itation Number

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	10
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	0.7
Copper (dissolved)	µg/l	0.7	ISO 17025	12
Iron (dissolved)	mg/l	0.004	ISO 17025	0.24
Lead (dissolved)	µg/l	1	ISO 17025	5.4
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	6.2
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	11

Monocaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	61
Toluene	µg/l	1	ISO 17025	96
Ethylbenzene	µg/l	1	ISO 17025	3.4
p & m-xylene	µg/l	1	ISO 17025	51
o-xylene	µg/l	1	ISO 17025	33
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10

Petroleum Hydrocarbons

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

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	61
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	96
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	87
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	2100
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	200
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	34
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	2500

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

Analytical Report Number : 20-41212

Project / Site name: 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 *
1682757	TP201	None Supplied	0,5	Brown loam and clay with gravel and vegetation.
1682758	TP202	None Supplied	0,80	Brown loam and clay with gravel and vegetation.
1682759	TP203	None Supplied	1,00	Brown loam and clay with gravel and vegetation.
1682760	TP204	None Supplied	1,00	Brown loam and clay with gravel and vegetation.
1682761	TP205	None Supplied	1,50	Brown loam and clay with gravel and vegetation.
1682762	TP206	None Supplied	1,20	Brown loam and clay with gravel and vegetation.
1682763	TP206	None Supplied	2,00	Brown loam and clay with gravel and vegetation.
1682764	TP207	None Supplied	1,80	Brown loam and clay with gravel and vegetation.
1682765	TP208	None Supplied	1,50	Brown clay with gravel and vegetation.
1682766	TP209	None Supplied	0,60	Brown clay and loam with gravel and vegetation.
1682767	TP210	None Supplied	1,00	Brown clay and loam with gravel and vegetation.
1682768	TP211	None Supplied	0,80	Brown loam and clay with gravel and vegetation.
1682769	TP212	None Supplied	0,50	Brown loam and clay with gravel and vegetation.
1682770	TP213	None Supplied	1,00	Brown clay with gravel.
1682771	TP214	None Supplied	0,40	Brown clay and loam with gravel and vegetation.

Analytical Report Number : 20-41212

Project / Site name: 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
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as received, moisture adjusted) and over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Phenols, speciated, in soil, by GCMS	Determination of speciated phenols in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	NONE
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
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Phenols, speciated, in leachate, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030-PL	W	NONE
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L040-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 in soil	Determination of acid soluble chloride in soil by extraction with nitric acid, addition of silver nitrate followed by titration against thiocyanate.	In-house method	L075-PL	D	NONE
Electrical conductivity at 20oC of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Electrical conductivity of soil	Determination of electrical conductivity in soil by electrometric measurement.	In-house method	L031-PL	D	ISO 17025
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method	L080-PL	W	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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	NONE

Analytical Report Number : 20-41212

Project / Site name: 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
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
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In house method.	L005-PL	W	ISO 17025
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
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
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-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
TPHCWG (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
Total cyanide in leachate	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	ISO 17025
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 in leachate	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
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
BTEX and MTBE in leachates (Monoaromatics)	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammonium as NH4 in leachate	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	NONE

Analytical Report Number : 20-41212

Project / Site name: 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 ₄ 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
Chloride in leachate	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	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.



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Analytical Report Number : 20-44712

Project / Site name:	Arundel	Samples received on:	02/12/2020
Your job number:	C1820	Samples instructed on/ Analysis started on:	02/12/2020
Your order number:	81275	Analysis completed by:	09/12/2020
Report Issue Number:	1	Report issued on:	09/12/2020
Samples Analysed:	9 water samples		

Signed:

Will Fardon
Technical Reviewer (CS 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.



Environmental Science

Analytical Report Number: 20-44712

Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number				1702559	1702560	1702561	1702562
Sample Reference				BH101s	BH101d	BH102	BH102a
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/12/2020	02/12/2020	02/12/2020	02/12/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8	8.5	7.1	7.2
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	2300	2200	670	680
Total Cyanide	µg/l	10	ISO 17025	1300	430	< 10	< 10
Complex Cyanide	µg/l	10	ISO 17025	1300	430	< 10	< 10
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO ₄	µg/l	45	ISO 17025	933000	502000	34700	37100
Sulphate as SO ₄	mg/l	0.045	ISO 17025	933	502	34.7	37.1
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	39	160	66	67
Ammonium as NH ₄	µg/l	15	ISO 17025	130000	370000	38	33
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	47.9	263	1.68	3.23
Total Suspended Solids	mg/l	2	ISO 17025	60	21	12	7

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	87000	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	200000	< 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	710	11000	< 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	710	300000	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	15.4	1810	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	45.8	237	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	24.6	15.9	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	72.8	41	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	54.8	34.4	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	40.3	4.15	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	75.6	2.15	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	58.5	1.29	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	19.3	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	13.4	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	10.7	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	4.98	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	7.92	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	2.82	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	0.79	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	2.83	< 0.01	< 0.01	< 0.01



Environmental Science

Analytical Report Number: 20-44712

Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number				1702559	1702560	1702561	1702562
Sample Reference				BH101s	BH101d	BH102	BH102a
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/12/2020	02/12/2020	02/12/2020	02/12/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	450	2150	< 0.16	< 0.16
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Heavy Metals / Metalloids

Iron (dissolved)	mg/l	0.004	ISO 17025	0.73	0.3	0.018	0.027
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Arsenic (dissolved)	µg/l	0.15	ISO 17025	2.89	49	0.34	0.28
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	6	11	3.2	3.3
Copper (dissolved)	µg/l	0.5	ISO 17025	5.7	3	4.8	4.2
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 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	6.9	8.5	2	1.9
Selenium (dissolved)	µg/l	0.6	ISO 17025	5.6	8.3	1.7	1.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	8.4	2.9	7.9	9.3

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	184	12900	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	56.6	4950	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	77.2	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	695	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	16.3	328	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 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
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	180	13000	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	57	5000	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	16	1200	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	330	2000	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	1000	4000	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	1000	1900	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	400	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	3000	27000	< 10	< 10

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



Environmental Science

Analytical Report Number: 20-44712

Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number				1702563	1702564	1702565	1702566
Sample Reference				BH105	BH201	BH202	BH203
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/12/2020	02/12/2020	02/12/2020	02/12/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	

General Inorganics

pH	pH Units	N/A	ISO 17025	7.1	7.5	6.8	7
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	1200	2300	1900	860
Total Cyanide	µg/l	10	ISO 17025	290	310	510	59
Complex Cyanide	µg/l	10	ISO 17025	290	310	510	59
Free Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10	< 10
Sulphate as SO ₄	µg/l	45	ISO 17025	422000	647000	1020000	111000
Sulphate as SO ₄	mg/l	0.045	ISO 17025	422	647	1020	111
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	69	130	140	63
Ammonium as NH ₄	µg/l	15	ISO 17025	65000	350000	41000	4000
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	8.69	89.8	53.7	16.3
Total Suspended Solids	mg/l	2	ISO 17025	550	21	23	17

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	1200	3500	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	17000	670	< 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	< 0.5	30000	2500	< 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	< 3.5	48000	6600	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	4.54	786	523	6.25
Acenaphthylene	µg/l	0.01	ISO 17025	0.31	83.7	50.4	2.07
Acenaphthene	µg/l	0.01	ISO 17025	3.07	21.1	8.61	26.6
Fluorene	µg/l	0.01	ISO 17025	< 0.01	47.8	14.1	13.2
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	33.3	10.6	0.51
Anthracene	µg/l	0.01	ISO 17025	< 0.01	5.71	2.13	1.5
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	3	2.74	2.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	1.64	2.09	1
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



Environmental Science

Analytical Report Number: 20-44712

Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number				1702563	1702564	1702565	1702566
Sample Reference				BH105	BH201	BH202	BH203
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				02/12/2020	02/12/2020	02/12/2020	02/12/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	7.92	982	614	53.2
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Heavy Metals / Metalloids

Iron (dissolved)	mg/l	0.004	ISO 17025	0.59	0.41	0.38	0.083
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Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.74	22.1	2.91	1.81
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	0.03	< 0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	3	5.8	6.4	4
Copper (dissolved)	µg/l	0.5	ISO 17025	1.8	1.5	5.8	3.1
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 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	8.9	9.7	32	4.9
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.9	4.5	7	1.8
Zinc (dissolved)	µg/l	0.5	ISO 17025	3.6	7.3	33	11

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	1620	810	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	808	77	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	26.8	2.2	6
p & m-xylene	µg/l	1	ISO 17025	< 1.0	337	150	11.9
o-xylene	µg/l	1	ISO 17025	< 1.0	119	66.9	11.2
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 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
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	< 1.0	1600	810	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	810	77	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	550	240	56
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	3200	1500	270
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	4000	1500	800
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	900	1300	500
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	11000	5400	1600

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



Analytical Report Number: 20-44712
Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number				1702567
Sample Reference				BH204
Sample Number				None Supplied
Depth (m)				None Supplied
Date Sampled				02/12/2020
Time Taken				None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

General Inorganics

pH	pH Units	N/A	ISO 17025	7
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	760
Total Cyanide	µg/l	10	ISO 17025	50
Complex Cyanide	µg/l	10	ISO 17025	50
Free Cyanide	µg/l	10	ISO 17025	< 10
Sulphate as SO4	µg/l	45	ISO 17025	34600
Sulphate as SO4	mg/l	0.045	ISO 17025	34.6
Sulphide	µg/l	5	NONE	< 5.0
Chloride	mg/l	0.15	ISO 17025	65
Ammonium as NH4	µg/l	15	ISO 17025	3200
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	7.6
Total Suspended Solids	mg/l	2	ISO 17025	30

Phenols by HPLC

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

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	7.18
Acenaphthylene	µg/l	0.01	ISO 17025	0.6
Acenaphthene	µg/l	0.01	ISO 17025	1.65
Fluorene	µg/l	0.01	ISO 17025	3.53
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Pyrene	µg/l	0.01	ISO 17025	2.16
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01



Analytical Report Number: 20-44712
Project / Site name: Arundel

Your Order No: 81275

Lab Sample Number	1702567			
Sample Reference	BH204			
Sample Number	None Supplied			
Depth (m)	None Supplied			
Date Sampled	02/12/2020			
Time Taken	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status	

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	15.1
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Heavy Metals / Metalloids

Iron (dissolved)	mg/l	0.004	ISO 17025	0.037
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Arsenic (dissolved)	µg/l	0.15	ISO 17025	4.51
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03
Chromium (dissolved)	µg/l	0.2	ISO 17025	3.6
Copper (dissolved)	µg/l	0.5	ISO 17025	2.2
Lead (dissolved)	µg/l	0.2	ISO 17025	0.2
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	8.4
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.5
Zinc (dissolved)	µg/l	0.5	ISO 17025	11

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	35.4
Toluene	µg/l	1	ISO 17025	6.3
Ethylbenzene	µg/l	1	ISO 17025	38.6
p & m-xylene	µg/l	1	ISO 17025	65.8
o-xylene	µg/l	1	ISO 17025	50.5
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	3100
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	7800
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	3200
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	14000

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	35
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	6.3
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	210
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	200
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	1000
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	2500
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	1000
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	4900

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

Analytical Report Number : 20-44712

Project / Site name: 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 20°C 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 20°C in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025



Environmental Science

Analytical Report Number : 20-44712

Project / Site name: 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.

APPENDIX I HAZARD REPORTS

Multi Hazard form - All fields are mandatory apart from local ref number**About you**

Employee type	Contractor (Primary)
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Employee agency staff/temp		Contractor (Primary)		Sub-contractor	
Name		Name	Steve Gronow	Name	
Employee ID		Your company	Celtic Technologies Ltd	Your company	
Email address	...@nationalgrid.com	Best contact info	...@celtic-ltd.com	Principal contractor	
		Responsible NG Dept.	NG Property	Best contact info	
				Responsible NG Dept.	

Local reference number (e.g. project code, SAP job ID, MPRN etc.)	2551
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About the hazard(s)

When did you see the hazard(s)?	Time: 10:00 Date: 16/11/2020
Where was the hazard(s)?	Operational Site/Asset
Location name/address	Ford Road, Arundel, West Sussex BN18 9DX

Hazard(s) detail

Hazard description	Category	Smart tags	Action taken
	Choose an item.		
Following vegetation clearance works, there remains uneven ground, presenting trip hazards.	Occupational Health & Safety	Slips trips falls uneven ground	Where obvious holes and debris can be removed or rectified they have been. All staff and visitors are made aware of this hazard during induction and it is highlighted on site hazard board. No use of mobile phones or other distractions whilst walking.
A small iron access chamber lid was found to be damaged, presenting a trip/fall hazard and potential to damage vehicle wheels.	Road Safety	Chamber lid damage	A concrete slab has been placed over the chamber whilst a steel plate is sourced for longer term solution.
A container with coolant in was being used by a drilling subcontractor and wasn't labelled	Occupational Health & Safety	Labelling liquid container	Notified driller and requested appropriate labelling so that its contents would be known.
	Choose an item.		
	Choose an item.		
	Choose an item.		
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