ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/4736

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes

Please include all sections of this report if it is reproduced

EMT Job No: 23/4736

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM83	Modified USEPA method 8260B v2:1996. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

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CB2 1LA

Attention :	Jon Raven
Date :	18th October, 2022
Your reference :	10044284
Our reference :	Test Report 22/16505 Batch 1
Location :	Shell Bemerton
Date samples received :	8th October, 2022
Status :	Final Report
Issue :	1

Nine samples were received for analysis on 8th October, 2022 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16505

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-11	12-14	15-17	18-20	21-23	24-26	27-29		LOD/LOR	Units	Method No.
Sample ID	01VS0106102 2SO2.5	02VS0206102 2SO2.5	03VS0306102 2SO5.0	04VS0406102 2SO3.0	05VS0506102 2SO3.0	06VS0606102 2SO5.0	07VS0706102 2SO4.0	08VS0806102 2SO5.0	09VS0906102 2SO5.0				
Depth	2.50	2.50	5.00	3.00	3.00	5.00	4.00	5.00	5.00				
COC No / misc													
Containers	V J T B	V J T B	V J B	V J B	V J B	V J B	V J B	V J B	V J B				
Sample Date	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022				
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	<0.03		<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.04	<0.03	0.05	0.11	0.07	<0.03	<0.03	<0.03	<0.03		<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.11	0.05	0.05	0.30	0.13	<0.03	0.07	<0.03	<0.03		<0.03	mg/kg	TM4/PM8
Pyrene #	0.10	0.04	0.06	0.27	0.13	<0.03	0.06	<0.03	<0.03		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.12	<0.06	0.09	0.19	0.14	<0.06	<0.06	<0.06	<0.06		<0.06	mg/kg	TM4/PM8
Chrysene #	0.10	0.04	0.06	0.21	0.16	<0.02	0.06	<0.02	<0.02		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.18	<0.07	0.12	0.38	0.44	<0.07	0.12	<0.07	<0.07		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.10	<0.04	0.06	0.17	0.28	<0.04	0.06	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	0.05	<0.04	0.06	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.08	<0.04	0.06	0.15	0.22	<0.04	0.05	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
PAH 16 Total	0.8	<0.6	0.6	1.8	1.8	<0.6	<0.6	<0.6	<0.6		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.13	<0.05	0.09	0.27	0.32	<0.05	0.09	<0.05	<0.05		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.05	<0.02	0.03	0.11	0.12	<0.02	0.03	<0.02	<0.02		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	99	95	90	94	98	89	95	91	96		<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
Benzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Toluene #	<0.003	<0.003	0.005	0.019	0.019	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Ethylbenzene #	<0.003	<0.003	<0.003	0.006	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
m/p-Xylene #	<0.005	<0.005	0.185	0.027	0.013	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM15/PM10
o-Xylene #	<0.003	<0.003	0.154	0.012	0.012	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
n-Hexane	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05		<0.05	mg/kg	TM15/PM10
Surrogate Recovery Toluene D8	105	114	105	98	101	107	116	104	106		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	96	97	81	84	99	98	93	96		<0	%	TM15/PM10
2-Methylnaphthalene #	<0.01	-	-	0.02	-	<0.01	-	-	<0.01		<0.01	mg/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total) #	<30	<30	1140	<30	<30	<30	<30	<30	<30		<30	mg/kg	TM5/PM8

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16505

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-11	12-14	15-17	18-20	21-23	24-26	27-29		LOD/LOR	Units	Method No.
Sample ID	01VS0106102 2SO2.5	02VS0206102 2SO2.5	03VS0306102 2SO5.0	04VS0406102 2SO3.0	05VS0506102 2SO3.0	06VS0606102 2SO5.0	07VS0706102 2SO4.0	08VS0806102 2SO5.0	09VS0906102 2SO5.0				
Depth	2.50	2.50	5.00	3.00	3.00	5.00	4.00	5.00	5.00				
COC No / misc													
Containers	V J T B	V J T B	V J B	V J B	V J B	V J B	V J B	V J B	V J B				
Sample Date	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022	08/10/2022				
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1+	<0.1+	1.5+	0.1+	0.1+	<0.1+	<0.1+	<0.1+	<0.1+		<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	66.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	236	<4	<4	<4	<4	<4	<4		<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	327	<7	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	<7	83	<7	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19	<19	714	<19	<19	<19	<19	<19	<19		<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1+	<0.1+	0.2+	<0.1+	<0.1+	<0.1+	<0.1+	<0.1+	<0.1+		<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	22.0	<0.2	2.9	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	98	<4	<4	<4	<4	<4	<4		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	203	<7	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7	<7	36	<7	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)#	<19	<19	359	<19	<19	<19	<19	<19	<19		<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	<38	1073	<38	<38	<38	<38	<38	<38		<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total)#	<100	<100	177	251	291	<100	<100	<100	<100		<100	ug/kg	TM36/PM12
GRO (>C4-C8) (HS_1D_Total)#	<0.1	<0.1	0.2	0.3	0.3	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	<100	<100	7400	353	379	133	<100	<100	<100		<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	<0.1	<0.1	7.4	0.4	0.4	0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	<100	<100	7577	604	670	133	<100	<100	<100		<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	<0.1	<0.1	7.6	0.7	0.7	0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
Natural Moisture Content	19.1	21.3	16.9	21.3	15.6	20.6	21.7	15.4	17.2		<0.1	%	PM4/PM0
Ethyl Tert Butyl Ether (ETBE)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM83/PM10
Ethanol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM83/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
22/16505	1	01VS01061022SO2.5	2.50	3	Simon Postlewhite	14/10/2022	**General Description (Bulk Analysis)**	Brown soil/stones
					Simon Postlewhite	14/10/2022	**Asbestos Fibres**	NAD
					Simon Postlewhite	14/10/2022	**Asbestos ACM**	NAD
					Simon Postlewhite	14/10/2022	**Asbestos Type**	NAD
22/16505	1	02VS02061022SO2.5	2.50	7	Anthony Carman	14/10/2022	**General Description (Bulk Analysis)**	Brown Soil/Stones
					Anthony Carman	14/10/2022	**Asbestos Fibres**	NAD
					Anthony Carman	14/10/2022	**Asbestos ACM**	NAD
					Anthony Carman	14/10/2022	**Asbestos Type**	NAD
22/16505	1	04VS04061022SO3.0	3.00	14	Remigiusz Blichowski	17/10/2022	**General Description (Bulk Analysis)**	Brown sand and clay
					Remigiusz Blichowski	17/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	17/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	17/10/2022	**Asbestos Type**	NAD
22/16505	1	05VS05061022SO3.0	3.00	17	Remigiusz Blichowski	17/10/2022	**General Description (Bulk Analysis)**	Brown sand and clay
					Remigiusz Blichowski	17/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	17/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	17/10/2022	**Asbestos Type**	NAD

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 22/16505						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 22/16505

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 22/16505

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

EMT Job No: 22/16505

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM83	Modified USEPA method 8260B v2:1996. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

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CB2 1LA

Attention :	Jon Raven
Date :	20th October, 2022
Your reference :	10052912/10044284
Our reference :	Test Report 22/16611 Batch 1 Schedule A 22/16611 Batch 1 Schedule B 22/16611 Bat
Location :	Shell Bemerton
Date samples received :	12th October, 2022
Status :	Final Report
Issue :	1

Twelve samples were received for analysis on 12th October, 2022 of which twelve were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16611

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	01VS1010102 2SO3.0-3.5	02VS1110102 2SO4.0-4.3	03VS1210102 2SO4.0-4.3	04VS1310102 2SO4.5-4.7	05VS1410102 2SO4.5-4.7	06VS1510102 2SO4.5-4.7	07VS1610102 2SO4.5-4.7	08VS1710102 2SO4.5-4.7	09VS1810102 2SO4.5-4.7	10VS1910102 2SO4.5-4.7			
Depth	3.0-3.5	4.0-4.3	4.0-4.3	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7			
COC No / misc													
Containers	V J B	V J B	V J B	V J	V J	V J	V J	V J	V J	V J			
Sample Date	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022			
Arsenic #	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Barium #	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Beryllium	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Cadmium #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Chromium #	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Copper #	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Lead #	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM15
Mercury #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Nickel #	-	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM15
Selenium #	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Vanadium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Zinc #	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	<0.03	<0.03	<0.03	0.11	<0.03	0.32	<0.03	0.14	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	0.09	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	<0.03	<0.03	<0.03	0.33	<0.03	0.37	0.04	0.24	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	<0.03	<0.03	<0.03	0.29	<0.03	0.31	0.04	0.22	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	<0.06	<0.06	0.25	<0.06	0.28	<0.06	0.21	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	<0.02	<0.02	<0.02	0.27	<0.02	0.22	<0.02	0.14	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	<0.07	<0.07	<0.07	0.48	<0.07	0.27	<0.07	0.24	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	0.24	<0.04	0.14	<0.04	0.13	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	<0.04	<0.04	<0.04	0.23	<0.04	0.09	<0.04	0.10	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	0.19	<0.04	0.08	<0.04	0.08	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6	<0.6	<0.6	2.6	<0.6	2.2	<0.6	1.5	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	0.35	<0.05	0.19	<0.05	0.17	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	<0.02	<0.02	0.13	<0.02	0.08	<0.02	0.07	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	90	95	97	98	119	95	97	95	98	96	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	<2 SV	<2	<2	<2	<2	6	<2	<2	<2	ug/kg	TM15/PM10
Benzene #	<3	<3	5 SV	<3	12	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3 SV	5	<3	<3	<3	6	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3 SV	<3	28	<3	5	<3	<3	<3	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	<5	<5 SV	13	87	<5	17	44	<5	<5	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	9 SV	7	37	<3	9	57	7	<3	<3	ug/kg	TM15/PM10
n-Hexane	<50	-	<50 SV	-	<50	<50	-	-	<50	<50	<50	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	99	96	41 SV	100	98	101	101	103	89	102	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	102	94	41 SV	92	87	101	94	97	84	97	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16611

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-8	9-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	01VS1010102 2SO3.0-3.5	02VS1110102 2SO4.0-4.3	03VS1210102 2SO4.0-4.3	04VS1310102 2SO4.5-4.7	05VS1410102 2SO4.5-4.7	06VS1510102 2SO4.5-4.7	07VS1610102 2SO4.5-4.7	08VS1710102 2SO4.5-4.7	09VS1810102 2SO4.5-4.7	10VS1910102 2SO4.5-4.7			
Depth	3.0-3.5	4.0-4.3	4.0-4.3	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7	4.5-4.7			
COC No / misc													
Containers	V J B	V J B	V J B	V J	V J	V J	V J	V J	V J	V J			
Sample Date	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022	10/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022			
2-Methylnaphthalene#	<10	-	<10	-	12	<10	-	-	<10	<10	<10	ug/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total)#	<30	<30	<30	<30	58	<30	<30	<30	<30	<30	<30	mg/kg	TM5/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	1.1	0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)#	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total)#	<100	<100	<100	<100	134	<100	<100	877	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	<100	<100	<100	482	835	<100	325	3420	562	<100	<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	<100	<100	<100	482	969	<100	325	4297	562	<100	<100	ug/kg	TM36/PM12
Natural Moisture Content	22.4	24.1	22.3	19.4	20.7	17.5	17.7	18.8	15.8	16.9	<0.1	%	PM4/PM0
Hexavalent Chromium#	-	-	-	-	-	-	-	-	-	-	<0.3	mg/kg	TM38/PM20
Ethyl Tert Butyl Ether (ETBE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Ethanol	<100	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	ug/kg	TM83/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16611

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	27-29	30-31											
Sample ID	11WAC101022SO	12VS201010222SO4.5-4.7											
Depth		4.5-4.7											
COC No / misc													
Containers	V J T	V J											
Sample Date	10/10/2022	10/10/2022											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	12/10/2022	12/10/2022											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Arsenic #	8.4	-									<0.5	mg/kg	TM30/PM15
Barium #	81	-									<1	mg/kg	TM30/PM15
Beryllium	1.1	-									<0.5	mg/kg	TM30/PM15
Cadmium #	0.5	-									<0.1	mg/kg	TM30/PM15
Chromium #	64.7	-									<0.5	mg/kg	TM30/PM15
Copper #	13	-									<1	mg/kg	TM30/PM15
Lead #	52	-									<5	mg/kg	TM30/PM15
Mercury #	<0.1	-									<0.1	mg/kg	TM30/PM15
Nickel #	19.9	-									<0.7	mg/kg	TM30/PM15
Selenium #	<1	-									<1	mg/kg	TM30/PM15
Vanadium	33	-									<1	mg/kg	TM30/PM15
Zinc #	53	-									<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03									<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05									<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	<0.03									<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.06	<0.03									<0.03	mg/kg	TM4/PM8
Pyrene #	0.05	<0.03									<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06									<0.06	mg/kg	TM4/PM8
Chrysene #	0.05	<0.02									<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.11	<0.07									<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.05	<0.04									<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.06	<0.04									<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04									<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6									<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.08	<0.05									<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.03	<0.02									<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	119	108									<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	-	<2									<2	ug/kg	TM15/PM10
Benzene #	-	<3									<3	ug/kg	TM15/PM10
Toluene #	-	<3									<3	ug/kg	TM15/PM10
Ethylbenzene #	-	<3									<3	ug/kg	TM15/PM10
m/p-Xylene #	-	<5									<5	ug/kg	TM15/PM10
o-Xylene #	-	<3									<3	ug/kg	TM15/PM10
n-Hexane	-	-									<50	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	104									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	99									<0	%	TM15/PM10

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/16611

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	27-29	30-31									LOD/LOR	Units	Method No.
Sample ID	11WAC101022SO	12VS201010222SO4.5-4.7											
Depth		4.5-4.7											
COC No / misc													
Containers	V J T	V J											
Sample Date	10/10/2022	10/10/2022											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	12/10/2022	12/10/2022											
2-Methylnaphthalene #	162	-									<10	ug/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total) #	92	53									<30	mg/kg	TM5/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	0.5	<0.1									<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	-	<0.2									<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	-	<4									<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	-	<7									<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	-	<7									<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	-	<19									<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	<0.2	<0.2									<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	<4	<4									<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	<7	<7									<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	<7	<7									<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	<19	<19									<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	<38									<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total) #	<100	<100									<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total) #	1890	138									<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total) #	1890	138									<100	ug/kg	TM36/PM12
Natural Moisture Content	18.2	16.8									<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-									<0.3	mg/kg	TM38/PM20
Ethyl Tert Butyl Ether (ETBE)	<5	<5									<5	ug/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<5	<5									<5	ug/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<100	<100									<100	ug/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<5	<5									<5	ug/kg	TM83/PM10
Ethanol	<100	<100									<100	ug/kg	TM83/PM10

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
22/16611	1	01VS10101022SO3.0-3.5	3.0-3.5	3	Remigiusz Blichowski	18/10/2022	**General Description (Bulk Analysis)**	Brown clay
					Remigiusz Blichowski	18/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos Type**	NAD
22/16611	1	02VS11101022SO4.0-4.3	4.0-4.3	7	Remigiusz Blichowski	18/10/2022	**General Description (Bulk Analysis)**	Brown clay
					Remigiusz Blichowski	18/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos Type**	NAD
22/16611	1	03VS12101022SO4.0-4.3	4.0-4.3	11	Remigiusz Blichowski	18/10/2022	**General Description (Bulk Analysis)**	Brown Clay
					Remigiusz Blichowski	18/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos Type**	NAD
22/16611	1	11WAC101022SO		29	Remigiusz Blichowski	18/10/2022	**General Description (Bulk Analysis)**	Brown clay
					Remigiusz Blichowski	18/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	18/10/2022	**Asbestos Type**	NAD

Client Name: Arcadis
Reference: 10052912/10044284
Location: Shell Bemerton
Contact: Jon Raven

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 22/16611						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 22/16611

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 22/16611

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260B v2:1996. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270D v5:2014. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

EMT Job No: 22/16611

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM83	Modified USEPA method 8260B v2:1996. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

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Attention :	Jon Raven
Date :	27th October, 2022
Your reference :	10044284
Our reference :	Test Report 22/17204 Batch 1
Location :	Shell Bemerton
Date samples received :	20th October, 2022
Status :	Final Report
Issue :	1

Twenty one samples were received for analysis on 20th October, 2022 of which twenty one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	VS21181022SO0.5	VS22181022SO0.5	VS23181022SO0.5	VS24181022SO0.8	VS25181022SO0.8	VS26181022SO0.8	VS27181022SO0.8	VS28181022SO0.8	VS29181022SO0.5	VS30181022SO0.8			
Depth	0.50	0.50	0.50	0.80	0.80	0.80	0.80	0.80	0.50	0.80			
COC No / misc													
Containers	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B			
Sample Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.07	<0.03	<0.03	<0.03	0.05	<0.03	0.05	<0.03	0.25	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.19	<0.03	<0.03	0.05	0.09	<0.03	0.12	<0.03	0.47	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	0.16	<0.03	<0.03	0.05	0.07	<0.03	0.10	<0.03	0.38	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.17	<0.06	<0.06	<0.06	0.09	<0.06	0.10	<0.06	0.31	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	0.16	<0.02	<0.02	<0.02	0.06	<0.02	0.09	<0.02	0.28	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.22	<0.07	<0.07	<0.07	0.14	<0.07	0.13	<0.07	0.73	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.57	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.08	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	0.85	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.14	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.06	<0.04	<0.04	0.42	0.05	<0.04	0.15	<0.04	0.82	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.1	<0.6	<0.6	<0.6	0.6	<0.6	0.7	<0.6	4.9	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.16	<0.05	<0.05	<0.05	0.10	<0.05	0.09	<0.05	0.53	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.06	<0.02	<0.02	<0.02	0.04	<0.02	0.04	<0.02	0.20	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	98	88	96	82	88	94	83	89	98	86	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	7	<3	<3	<3	<3	5	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	<5	<5	8	9	<5	<5	<5	6	<5	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	6	9	<3	<3	<3	11	<3	<3	ug/kg	TM15/PM10
n-Hexane	<50	-	<50	-	<50	-	<50	-	<50	-	<50	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	99	102	103	99	102	104	103	104	101	103	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	98	99	97	85	93	96	97	99	93	94	<0	%	TM15/PM10
2-Methylnaphthalene #	<10	-	<10	-	21	-	<10	-	<10	-	<10	ug/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total) #	50	118	<30	133	330	<30	45	98	<30	101	<30	mg/kg	TM5/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	VS21181022SO0.5	VS22181022SO0.5	VS23181022SO0.5	VS24181022SO0.8	VS25181022SO0.8	VS26181022SO0.8	VS27181022SO0.8	VS28181022SO0.8	VS29181022SO0.5	VS30181022SO0.8			
Depth	0.50	0.50	0.50	0.80	0.80	0.80	0.80	0.80	0.50	0.80			
COC No / misc													
Containers	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B			
Sample Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2	3.8	<0.2	2.3	1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4	21	<4	24	22	<4	<4	11	6	15	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7	108	<7	25	120	<7	37	67	15	66	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7	34	<7	<7	48	<7	<7	21	<7	22	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19	167	<19	51	191	<19	37	99	21	103	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2	<0.2	<0.2	4.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4	<4	<4	13	12	<4	<4	5	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7	35	<7	36	43	<7	<7	40	<7	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7	<7	<7	<7	<7	<7	<7	7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)*	<19	35	<19	54	55	<19	<19	52	<19	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38	202	<38	105	246	<38	<38	151	<38	103	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total)#	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	<100	238	<100	257	340	<100	<100	339	143	<100	<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	<100	238	<100	257	340	<100	<100	339	143	<100	<100	ug/kg	TM36/PM12
Natural Moisture Content	4.8	25.0	24.4	18.6	23.7	30.3	27.4	2.9	5.1	20.6	<0.1	%	PM4/PM0
Ethyl Tert Butyl Ether (ETBE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Ethanol	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM83/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57	58-60	LOD/LOR	Units	Method No.
Sample ID	VS31181022SO0.8	VS32181022SO4.5	VS33181022SO4.5	VS34181022SO3.0	VS35181022SO4.5	VS36181022SO4.5	VS37181022SO3.0	VS38181022SO3.0	VS39181022SO4.7	VS40181022SO4.7			
Depth	0.80	4.50	4.50	3.00	4.50	4.50	3.00	3.00	4.70	4.70			
COC No / misc													
Containers	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B			
Sample Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
PAH MS													
Naphthalene #	0.10	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	0.40	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	1.36	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.12	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.55	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.40	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	0.55	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.30	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.20	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.29	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.23	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.33	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.34	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.15	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.13	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.11	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	4.3	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	1.9	<0.6	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	99	96	98	94	98	96	96	84	83	79	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	7	<3	<3	13	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	4	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
m/p-Xylene #	11	<5	10	<5	<5	14	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
o-Xylene #	10	<3	8	<3	<3	7	<3	<3	6	<3	<3	ug/kg	TM15/PM10
n-Hexane	<50	-	<50	-	<50	-	<50	-	<50	-	<50	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	87	106	108	108	106	109	108	111	107	99	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	74	99	103	97	101	103	98	103	101	93	<0	%	TM15/PM10
2-Methylnaphthalene #	492	-	<10	-	<10	-	<10	-	<10	-	<10	ug/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total) #	6620	<30	<30	<30	<30	<30	<30	159	<30	<30	<30	mg/kg	TM5/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	31-33	34-36	37-39	40-42	43-45	46-48	49-51	52-54	55-57	58-60	LOD/LOR	Units	Method No.
Sample ID	VS31181022SO0.8	VS32181022SO4.5	VS33181022SO4.5	VS34181022SO3.0	VS35181022SO4.5	VS36181022SO4.5	VS37181022SO3.0	VS38181022SO3.0	VS39181022SO4.7	VS40181022SO4.7			
Depth	0.80	4.50	4.50	3.00	4.50	4.50	3.00	3.00	4.70	4.70			
COC No / misc													
Containers	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B	V J B			
Sample Date	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022	18/10/2022			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022	20/10/2022			
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	17.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.8	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	944	<4	<4	<4	<4	<4	<4	30	6	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	3040	<7	<7	<7	<7	<7	<7	70	10	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	911	<7	<7	<7	<7	<7	<7	18	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	4913	<19	<19	<19	<19	<19	<19	120	<19	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	6.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	293	<4	<4	<4	<4	<4	<4	8	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	1020	<7	<7	<7	<7	<7	<7	23	<7	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	353	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)#	1673	<19	<19	<19	<19	<19	<19	31	<19	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	6586	<38	<38	<38	<38	<38	<38	151	<38	<38	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total)#	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	2200	<100	<100	<100	<100	<100	<100	665	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	2200	<100	<100	<100	<100	<100	<100	665	<100	<100	<100	ug/kg	TM36/PM12
Natural Moisture Content	7.2	16.7	19.9	14.8	18.1	17.7	12.1	21.1	19.7	21.6	<0.1	%	PM4/PM0
Ethyl Tert Butyl Ether (ETBE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	ug/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM83/PM10
Ethanol	<100	<100	<100	<100	<100	<100	<100	362	278	<100	<100	ug/kg	TM83/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	61-63										LOD/LOR	Units	Method No.
Sample ID	VS41181022SO1.0												
Depth	1.00												
COC No / misc													
Containers	V J B												
Sample Date	18/10/2022												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	20/10/2022												
PAH MS													
Naphthalene #	<0.04										<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03										<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05										<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04										<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03										<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03										<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03										<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06										<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02										<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07										<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04										<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6										<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05										<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02										<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	96										<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2										<2	ug/kg	TM15/PM10
Benzene #	<3										<3	ug/kg	TM15/PM10
Toluene #	<3										<3	ug/kg	TM15/PM10
Ethylbenzene #	<3										<3	ug/kg	TM15/PM10
m/p-Xylene #	<5										<5	ug/kg	TM15/PM10
o-Xylene #	<3										<3	ug/kg	TM15/PM10
n-Hexane	<50										<50	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	98										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	93										<0	%	TM15/PM10
2-Methylnaphthalene #	<10										<10	ug/kg	TM16/PM8
EPH (C8-C40) (EH_1D_Total) #	<30										<30	mg/kg	TM5/PM8

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven
EMT Job No: 22/17204

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	61-63										LOD/LOR	Units	Method No.
Sample ID	VS41181022SO1.0												
Depth	1.00												
COC No / misc													
Containers	V J B												
Sample Date	18/10/2022												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	20/10/2022												
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1										<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1										<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2										<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4										<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	<7										<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	<7										<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	<19										<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	<0.2										<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	<4										<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	<7										<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	<7										<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)#	<19										<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	<38										<38	mg/kg	TM5/TM36/PM8/PM12/PM16
GRO (>C4-C8) (HS_1D_Total)#	<100										<100	ug/kg	TM36/PM12
GRO (>C8-C12) (HS_1D_Total)#	<100										<100	ug/kg	TM36/PM12
GRO (>C4-C12) (HS_1D_Total)#	<100										<100	ug/kg	TM36/PM12
Natural Moisture Content	38.6										<0.1	%	PM4/PM0
Ethyl Tert Butyl Ether (ETBE)	<5										<5	ug/kg	TM83/PM10
Di isopropyl Ether (DIPE)	<5										<5	ug/kg	TM83/PM10
Tert Butyl Alcohol (TBA)	<100										<100	ug/kg	TM83/PM10
Tert Amyl Methyl Ether (TAME)	<5										<5	ug/kg	TM83/PM10
Ethanol	<100										<100	ug/kg	TM83/PM10

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
22/17204	1	VS21181022SO0.5	0.50	3	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	soil,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS22181022SO0.5	0.50	6	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	grey soil,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS23181022SO0.5	0.50	9	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	grey soil,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS24181022SO0.8	0.80	12	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	grey stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS25181022SO0.8	0.80	15	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	grey/white chalk,soil
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS26181022SO0.8	0.80	18	Charlotte Taylor	25/10/2022	**General Description (Bulk Analysis)**	grey/white chalk,soil
					Charlotte Taylor	25/10/2022	**Asbestos Fibres**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos ACM**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS27181022SO0.8	0.80	21	Charlotte Taylor	25/10/2022	**General Description (Bulk Analysis)**	grey/white chalk,soil
					Charlotte Taylor	25/10/2022	**Asbestos Fibres**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos ACM**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS28181022SO0.8	0.80	24	Anthony Carman	25/10/2022	**General Description (Bulk Analysis)**	Grey Soil/Stones
					Anthony Carman	25/10/2022	**Asbestos Fibres**	NAD
					Anthony Carman	25/10/2022	**Asbestos ACM**	NAD
					Anthony Carman	25/10/2022	**Asbestos Type**	NAD

Client Name: Arcadis
Reference: 10044284
Location: Shell Bemerton
Contact: Jon Raven

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
22/17204	1	VS29181022SO0.5	0.50	27	Remigiusz Blichowski	25/10/2022	**General Description (Bulk Analysis)**	Palem sand and rock
					Remigiusz Blichowski	25/10/2022	**Asbestos Fibres**	NAD
					Remigiusz Blichowski	25/10/2022	**Asbestos ACM**	NAD
					Remigiusz Blichowski	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS30181022SO0.8	0.80	30	Charlotte Taylor	25/10/2022	**General Description (Bulk Analysis)**	grey/white chalk,soil
					Charlotte Taylor	25/10/2022	**Asbestos Fibres**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos ACM**	NAD
					Charlotte Taylor	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS31181022SO0.8	0.80	33	Anthony Carman	25/10/2022	**General Description (Bulk Analysis)**	Grey Soil/Stones
					Anthony Carman	25/10/2022	**Asbestos Fibres**	NAD
					Anthony Carman	25/10/2022	**Asbestos ACM**	NAD
					Anthony Carman	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS34181022SO3.0	3.00	42	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	red sand,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS37181022SO3.0	3.00	51	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	red sand/clay
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS38181022SO3.0	3.00	54	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	red sand,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD
22/17204	1	VS41181022SO1.0	1.00	63	Catherine Coles	25/10/2022	**General Description (Bulk Analysis)**	red sand,stone
					Catherine Coles	25/10/2022	**Asbestos Fibres**	NAD
					Catherine Coles	25/10/2022	**Asbestos ACM**	NAD
					Catherine Coles	25/10/2022	**Asbestos Type**	NAD