

Element Materials Technology Unit 3 Deeside Point Zone 3 Deeside Industrial Park Deeside CH5 2UA P: +44 (0) 1244 833780 F: +44 (0) 1244 833781

W: www.element.com

RSK Group Plc Bluebell Business Centre Old Naas Road Dublin 12 Ireland	
Attention :	Jayne Stephens
Date :	29th September, 2023
Your reference :	604569
Our reference :	Test Report 23/15348 Batch 1
Location :	-
Date samples received :	18th September, 2023
Status :	Final Report
Issue :	1

Ten samples were received for analysis on 18th September, 2023 of which ten 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.

The greenhouse gas emissions generated (in Carbon - Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 25.34 kg of CO2

Scope 1&2&3 emissions - 59.885 kg of CO2

Authorised By:

5.60-20

Simon Gomery BSc Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name: Reference: Location:	RSK Grou 604569 -	ıp Plc					Report :	Liquid					
Contact: EMT Job No:	Jayne Ste 23/15348	phens					Liquids/pr H=H ₂ SO ₄ , 2	oducts: V= Z=ZnAc, N=	40ml vial, G NaOH, HN=	G=glass bottl ∺HN0₃	le, P=plastic	bottle	
EMT Sample No	1 11-14	2 15-18	3 19-21	4 22-25	5 26-28	6 29-32	7 33-36	8 37-40	9.41-44	10.45-48			
Sample ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW11			
Depth													
											Please se abbrevi	e attached n ations and a	otes for all cronyms
Containers	BODPG	BODPG	BODPG	BODPG	BODPG	BODPG	BODPG	BODPG	BODPG	BODPG			
Sample Date	13/09/2023 13:15	13/09/2023 10:50	13/09/2023	13/09/2023 12:05	13/09/2023 09:50	13/09/2023	13/09/2023 14:30	14/09/2023 09:30	14/09/2023 10:30	14/09/2023			
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water			
Batch Number	1	1	1	1	1	1	1	1	1	1		Unite	Method
Date of Receipt	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	LODILOI	Onita	No.
Dissolved Aluminium [#]	<20	22	<20	51	<20	129	<20	<20	30	85	<20	ug/l	TM30/PM14
Dissolved Arsenic [#]	<2.5	<2.5	<2.5	<2.5	<2.5	14.1	<2.5	<2.5	<2.5	<2.5	<2.5	ug/l	TM30/PM14
Dissolved Barium [#]	64	78	91	114	122	40	129	89	80	70	<3	ug/l	TM30/PM14
Dissolved Cadmium [#]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Calcium [#]	14.3	19.1	23.5	11.0	30.5	6.4	41.4	20.2	16.8	5.0	<0.2	mg/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper [#]	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/l	TM30/PM14
Total Dissolved Iron "	26	425	878	3550	/2	3485	156	/3	551	1561	<20	ug/l	TM30/PM14
Dissolved Lead	<0 2.6	<0	<0	<0	<0 5.0	<0 2.6	<0	<0	<0 2.7	<0 1.6	<0.1	ug/i	TM20/PM14
Dissolved Magnesium	5.0	2.9	4.2	3.9	5.2	5.0	4.0	4.4	1160	2080	<0.1	ug/l	TM30/PM14
Dissolved Marganese	<1	<1	<1	<1	<1	, <1	<1	<1	<1	<1	<1	ug/l	TM30/PM14
Dissolved Nickel [#]	<2	<2	<2	<2	<2	7	<2	<2	<2	<2	<2	ug/l	TM30/PM14
Dissolved Phosphorus [#]	13	17	9	13	10	28	11	12	7	11	<5	ug/l	TM30/PM14
Dissolved Potassium [#]	1.1	3.1	0.6	0.2	1.3	0.7	1.9	1.5	0.6	0.2	<0.1	mg/l	TM30/PM14
Dissolved Selenium [#]	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Sodium [#]	10.9	8.8	8.8	8.1	9.2	10.6	9.4	7.7	7.4	6.1	<0.1	mg/l	TM30/PM14
Dissolved Zinc [#]	3	7	<3	4	<3	6	<3	3	4	4	<3	ug/l	TM30/PM14
Total Aluminium	22	27	26	51	<20	165	35	34	48	86	<20	ug/l	TM30/PM14
Total Arsenic	<2.5	<2.5	<2.5	<2.5	<2.5	13.7	<2.5	<2.5	<2.5	<2.5	<2.5	ug/l	TM30/PM14
Total Barium	48	55	68	87	90	42	125	86	65	56	<3	ug/l	TM30/PM14
Total Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Total Calcium	19.9 _{AA}	25.4 _{AA}	33.8 _{AA}	15.7 _{AA}	38.6 _{AA}	9.5 _{AA}	56.1 _{AA}	29.7 _{AA}	21.3 _{AA}	6.3 _{AA}	<0.2	mg/l	TM30/PM14
Total Chromium	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Total Copper	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td>	</td <td><!--</td--><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td>	</td <td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td>	</td <td>ug/i</td> <td>TM30/PM14</td>	ug/i	TM30/PM14
Total Load	00 <5	574	- 657 - C5	5154	121	4525	259	123	- 007 5	1005	<20	ug/l	TM30/PM14
Total Magnesium	50	4 0	62	58	67	54	62	64	47	21	<0.1	mg/l	TM30/PM14
Total Manganese	91	14	85	3541	64	180	76	21	1265	2453	<2	ua/l	TM30/PM14
Total Mercury	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM30/PM14
Total Nickel	<2	<2	<2	<2	<2	7	<2	<2	<2	<2	<2	ug/l	TM30/PM14
Total Phosphorus	11	12	7	10	7	33	16	13	7	10	<5	ug/l	TM30/PM14
Total Potassium	1.6 _{AA}	4.1 AA	<1.0 _{AA}	<1.0 _{AA}	1.8 _{AA}	1.2 _{AA}	2.7 _{AA}	2.0 _{AA}	<1.0 _{AA}	<1.0 _{AA}	<0.1	mg/l	TM30/PM14
Total Selenium	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Total Sodium	15.6 _{AA}	12.1 _{AA}	12.7 _{AA}	12.0 _{AA}	11.7 _{AA}	16.1 _{AA}	12.3 _{AA}	11.1 _{AA}	9.3 _{AA}	7.8 _{AA}	<0.1	mg/l	TM30/PM14
Total Zinc	3	4	3	4	<3	7	<3	3	<3	3	<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	51	60	76	44	98	31	123	69	58	19	<1	mg/l	TM30/PM14
EPH (C8-C40) [#]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM30
Nitrate as NO3 [#]	1.1	2.7	1.1	0.4	1.3	<0.2	1.0	2.2	< 0.2	< 0.2	<0.2	ma/l	TM38/PM0
Nitrite as NO2 [#]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	ma/l	TM38/PM0
Ortho Phosphate as P [#]	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/l	TM38/PM0

Client Name: Reference:	RSK Grou 604569	ıp Plc					Report :	Liquid					
Contact:	- Jayne Ste 23/15348	phens					Liquids/pr	oducts: V= Z=ZnAc. N=	40ml vial, G NaOH, HN=	G=glass bottl ∺HN0₀	e, P=plastic	bottle	
EMT Sample No.	1 11 14	2 15 19	2 10 21	4 22 25	5 26 28	6 20 32	7 33 36	8 37 40	0.41.44	10.45.48	l		
Eini Sample No.	1,11-14	2,13-10	3,19-21	4,22-23	3,20-20	0,29-32	7,33-30	8,37-40	3,41-44	10,43-40			
Sample ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW11			
Depth											Please se	e attached n	otes for all
COC No / misc											abbrevi	ations and a	cronyms
Containers	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G	BOD P G			
Sample Date	13/09/2023 13:15	13/09/2023 10:50	13/09/2023	13/09/2023 12:05	13/09/2023 09:50	13/09/2023	13/09/2023 14:30	14/09/2023 09:30	14/09/2023 10:30	14/09/2023			
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			Mada
Date of Receipt	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	18/09/2023	LOD/LOR	Units	No.
Ammoniacal Nitrogen as N	0.02	0.03	0.02	0.05	0.02	0.02	0.04	0.02	0.02	0.05	<0.01	mg/l	TM38/PM0
	-												
Total Alkalinity as CaCO3 #	46	60	70	48	94	20	114	64	54	20	<1	mg/l	TM75/PM0
Bicarbonate Alkalinity as CaCO3 (water soluble)	46	60	70	48	94	20	114	64	54	20	<1	mg/l	TM75/PM0
Apparent Colour	34	63	102	239	30	320	88	21	181	229	<15	ma/I PtCo	TM35/PM0
BOD (Settled) [#]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/l	TM58/PM0
Dissolved Organic Carbon [#]	5	10	8	13	2	17	9	4	14	20	<2	mg/l	ТМ60/РМ0
Electrical Conductivity @25C #	162	171	188	139	229	119	269	173	147	77	<2	uS/cm	ТМ76/РМ0
Kjeldahl Nitrogen	<0.5	0.7	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.6	0.8	<0.5	mg/l	TM125/PM0
pH [#]	6.83	7.08	7.10	6.91	7.82	6.64	7.52	7.12	7.09	6.59	<0.01	pH units	TM73/PM0
Total Organic Carbon *	4	10	12	14	4	17	10	4	14	21	<2	mg/l	TM60/PM0
Turbidity	1.2	1.6	3.0	10.5	1.3	8.1	1.2	1.0	2.7	3.8	<0.1	NTU	TM34/PM0
			0.0	10.0		0.1			2	0.0	-0.1		

Client Name: RSK Group Plc

Reference: 604569

Location:

Contact: Jayne Stephens

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EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
23/15348	1	SW1		1,11-14	BOD	Sample holding time exceeded
23/15348	1	SW2		2,15-18	BOD	Sample holding time exceeded
23/15348	1	SW3		3,19-21	BOD	Sample holding time exceeded
23/15348	1	SW4		4,22-25	BOD	Sample holding time exceeded
23/15348	1	SW5		5,26-28	BOD	Sample holding time exceeded
23/15348	1	SW6		6,29-32	BOD	Sample holding time exceeded
23/15348	1	SW7		7,33-36	BOD	Sample holding time exceeded
23/15348	1	SW8		8,37-40	BOD	Sample holding time exceeded
23/15348	1	SW9		9,41-44	BOD	Sample holding time exceeded
23/15348	1	SW11		10,45-48	BOD	Sample holding time exceeded

Notification of Deviating Samples

Matrix : Liquid

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.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/15348

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 $35^{\circ}C \pm 5^{\circ}C$ unless otherwise stated. Moisture content for CEN Leachate tests are dried at $105^{\circ}C \pm 5^{\circ}C$. Ash samples are dried at $37^{\circ}C \pm 5^{\circ}C$.

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 HCI (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 requirement of our Accreditation Body 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.

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	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
со	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
ТВ	Trip Blank Sample
ОС	Outside Calibration Range
AA	x10 Dilution

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.

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
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.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM34	Turbidity by 2100P Turbidity Meter. complies with EPA 180.1 1993	PM0	No preparation is required.				
TM35	True and apparent colour by Hach Lange DR3800 spectrophotometer. Apparent colour includes dissolved and suspended matter. True colour is determinined after filtration of the sample.	PM0	No preparation is required.				
TM37	2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and E67°C for USE	PM0	No preparation is required.	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: 2013I	PM0	No preparation is required.				
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: 2013I	PM0	No preparation is required.	Yes			
TM58	APHA SMEWW 5210B:1999 22nd Edition. Comparible with ISO 5815:1989. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as am	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377- 3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.				
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM125	Modified AOAC EPA 973.48 (2011). Kjeldahl Nitrogen by application of a strong acid digestion, distillation and titration.	PM0	No preparation is required.				



Element Materials Technology Unit 3 Deeside Point Zone 3 Deeside Industrial Park Deeside CH5 2UA P: +44 (0) 1244 833780 F: +44 (0) 1244 833781

W: www.element.com

RSK Group Plc Bluebell Business Centre Old Naas Road Dublin 12 Ireland		
Attention :	Conor Campbell	
Date :	3rd November, 2023	
Your reference :	604569	
Our reference :	Test Report 23/17381 Batch 1	
Location :	Oatfield	
Date samples received :	19th October, 2023	
Status :	Final Report	
Issue :	1	

Four samples were received for analysis on 19th October, 2023 of which four 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.

The greenhouse gas emissions generated (in Carbon - Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 10.136 kg of CO2

Scope 1&2&3 emissions - 23.954 kg of CO2

Authorised By:

5.6020

Simon Gomery BSc Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name:	RSK Grou	JP Plc					Report :	Liquid					
Reference:	604569												
Location:	Oatfield												
Contact:	Conor Ca	mpbell					Liquids/pro	oducts: V=	40ml vial, G	j=glass bottl	e, P=plastic	bottle	
EMT Job No:	23/17381						H=H ₂ SO ₄ , 2	Z=ZnAc, N=	NaOH, HN=	HN03			
EMT Sample No.	1-3	4-6	7-9	10-12									
Sample ID	SW1	SW2	SW3	SW5									
Depth											Please se	e attached n	otes for all
COC No / misc											abbrevia	ations and ad	ronyms
Containers	ΡG	ΡG	ΡG	ΡG							1		
Sample Date	17/10/2023	17/10/2023	17/10/2023	17/10/2023							1		
Sample Type	Surface Water	r Surface Water	Surface Water	Surface Water							1		
Batch Number	1	1	1	1									
Date of Receipt	10/10/2023	10/10/2023	10/10/2023	10/10/2023							LOD/LOR	Units	Method No.
	19/10/2020	19/10/2023	19/10/2023	19/10/2020	'	ļ!	'	ļļ					THO0/DM14
Dissolved Aluminium "	<20	2/	39	<20	<u> '</u>	<u> </u> !	<u> </u> !		('		<20	ug/i	TM30/PM14
Dissolved Arsenic	<2.5	<2.5	<2.5 60	<2.5 90	<u> </u>	<u> </u> !	!		('		<2.5	ug/i	TM20/PM14
Dissolved Barlum	-0.5	-0.5	-0.5	09 -05	'	ļ!			('		~0.5	ug/i	TM20/PM14
Dissolved Calaium#	13.8	22.5	14.8	19.7	'				(<0.5	mg/l	TM30/PM14
Total Dissolved Chromium [#]	<1.5	<1.5	<1.5	<1.5			!		1 '		<1.5		TM30/PM14
Dissolved Conner [#]	<7	<7	<7	<7	'				í l		<7	ug/l	TM30/PM14
Total Dissolved Iron #	290	200	606	193					1		<20	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	'				l l		<5	ug/l	TM30/PM14
Dissolved Magnesium [#]	3.8	2.9	2.7	3.6	'	· · · · ·			l l		<0.1	mg/l	TM30/PM14
Dissolved Manganese [#]	<2	<2	91	7					1		<2	ug/l	TM30/PM14
Dissolved Mercury [#]	<1	<1	<1	<1	'				1		<1	ug/l	TM30/PM14
Dissolved Nickel [#]	<2	<2	<2	<2	'	1		!	1		<2	ug/l	TM30/PM14
Dissolved Phosphorus #	<5	241	14	14					1		<5	ug/l	TM30/PM14
Dissolved Potassium [#]	0.9	8.1	0.9	1.3							<0.1	mg/l	TM30/PM14
Dissolved Selenium [#]	<3	<3	<3	<3							<3	ug/l	TM30/PM14
Dissolved Sodium [#]	11.3	8.3	7.8	7.9							<0.1	mg/l	TM30/PM14
Dissolved Zinc [#]	<3	7	<3	<3							<3	ug/l	TM30/PM14
Total Aluminium	42	709	83	28	'	!	!		('		<20	ug/l	TM30/PM14
Total Arsenic	<2.5	<2.5	<2.5	<2.5	<u> </u>	<mark>ا</mark> ا	<u> </u>	ļ!	('		<2.5	ug/l	TM30/PM14
Total Barium	52	43	70	89	'	ļ!	'	!	('		<3	ug/l	TM30/PM14
Total Cadmium	<0.5	<0.5	<0.5	<0.5	'	ļ!	!	!	('		<0.5	ug/l	TM30/PM14
Total Calcium	13.9	24.9	16.9	21.3	'	ļ!	!	!	('		<0.2	mg/l	TM30/PM14
Total Chromium	<1.5	<1.5	<1.5	<1.5	<u> </u>	ļ!	<u> </u> '	!	('		<1.5	ug/l	TM30/PM14
Total Copper	<7	<7	<7	<7	'	ļ!	!		'		<7	ug/l	TM30/PM14
Total Iron	431	1028	826	268	'	ļ!	!		['		<20	ug/i	TM30/PM14
Total Lead	<5	<5	<5	<5	'	ļ!	!		'		<5	ug/i	TM30/PM14
Total Magnesium	4.0	3.2	3.0	3.9	<u> </u>	├ ───'	<u> </u>	!	('		<0.1	mg/i	TM30/PM14
Total Marganese	/ 3 <1	00 <1	192	40	'	ļ!			('		< <u>-</u>	ug/i	TM30/FW1-
Total Mickel	~1	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	~1	~1	'	!	!		(!		-2	ug/i	TM30/PM14
	8	259	15	11	'		!		í – – !		<5	ug/i	TM30/PM14
Total Potassium	1.4	9.0	0.9	13	'				1		<0.1	ma/l	TM30/PM14
Total Selenium	<3	<3	<3	<3	'				l l		<3	ug/l	TM30/PM14
Total Sodium	13.0	9,2	9.0	8.8	'				l l		<0.1	mg/l	TM30/PM14
Total Zinc	<3	7	<3	<3	'				1		<3	ua/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	50	69	48	64					1		<1	mg/l	TM30/PM14
				<u> </u>	/	!			1		· · ·	1	1
FPH (C8-C40) [#]	<10	<10	<10	<10					1		<10	ug/l	TM5/PM30
									l l			Ŭ	
Nitrate as NO3 [#]	2.0	7.8	1.2	1.6	'				l l		<0.2	mg/l	TM38/PM0
Nitrite as NO2 [#]	<0.02	0.21	<0.02	<0.02				!	1		<0.02	mg/l	TM38/PM0
Ortho Phosphate as P [#]	0.04	0.16	<0.03	<0.03	'		!		1		<0.03	mg/l	TM38/PM0
			1		1	· · · · ·	1	1	1		1 1	1	

Client Name:	RSK Grou	ip Plc				Report :	Liquid					
Reference:	604569											
Location:		mphell				liouid-/	oducto- V	40mlui-1 C		o Denlast	bottle	
EMT Job No:	23/17381	прреш				H=H_SO	oducts: V= 7=7nAc N=	40mi viai, G NaOH HN=	=glass bottl :HN0。	e, P=plastic	Dottle	
	23/17301					H=H2004, A	L-ZIIAC, N-		-11103	1		
EMT Sample No.	1-3	4-6	7-9	10-12								
Sample ID	SW1	SW2	SW3	SW5								
Depth										Please se	e attached n	otes for all
COC No / misc										abbrevi	ations and ac	cronyms
Containers	ΡG	ΡG	ΡG	РG								
Sample Date	17/10/2023	17/10/2023	17/10/2023	17/10/2023								
Somala Tuna	Surface Water	Surface Water	Surface Mater	Surface Mater								
Sample Type	Surface water	Surface water	Surface Water	Surface water	 							1
Batch Number	1	1	1	1						LOD/LOR	Units	Method
Date of Receipt	19/10/2023	19/10/2023	19/10/2023	19/10/2023								No.
Ammoniacal Nitrogen as N	0.02	1.19	0.02	0.02						<0.01	mg/l	TM38/PM0
Total Alkalinity as CaCO3 #	38	60	44	58						<1	mg/l	TM75/PM0
Bicarbonate Alkalinity as CaCO3 (water soluble)	38	60	44	58						<1	mg/l	TM75/PM0
Apparent Colour	43	87	113	46	 					<15	mg/l PtCo	TM35/PM0
BOD (Settled) [#]	1	4	<1	<1						<1	mg/l	TM58/PM0
Dissolved Organic Carbon [#]	7	10	9	6						<2	mg/l	TM60/PM0
Electrical Conductivity @25C*	161	209	136	168						<2	uS/cm	TM76/PM0
Kjeldahl Nitrogen	<0.5	1.8	<0.5	<0.5						<0.5	mg/l	TM125/PM0
pH "	0.84	7.09	0.88	7.06						<0.01	pH units	
Total Organic Carbon"	/	10	9	0 <10						<2	mg/l	
Turbidity	12	12.5	35	0.0						<0.1	NTU	
Turblatty	1.2	12.5	3.5	0.5						~0.1	NIO	TIVI34/FIVIC

RSK Group Plc
604569
Oatfield

Contact: Conor Campbell

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
					No deviating sample report results for job 23/17381	

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.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/17381

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 $35^{\circ}C \pm 5^{\circ}C$ unless otherwise stated. Moisture content for CEN Leachate tests are dried at $105^{\circ}C \pm 5^{\circ}C$. Ash samples are dried at $37^{\circ}C \pm 5^{\circ}C$.

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 HCI (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 requirement of our Accreditation Body 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.

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	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
со	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
ТВ	Trip Blank Sample
ОС	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.

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
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.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM34	Turbidity by 2100P Turbidity Meter. complies with EPA 180.1 1993	PM0	No preparation is required.				
TM35	True and apparent colour by Hach Lange DR3800 spectrophotometer. Apparent colour includes dissolved and suspended matter. True colour is determinined after filtration of the sample.	PM0	No preparation is required.				
TM37	2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and E65°C for VSS.	PM0	No preparation is required.	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: 2013I	PM0	No preparation is required.				
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: 2013I	PM0	No preparation is required.	Yes			
TM58	APHA SMEWW 5210B:1999 22nd Edition. Comparible with ISO 5815:1989. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as am	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
ТМ73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377- 3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.				
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM125	Modified AOAC EPA 973.48 (2011). Kjeldahl Nitrogen by application of a strong acid digestion, distillation and titration.	PM0	No preparation is required.				



Element Materials Technology Unit 3 Deeside Point Zone 3 Deeside Industrial Park Deeside CH5 2UA P: +44 (0) 1244 833780 F: +44 (0) 1244 833781

W: www.element.com

RSK Group Plc Bluebell Business Centre Old Naas Road Dublin 12 Ireland	
Attention :	Conor Campbell
Date :	3rd November, 2023
Your reference :	604569
Our reference :	Test Report 23/17384 Batch 1
Location :	Oatfield
Date samples received :	19th October, 2023
Status :	Final Report
Issue :	1

Four samples were received for analysis on 19th October, 2023 of which four 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.

The greenhouse gas emissions generated (in Carbon - Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 10.136 kg of CO2

Scope 1&2&3 emissions - 23.954 kg of CO2

Authorised By:

5.6020

Simon Gomery BSc Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name:	RSK Grou	ıp Plc				Report :	Liquid					
Reference:	604569											
Location:	Oatfield											
Contact:	Conor Ca	mpbell				Liquids/pr	oducts: V=	40ml vial, G	i=glass bottl	e, P=plastic	bottle	
EMT Job No:	23/17384					H=H ₂ SO ₄ , 2	Z=ZnAc, N=	NaOH, HN=	HN0 ₃			
			7.0	10.10						1		
EM I Sample No.	1-3	4-6	7-9	10-12								
Sample ID	SW6	SW7	SW8	SW9								
Depth										Please se	e attached n	otes for all
COC No / misc										abbrevia	ations and a	cronyms
Containers	P BOD G	PG	PG	PG								
Sample Date	17/10/2023	17/10/2023	17/10/2023	17/10/2023								
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water								
												-
Batch Number	1	1	1	1						LOD/LOR	Units	Method
Date of Receipt	19/10/2023	19/10/2023	19/10/2023	19/10/2023						LODILOIT	onno	No.
Dissolved Aluminium [#]	137	<20	<20	54						<20	ug/l	TM30/PM14
Dissolved Arsenic [#]	8.8	<2.5	<2.5	<2.5						<2.5	ua/i	TM30/PM14
Dissolved Barium [#]	30	103	75	61						<3	ua/l	TM30/PM14
Dissolved Cadmium [#]	<0.5	<0.5	<0.5	<0.5						<0.5	<u>-</u>	TM30/PM14
Dissolved Calaium#	4.0	40.8	17.6	12.3						-0.2	mg/l	TM30/PM14
	4.0	40.0	17.0	12.5						<0.2	111g/1	TM20/DM444
	<1.5	<1.5	<1.5	<1.5						<1.5	ug/i	TN30/PW14
Dissolved Copper"	</td <td><!--</td--><td><!--</td--><td><!--</td--><td></td><td></td><td></td><td></td><td></td><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td></td>	</td <td><!--</td--><td><!--</td--><td></td><td></td><td></td><td></td><td></td><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td></td>	</td <td><!--</td--><td></td><td></td><td></td><td></td><td></td><td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td></td>	</td <td></td> <td></td> <td></td> <td></td> <td></td> <td><!--</td--><td>ug/i</td><td>TM30/PM14</td></td>						</td <td>ug/i</td> <td>TM30/PM14</td>	ug/i	TM30/PM14
Total Dissolved Iron "	1438	182	408	597						<20	ug/l	TM30/PM14
Dissolved Lead *	<5	<5	<5	<5						<5	ug/l	TM30/PM14
Dissolved Magnesium [#]	2.3	4.3	3.8	2.8						<0.1	mg/l	TM30/PM14
Dissolved Manganese [#]	5	9	5	31						<2	ug/l	TM30/PM14
Dissolved Mercury [#]	<1	<1	<1	<1						<1	ug/l	TM30/PM14
Dissolved Nickel [#]	6	<2	<2	<2						<2	ug/l	TM30/PM14
Dissolved Phosphorus #	20	21	13	10						<5	ug/l	TM30/PM14
Dissolved Potassium [#]	0.7	1.7	1.6	0.6						<0.1	mg/l	TM30/PM14
Dissolved Selenium [#]	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Dissolved Sodium [#]	9.0	8.4	7.2	7.1						<0.1	mg/l	TM30/PM14
Dissolved Zinc [#]	8	4	3	8						<3	ug/l	TM30/PM14
Total Aluminium	351	44	192	166						<20	ug/l	TM30/PM14
Total Arsenic	9.3	<2.5	<2.5	<2.5						<2.5	ua/i	TM30/PM14
Total Barium	42	106	78	68						<3	ua/l	TM30/PM14
Total Cadmium	<0.5	<0.5	<0.5	<0.5						<0.5	<u>-</u>	TM30/PM14
Total Calcium	4.4	13.1	10.7.	13.2						<0.0	ma/l	TM30/PM14
Total Chromium	TAA	-1.F	-1 5	-1.5						-0.2	ing/i	TM20/DM14
Total Chronnum	<1.5	~1.5	<1.5	<1.5						<1.5	ug/i	TM20/DM444
	~/	~/	100	~/						~7	ug/i	TN/30/PW14
	3048	310	420	931						~20 	ug/i	TM20/PW14
lotal Lead	<5	<5	<5	<5						<5	ug/l	TM30/PM14
Iotal Magnesium	2.5 _{AA}	4.4 _{AA}	4.2 _{AA}	3.1 _{AA}						<0.1	mg/l	1 M30/PM14
Total Manganese	327	102	38	320						<2	ug/l	TM30/PM14
Total Mercury	<1	<1	<1	<1						<1	ug/l	TM30/PM14
Total Nickel	5	<2	<2	<2						<2	ug/l	TM30/PM14
Total Phosphorus	34	25	27	15						<5	ug/l	TM30/PM14
Total Potassium	1.1 _{AA}	1.7 _{AA}	2.1 AA	1.0 _{AA}						<0.1	mg/l	TM30/PM14
Total Selenium	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Total Sodium	9.6 _{AA}	8.4 _{AA}	7.7 _{AA}	8.0 _{AA}						<0.1	mg/l	TM30/PM14
Total Zinc	7	<3	3	4						<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	20	120	60	43						<1	mg/l	TM30/PM14
EPH (C8-C40)#	<10	<10	<10	<10						<10	ug/l	TM5/PM30
											-	
Nitrate as NO3 [#]	0.3	1.6	2.9	0.3						<0.2	ma/l	TM38/PM0
Nitrite as NO2 [#]	<0.02	< 0.02	<0.02	<0.02						<0.02	ma/l	TM38/PM0
Ortho Phosphate as P#	<0.02	<0.02	<0.02	<0.02						<0.02	ma/l	TM38/PM0
oraio r noophale as P	-0.00	-0.00	-0.00	.0.00						0.00	ing/i	

Client Name:	RSK Grou	ıp Plc				Report :	Liquid					
Reference:	604569 Oatfield											
Contact:	Conor Ca	mphell				l iquids/pr	oducte: \/=	40ml vial G	=alass bottl	e P=nlastic	bottle	
EMT Job No:	23/17384	просп				H=H ₂ SO ₄ .	Z=ZnAc. N=	NaOH. HN=	HN0₃	e, i -piastic	Dottle	
						2 - 4/	,	- ,	- 3			
EMT Sample No.	1-3	4-6	7-9	10-12								
Comula ID	0.000	014/7	0.940	0.000								
Sample ID	500	5007	5008	5009								
Depth										Please se	e attached n	otes for all
COC No / misc										abbrevi	ations and ac	cronyms
Containers	P BOD G	РG	PG	РG	 							
Sample Date	17/10/2023	17/10/2023	17/10/2023	17/10/2023								
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water								
Batch Number	1	1	1	1	 							
Data of Dessint	10/10/2022	10/10/2022	40/40/2022	10/10/2022						LOD/LOR	Units	Method No.
Date of Receipt	19/10/2023	19/10/2023	19/10/2023	19/10/2023	 							
Ammoniacal Nitrogen as N	0.02	0.02	0.02	0.02						<0.01	mg/l	TM38/PM0
Total Alkalinity as CaCO3 [#]	10	106	56	36						<1	ma/l	ТМ75/РМ0
Bicarbonate Alkalinity as CaCO3 (water soluble)	10	106	56	36						<1	ma/l	ТМ75/РМ0
Apparent Colour	255	115	48	150						<15	mg/l PtCo	TM35/PM0
BOD (Settled) [#]	<1	<1	<1	<1						<1	mg/l	TM58/PM0
Dissolved Organic Carbon [#]	13	11	3	13						<2	mg/l	TM60/PM0
Electrical Conductivity @25C#	94	264	168	125						<2	uS/cm	TM76/PM0
Kjeldahl Nitrogen	0.8	0.7	<0.5	0.8						<0.5	mg/l	TM125/PM0
pH [#]	6.43	7.33	7.00	6.78						<0.01	pH units	ТМ73/РМ0
Total Organic Carbon [#]	15	11	3	13						<2	mg/l	TM60/PM0
Total Suspended Solids #	13	<10	<10	<10						<10	mg/l	ТМ37/РМ0
Turbidity	12.7	3.0	8.2	5.0						<0.1	NTU	TM34/PM0
· ······												

RSK Group Plc
604569
Oatfield

Contact: Conor Campbell

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
				•	No deviating sample report results for job 23/17384	

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.

It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/17384

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 $35^{\circ}C \pm 5^{\circ}C$ unless otherwise stated. Moisture content for CEN Leachate tests are dried at $105^{\circ}C \pm 5^{\circ}C$. Ash samples are dried at $37^{\circ}C \pm 5^{\circ}C$.

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 HCI (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 requirement of our Accreditation Body 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.

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	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
со	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
ТВ	Trip Blank Sample
ОС	Outside Calibration Range
AA	x10 Dilution

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.

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
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.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
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	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM34	Turbidity by 2100P Turbidity Meter. complies with EPA 180.1 1993	PM0	No preparation is required.				
TM35	True and apparent colour by Hach Lange DR3800 spectrophotometer. Apparent colour includes dissolved and suspended matter. True colour is determinined after filtration of the sample.	PM0	No preparation is required.				
TM37	2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition; USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and E67°C for	PM0	No preparation is required.	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: 2013I	PM0	No preparation is required.				
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: 2013I	PM0	No preparation is required.	Yes			
TM58	APHA SMEWW 5210B:1999 22nd Edition. Comparible with ISO 5815:1989. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as am	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
ТМ73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377- 3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.				
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM125	Modified AOAC EPA 973.48 (2011). Kjeldahl Nitrogen by application of a strong acid digestion, distillation and titration.	PM0	No preparation is required.				