CONSULTING ENGINEERS
Civil
Structural
Earth sciences
Strategic land
Special projects

4762/RM/NA/-020424

2nd April 2024

FSC MCR Ltd
12 Fairbourne Road
Manchester
M19 3HU

Dear Mr Bailey

RE: Topsoil Verification Report - Fairfield Social Club, Manchester

Background

RoC Consulting were appointed by FSC MCR Ltd to visit the Fairfield Social Club site and collect samples of imported topsoil material for use within planters as part of the proposed meanwhile use, schedule chemical testing on soil samples to assess the suitability for use of imported topsoil in regard to human health risk and collate a topsoil verification report for Fairfield Social Club (hereafter referred to as the site). Proposals for the site included the installation of a number of above ground planters for a garden area as part of the temporary change of use of the site to an arts and cultural venue/event space (Sui Generis), with associated food and drink space (Flexible Use Class E / Sui Generis).

The following letter report has been completed to support the discharge of condition 8 of planning permission ref: 138066/FO/2023.

This report follows on from a desk study of the site:

1) Phase 1 Desktop Study Fairfield Social Club (Ref: 4648-ROC-ZZ-XX-RP-ES-P1DTS)

It is recommended reference be made to the abovementioned report when reviewing this validation report.

Limitations

The comments made in this report are based on the data available at the time of its completion. Any unusual or conflicting evidence discovered during any future site works must be presented to RoC Consulting as soon as possible so that any implications may be considered.

Additional information, changes in legislation or revised practices may necessitate reinterpretation of part or all of this report. Additionally, site redevelopment and/or a change in end use will require reinterpretation of the assessment.

The accuracy of data supplied by third parties should be considered in the context of any known site conditions for which RoC Consulting cannot be held liable.

The report has been produced by RoC Consulting for the client solely for the purposes of a review of information for the abovementioned site. It may not be used by any person for any other purpose other than that specified without the express written permission of RoC Consulting. Any liability arising out of its use by a third party for purposes not wholly connected with the above shall be the responsibility of that party who shall indemnify RoC Consulting against all claims, costs, damages, and losses arising out of such use.

Validation Requirements

Introduction

Requirements for validation were stipulated by MCC to comprise a watching brief for ground and groundwater contamination and the chemical validation of imported soils for landscaping. It should be noted that this report only considers the suitability for use of soils in regard to human health risk and does not assess the suitability of imported soils for use as a growing medium.

Suitability for use of Imported Soils

In order to create a garden area, 3 tonnes of topsoil were imported onto the site from Dandy's Nationwide Landscape Supplies for installation within above ground planters. Planters were lined with an ANSIO Weed Control Membrane.

As the volume of topsoil being imported onto site is relatively small, 3 samples were obtained to meet MCC contaminated land guidance for chemical validation of imported soils. Samples were submitted to a suitably accredited analytical laboratory for a standard chemical testing suite.

Imported topsoil is being used as growing medium for soft landscaping (planters) the results of chemical testing were screened against published Environment Agency C4SL / LQM S4UL 'Public open space' values described in Table 4.1 below to assess human health risk. These values are protective of human health and any exceedances of the below values are deemed to pose a potential human health risk.

Photographic evidence of topsoil installation and sampling points should also be obtained during the site visit.

Table 4.1 – Soil Acceptance Criteria for Landscaped Areas

Determinand (mg/kg)		Determinand (mg/kg)	
Heavy Metals		Petroleum Hydrocarbons	
Arsenic	**170**	**Ali >C5-C6**	**90000**
Beryllium	**60**	**Ali >C6-C8**	**150000**
Boron	**460000**	**Ali >C8-C10**	**14000**
Cadmium	**880**	**Ali >C10-C12**	**21000**
Chromium (III)	**33000**	**Ali >C12-C16**	**25000**
Chromium (VI)	**250**	**Ali >C16-C35**	**450000**
Copper	**44000**	**Ali >C35-C44**	**450000**
Mercury (Elemental)	**25.8**	**Aro >C5-C7**	**76000**
Mercury (Inorganic)	**240**	**Aro >C7-C8**	**87000**
Mercury (Methylmercury)	**68**	**Aro >C8-C10**	**7200**
Nickel	**800**	**Aro >C10-C12**	**9200**
Selenium	**1800**	**Aro >C12-C16**	**10200**

Vanadium	**5000**	**Aro >C16-C21**	**7600**
Zinc	**173000**	**Aro >C21-C35**	**7800**
Polyaromatic Hydrocarbons		**Aro >C35-C44**	**7800**
Acenaphthene	**29000**	MTBE	**98400**
Acenaphthylene	**29000**	BTEX Compounds	
Anthracene	**149000**	**Benzene**	**190**
Benzo(a)anthracene	**49**	**Toluene**	**9000**
Benzo(a)pyrene	**21**	**Ethylbenzene**	**17000**
Benzo(b)fluoranthene	**13**	**o Xylene**	**17000**
Benzo(ghi)perylene	**1390**	**m&p Xylene**	**17000**
Benzo(k)fluoranthene	**367**	Other Substances	
Chrysene	**93**	**Asbestos ID**	**ND***
Dibenzo(ah)anthracene	**1.1**		
Fluoranthene	**6300**		
Fluorene	**19600**		
Indeno(123-cd)pyrene	**146**		
Naphthalene	**1200**		
Phenanthrene	**6200**		
Pyrene	**15000**		

*ND – None detected

Suitability for Use of Imported Soils

RoC Consulting attended site to obtain soil samples for subsequent chemical analysis on the 27th of February 2024, given the small volume of soil imported to the site (circa 2m3) a total of three samples of topsoil were obtained from different planters and the bulk bags topsoil was delivered in accordance with MCC Contaminated Land Technical Guidance requirements. Photographs of each sample location are enclosed.

Imported topsoil was described as a brown slightly sandy slightly gravelly clay, the gravel constituent of the soil was observed to comprise fine to medium quartz and sandstone, occasional organic matter of roots and rootlets was also observed.

Soil samples were tested against the determinants in Table 4.1. No exceedances of tested determinants were reported, and no asbestos was detected in soil samples. Chemical testing results are enclosed.

RoC Consulting can confirm that our attendance has not been requested on site to investigate the implications / treatment of any remedial items outside the scope of those discussed within this validation report.

Conclusions and Recommendations

The information available allows for the validation of the installed topsoil material within above ground planters.

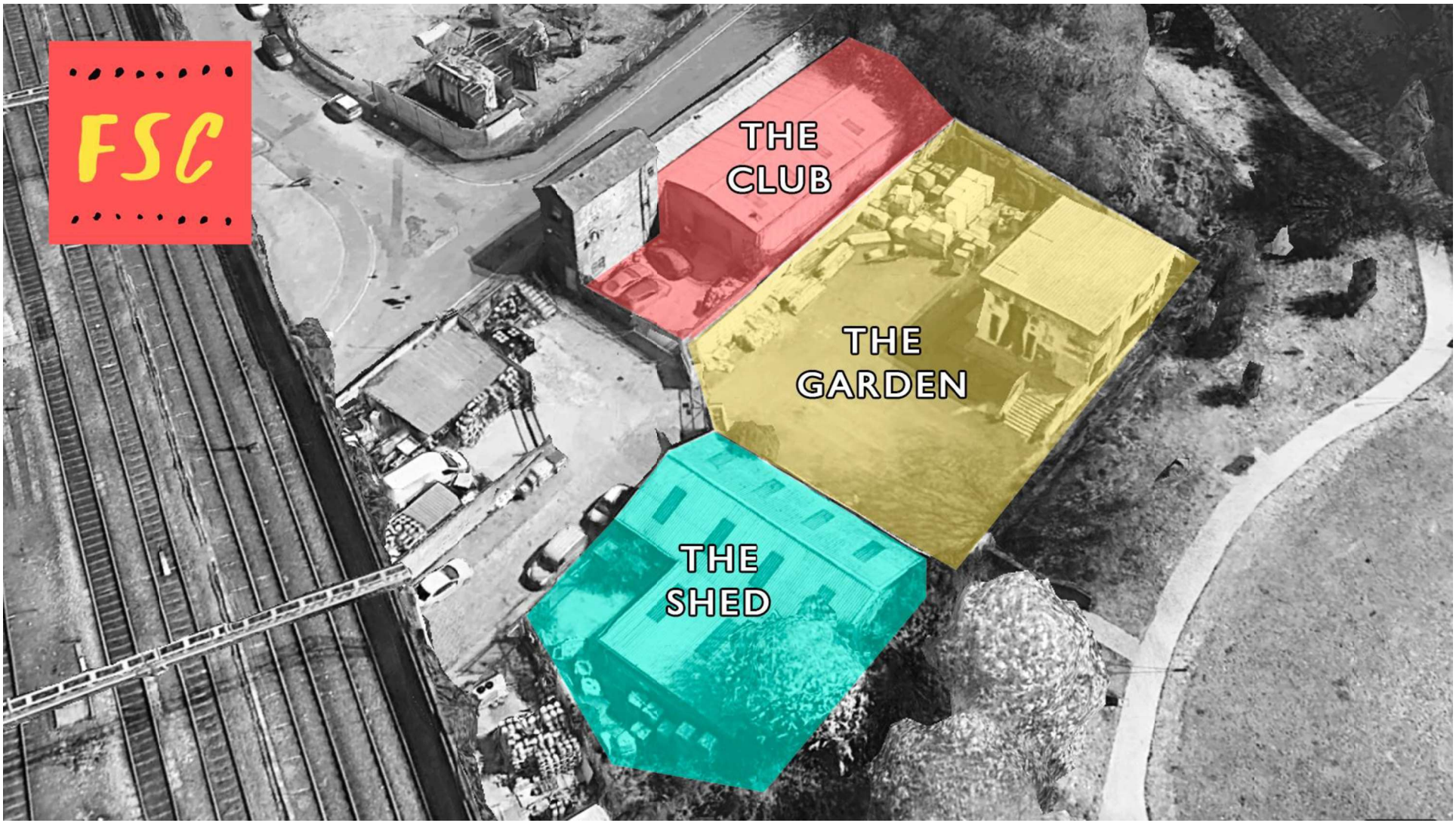
A total of three samples were obtained from imported topsoil material, chemical testing was undertaken on the topsoil samples obtained from site. The results of chemical testing have been screened against published 'Public open space' values to assess the risk posed to human health receptors. The concentrations of determinants were found to be within the allowable concentrations and therefore imported soils are deemed to be suitable for the proposed use.

It is recommended that copies of this validation report are provided to regulatory authorities at the earliest convenience so that they can review in relation to the discharge of condition 8.

Yours sincerely

Report Author	Technical Reviewer	Commercial Reviewer
Reece McGuinness **BSc FGS** **Strategic Land Engineer**	**I.W.** Ian Wilson **CGeol SiLC**	Paul White **C.Build E MCABE** **Operations Director**

Enc: Site Drawings
Chemical Testing Results
Chemical Testing Screening and Supporting Notes
Site Photographs


FSC
THE CLUB
THE GARDEN
THE SHED

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 24/02032
Issue Number: 1 **Date:** 13 March, 2024

Client: ROCP LIMITED
Commercial Wharf 6 Commercial Street
Castlefield
Manchester
M15 4PZ

Project Manager: Reece McGuinness
Project Name: M15 4PZ, Fairfield Social Club
Project Ref: Not specified
Order No: PBJ20110
Date Samples Received: 27/02/24
Date Instructions Received: 28/02/24
Date Analysis Completed: 13/03/24

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 24/02032

Client Project Name: M15 4PZ, Fairfield Social Club

Client Project Ref: Not specified

Lab Sample ID	24/02032/1	24/02032/2	24/02032/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS101	SS102	SS103							
Depth to Top										
Depth To Bottom										
Date Sampled	27-Feb-24	27-Feb-24	27-Feb-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	4AE	4AE							
% Stones >10mm$_A$	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.29	8.25	8.20					pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	17	40	65					mg/l	10	A-T-026s
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.4	<0.2	<0.2					mg/kg	0.2	A-T-050s
Fraction of organic carbon$_D$$^{\#}$	0.0592	0.0829	0.0365					N/A	0.0003	A-T-032s
Antimony$_D$	<5	<5	<5					mg/kg	5	A-T-024s
Arsenic$_D$$^{M\#}$	5	4	4					mg/kg	1	A-T-024s
Barium$_D$	52	41	45					mg/kg	1	A-T-024s
Beryllium$_D$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	1.9	1.9	1.7					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	17	16	16					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	16	12	14					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1					mg/kg	1	A-T-040s
Chromium (trivalent)	16	12	14					mg/kg	1	Calc
Lead$_D$$^{M\#}$	58	44	52					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Molybdenum$_D$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-024s
Nickel$_D$$^{M\#}$	12	10	10					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	17	12	15					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	75	65	78					mg/kg	5	A-T-024s

Envirolab Job Number: 24/02032

Client Project Name: M15 4PZ, Fairfield Social Club

Client Project Ref: Not specified

Lab Sample ID	24/02032/1	24/02032/2	24/02032/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS101	SS102	SS103							
Depth to Top										
Depth To Bottom										
Date Sampled	27-Feb-24	27-Feb-24	27-Feb-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	4AE	4AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 24/02032

Client Project Name: M15 4PZ, Fairfield Social Club

Client Project Ref: Not specified

Lab Sample ID	24/02032/1	24/02032/2	24/02032/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS101	SS102	SS103							
Depth to Top										
Depth To Bottom										
Date Sampled	27-Feb-24	27-Feb-24	27-Feb-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	4AE	4AE							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.12	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.09	0.04					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A$	<0.08	0.21	<0.08					mg/kg	0.01	A-T-019s

Envirolab Job Number: 24/02032

Client Project Name: M15 4PZ, Fairfield Social Club

Client Project Ref: Not specified

Lab Sample ID	24/02032/1	24/02032/2	24/02032/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	SS101	SS102	SS103							
Depth to Top										
Depth To Bottom										
Date Sampled	27-Feb-24	27-Feb-24	27-Feb-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	4AE	4AE	4AE							
TPH UKCWG with Clean Up										
Ali >C5-C6$_A$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A$	0.03	0.01	0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	5	3	4					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	92	48	99					mg/kg	1	A-T-055s
Ali >C35-C44$_A$	20	13	25					mg/kg	1	A-T-055s
Total Aliphatics$_A$	117	64	129					mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_A$	6	3	9					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	18	7	21					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	20	13	25					mg/kg	1	A-T-055s
Aro >C35-C44$_A$	2	<1	1					mg/kg	1	A-T-055s
Total Aromatics$_A$	46	24	57					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	163	88	186					mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{o}C / 11550µS/cm @ 20^{o}C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	ROCP LIMITED, Commercial Wharf 6 Commercial Street, Castlefield, Manchester, M15 4PZ	**Project No:**	24/02032
		Date Received:	28/02/2024 (am)
Project:	M15 4PZ, Fairfield Social Club	**Cool Box Temperatures (°C):**	11.2
Clients Project No:			

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	24/02032/1	24/02032/2	24/02032/3
Client Sample No			
Client Sample ID/Depth	SS101	SS102	SS103
Date Sampled	27/02/24	27/02/24	27/02/24
A-T-019s	04/03/2024	04/03/2024	04/03/2024
A-T-022s	11/03/2024	11/03/2024	11/03/2024
A-T-024s	12/03/2024	12/03/2024	12/03/2024
A-T-026s	12/03/2024	12/03/2024	13/03/2024
A-T-027s	12/03/2024	12/03/2024	12/03/2024
A-T-031s	12/03/2024	12/03/2024	12/03/2024
A-T-032s	12/03/2024	12/03/2024	12/03/2024
A-T-040s	12/03/2024	12/03/2024	13/03/2024
A-T-042sTCN	01/03/2024	01/03/2024	01/03/2024
A-T-044	06/03/2024	06/03/2024	06/03/2024
A-T-045	29/02/2024	29/02/2024	29/02/2024
A-T-050s	07/03/2024	06/03/2024	06/03/2024
A-T-055s	04/03/2024	04/03/2024	04/03/2024
Calc	12/03/2024	12/03/2024	13/03/2024
Calc-As Recd	11/03/2024	11/03/2024	11/03/2024

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

	Notes for GQRA (soil) Screening Tool Output	
1	Details of the **GAC (landuse, SOM and GAC version)** used in the GQRA are displayed at the top of the output screening sheet	
2	Full details of the **GAC derivation** are included in a separate appendix document	
3	The output screening sheet presents the reported Total Organic Carbon and the corresponding calculated Soil Organic Matter, using a conversion of TOC (%) divided by 0.58 to compute the SOM	
4	Any laboratory results that are appended to the reported concentrations (e.g. Tentatively Identified Compounds, PAH Double Ratio Plots etc.) are not included in the output screening sheet.	
	T1	**First level screening threshold, equating to:**
5		Chromium: total Cr concentration compared to Cr VI (conservative assessment)
		Chromium: total Cr concentration compared to Cr III
	Comment	Where Cr VI has been reported, the CrVI results are compared directly to the CrVI GAC
6		Mercury : total Hg concentration compared to elemental Hg (conservative assessment)
		Mercury : total Hg concentration compared to inorganic Hg
	Comment	The tool does not screen against methyl mercury (this parameter is only reported if mercury has been speciated)
7		Petroleum Hydrocarbons: The soil saturation limit has been exceeded
		Petroleum Hydrocarbons: The modelled GAC has been exceeded
	Comment	RSK has adopted an approach for petroleum hydrocarbons whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the GAC with the corresponding solubility or vapour saturation limits given in brackets on the GAC appendix document. First level (T1) GQRA screening is against the soil saturation limit.
8		Free cyanide: Conservatively for sites where a child is the critical receptor, concentration compared tor the SoBRA (2019) acute GAC for free CN
	Comment	Only applicable where the acute GAC of 24mg/kg for a child as the critical receptor is lower than the chronic GAC i.e. Residential without home-grown produce, POS Parks, POS Resi, Primary School and Secondary School land uses
9		Total cyanide: total CN compared to GAC for free CN or the SoBRA (2019) acute GAC for free CN (whichever is lowest)
	Comment	There is no GAC for total CN (risks are driven by free CN) therefore the first level GQRA screening is against free CN and no other screening is undertaken. For end uses where the critical receptor is a child the T1 is set at the acute GAC for free CN. Only applicable where the acute GAC of 24mg/kg is lower than the chronic GAC. The assumption that cyanide total comprises 100% free CN is conservative and consideration should be made on the suitability of this GAC based on the CSM.
10		Any analyte: First level screening threshold (T1) or GAC may be exceeded (e.g. lab results include a < or > symbol)
11	The GQRA screening for **asbestos** is in relation to presence or absence ('detect'). Presence is reported as asbestos type or quantification >0.001%. Absence is reported as < limit of quantification of 0.001% or No Asbestos Detected (NAD).	
12	Where individual reported concentrations are presented in grey (not black) font, the result was below the laboratory method detection limit.	
13		Where cells are shaded grey, all results for that analyte are below the laboratory method detection limit

Project name	Fairfield Social Club
Project code	4762
Client name	FSC MCR Ltd
Address	
NGR	
Land use	Public Open Space public park
SOM	1%
GAC version	2021_00

Notes

Lab sample ID	24/02032/1	24/02032/2	24/02032/3
Client sample ID	SS101	SS102	SS103
Depth to top			
Depth to bottom			
Date sampled	27/02/24	27/02/24	27/02/24

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects			
Metals and Inorganics											
Antimony	mg/kg				<5	3	0	3	<5	<5	<5
Arsenic	mg/kg	170		5	4	3	3	0	5	4	4
Barium	mg/kg	5770		52	41	3	3	0	52	41	45
Beryllium	mg/kg	60			<0.5	3	0	3	<0.5	<0.5	<0.5
Boron (water soluble)	mg/kg	46000		1.9	1.7	3	3	0	1.9	1.9	1.7
Cadmium	mg/kg	880			<0.5	3	0	3	<0.5	<0.5	<0.5
Chromium	mg/kg	33000	250	16	12	3	3	0	16	12	14
Chromium (trivalent)	mg/kg	33000		16	12	3	3	0	16	12	14
Chromium (hexavalent)	mg/kg	250			<1	3	0	3	<1	<1	<1
Copper	mg/kg	44000		17	16	3	3	0	17	16	16
Lead	mg/kg	1300		58	44	3	3	0	58	44	52
Mercury	mg/kg	240	30		<0.17	3	0	3	<0.17	<0.17	<0.17
Molybdenum	mg/kg				<1	3	0	3	<1	<1	<1
Nickel	mg/kg	800		12	10	3	3	0	12	10	10
Selenium	mg/kg	1800			<1	3	0	3	<1	<1	<1
Vanadium	mg/kg	5000		17	12	3	3	0	17	12	15
Zinc	mg/kg	173000		78	65	3	3	0	75	65	78
Cyanide (total)	mg/kg		24		<1	3	0	3	<1	<1	<1
Asbestos											
Asbestos in soil						3	0	3	NAD	NAD	NAD
Petroleum Hydrocarbons											
Ali >C5-C6	mg/kg	90000	304		<0.01	3	0	3	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg	150000	144	0.03	0.01	3	3	0	0.03	0.01	0.01
Ali >C8-C10	mg/kg	14000	78		<1	3	0	3	<1	<1	<1
Ali >C10-C12	mg/kg	21000	48		<1	3	0	3	<1	<1	<1
Ali >C12-C16	mg/kg	25000	24		<1	3	0	3	<1	<1	<1
Ali >C16-C21	mg/kg			5	3	3	3	0	5	3	4
Ali >C21-C35	mg/kg			99	48	3	3	0	92	48	99
Ali >C16-C35 calculated	mg/kg	450000		103	51	3	3	0	97	51	103
Ali >C35-C44	mg/kg	450000		25	13	3	3	0	20	13	25
Aro >C5-C7	mg/kg				<0.01	3	0	3	<0.01	<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	3	0	3	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg	7200	613		<1	3	0	3	<1	<1	<1
Aro >C10-C12	mg/kg	9200	364		<1	3	0	3	<1	<1	<1
Aro >C12-C16	mg/kg	10200		9	3	3	3	0	6	3	9
Aro >C16-C21	mg/kg	7600		21	7	3	3	0	18	7	21
Aro >C21-C35	mg/kg	7800		25	13	3	3	0	20	13	25
Aro >C35-C44	mg/kg	7800		2	<1	3	2	1	2	<1	1
BTEX - Benzene	mg/kg	190			<0.01	3	0	3	<0.01	<0.01	<0.01
BTEX - Toluene	mg/kg	90000	869		<0.01	3	0	3	<0.01	<0.01	<0.01

								Lab sample ID	24/02032/1	24/02032/2	24/02032/3							
								Client sample ID	SS101	SS102	SS103							
								Depth to top										
								Depth to bottom										
								Date sampled	27/02/24	27/02/24	27/02/24							
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects										
BTEX - Ethyl Benzene	mg/kg	17000	518		<0.01	3	0	3	<0.01	<0.01	<0.01							
BTEX - o Xylene	mg/kg	17000	478		<0.01	3	0	3	<0.01	<0.01	<0.01							
BTEX - m & p Xylene	mg/kg	17000	576		<0.01	3	0	3	<0.01	<0.01	<0.01							
TPH (Ali & Aro >C5-C44)	mg/kg			186	88	3	3	0	163	88	186							
Total Aliphatics >C5-C44	mg/kg			129	64	3	3	0	117	64	129							
Total Aromatics >C5-C44	mg/kg			57	24	3	3	0	46	24	57							
Fuel oxygenates																		
MTBE	mg/kg	98400	20400		<0.01	3	0	3	<0.01	<0.01	<0.01							
Polycyclic aromatic hydrocarbons																		
Acenaphthene	mg/kg	29000			<0.01	3	0	3	<0.01	<0.01	<0.01							
Acenaphthylene	mg/kg	29000			<0.01	3	0	3	<0.01	<0.01	<0.01							
Anthracene	mg/kg	149000			<0.02	3	0	3	<0.02	<0.02	<0.02							
Benzo(a)anthracene	mg/kg	49			<0.04	3	0	3	<0.04	<0.04	<0.04							
Benzo(a)pyrene	mg/kg	21			<0.04	3	0	3	<0.04	<0.04	<0.04							
Benzo(b)fluoranthene	mg/kg	13			<0.05	3	0	3	<0.05	<0.05	<0.05							
Benzo(ghi)perylene	mg/kg	1390			<0.05	3	0	3	<0.05	<0.05	<0.05							
Benzo(k)fluoranthene	mg/kg	367			<0.07	3	0	3	<0.07	<0.07	<0.07							
Chrysene	mg/kg	93			<0.06	3	0	3	<0.06	<0.06	<0.06							
Dibenzo(ah)anthracene	mg/kg	1.1			<0.04	3	0	3	<0.04	<0.04	<0.04							
Fluoranthene	mg/kg	6300		0.12	<0.08	3	1	2	<0.08	0.12	<0.08							
Fluorene	mg/kg	19600			<0.01	3	0	3	<0.01	<0.01	<0.01							
Indeno(123-cd)pyrene	mg/kg	146			<0.03	3	0	3	<0.03	<0.03	<0.03							
Naphthalene	mg/kg	1200	76		<0.03	3	0	3	<0.03	<0.03	<0.03							
Phenanthrene	mg/kg	6200		0.09	<0.03	3	2	1	<0.03	0.09	0.04							
Pyrene	mg/kg	15000			<0.07	3	0	3	<0.07	<0.07	<0.07							
Total PAH-16MS	mg/kg			0.21	<0.08	3	1	2	<0.08	0.21	<0.08							
Phenols																		
Phenols - Total by HPLC	mg/kg	440			<0.2	3	0	3	<0.4	<0.2	<0.2							
Phenols - Total by HPLC	mg/kg	440			<0.2	3	0	3	<0.4	<0.2	<0.2							
Other analytes																		
% Stones >10mm	% w/w				<0.1	3	0	3	<0.1	<0.1	<0.1							
Fraction of organic carbon	N/A			0.0829	0.0365	3	3	0	0.0592	0.0829	0.0365							
pH	pH			8.29	8.2	3	3	0	8.29	8.25	8.2							

	Notes for GQRA (soil) Screening Tool Output	
1	Details of the **GAC (landuse, SOM and GAC version)** used in the GQRA are displayed at the top of the output screening sheet	
2	Full details of the **GAC derivation** are included in a separate appendix document	
3	The output screening sheet presents the reported Total Organic Carbon and the corresponding calculated Soil Organic Matter, using a conversion of TOC (%) divided by 0.58 to compute the SOM	
4	Any laboratory results that are appended to the reported concentrations (e.g. Tentatively Identified Compounds, PAH Double Ratio Plots etc.) are not included in the output screening sheet.	
	T1	**First level screening threshold, equating to:**
5		Chromium: total Cr concentration compared to Cr VI (conservative assessment)
		Chromium: total Cr concentration compared to Cr III
	Comment	Where Cr VI has been reported, the CrVI results are compared directly to the CrVI GAC
6		Mercury : total Hg concentration compared to elemental Hg (conservative assessment)
		Mercury : total Hg concentration compared to inorganic Hg
	Comment	The tool does not screen against methyl mercury (this parameter is only reported if mercury has been speciated)
7		Petroleum Hydrocarbons: The soil saturation limit has been exceeded
		Petroleum Hydrocarbons: The modelled GAC has been exceeded
	Comment	RSK has adopted an approach for petroleum hydrocarbons whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the GAC with the corresponding solubility or vapour saturation limits given in brackets on the GAC appendix document. First level (T1) GQRA screening is against the soil saturation limit.
8		Free cyanide: Conservatively for sites where a child is the critical receptor, concentration compared tor the SoBRA (2019) acute GAC for free CN
	Comment	Only applicable where the acute GAC of 24mg/kg for a child as the critical receptor is lower than the chronic GAC i.e. Residential without home-grown produce, POS Parks, POS Resi, Primary School and Secondary School land uses
9		Total cyanide: total CN compared to GAC for free CN or the SoBRA (2019) acute GAC for free CN (whichever is lowest)
	Comment	There is no GAC for total CN (risks are driven by free CN) therefore the first level GQRA screening is against free CN and no other screening is undertaken. For end uses where the critical receptor is a child the T1 is set at the acute GAC for free CN. Only applicable where the acute GAC of 24mg/kg is lower than the chronic GAC. The assumption that cyanide total comprises 100% free CN is conservative and consideration should be made on the suitability of this GAC based on the CSM.
10		Any analyte: First level screening threshold (T1) or GAC may be exceeded (e.g. lab results include a < or > symbol)
11	The GQRA screening for **asbestos** is in relation to presence or absence ('detect'). Presence is reported as asbestos type or quantification >0.001%. Absence is reported as < limit of quantification of 0.001% or No Asbestos Detected (NAD).	
12	Where individual reported concentrations are presented in grey (not black) font, the result was below the laboratory method detection limit.	
13		Where cells are shaded grey, all results for that analyte are below the laboratory method detection limit

Project name	Fairfield Social Club
Project code	4762
Client name	FSC MCR Ltd
Address	
NGR	
Land use	Public Open Space public park
SOM	1%
GAC version	2021_00

Notes

Lab sample ID	24/02032/1	24/02032/2	24/02032/3
Client sample ID	SS101	SS102	SS103
Depth to top			
Depth to bottom			
Date sampled	27/02/24	27/02/24	27/02/24

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects			
Metals and Inorganics											
Antimony	mg/kg				<5	3	0	3	<5	<5	<5
Arsenic	mg/kg	170		5	4	3	3	0	5	4	4
Barium	mg/kg	5770		52	41	3	3	0	52	41	45
Beryllium	mg/kg	60			<0.5	3	0	3	<0.5	<0.5	<0.5
Boron (water soluble)	mg/kg	46000		1.9	1.7	3	3	0	1.9	1.9	1.7
Cadmium	mg/kg	880			<0.5	3	0	3	<0.5	<0.5	<0.5
Chromium	mg/kg	33000	250	16	12	3	3	0	16	12	14
Chromium (trivalent)	mg/kg	33000		16	12	3	3	0	16	12	14
Chromium (hexavalent)	mg/kg	250			<1	3	0	3	<1	<1	<1
Copper	mg/kg	44000		17	16	3	3	0	17	16	16
Lead	mg/kg	1300		58	44	3	3	0	58	44	52
Mercury	mg/kg	240	30		<0.17	3	0	3	<0.17	<0.17	<0.17
Molybdenum	mg/kg				<1	3	0	3	<1	<1	<1
Nickel	mg/kg	800		12	10	3	3	0	12	10	10
Selenium	mg/kg	1800			<1	3	0	3	<1	<1	<1
Vanadium	mg/kg	5000		17	12	3	3	0	17	12	15
Zinc	mg/kg	173000		78	65	3	3	0	75	65	78
Cyanide (total)	mg/kg		24		<1	3	0	3	<1	<1	<1
Asbestos											
Asbestos in soil						3	0	3	NAD	NAD	NAD
Petroleum Hydrocarbons											
Ali >C5-C6	mg/kg	90000	304		<0.01	3	0	3	<0.01	<0.01	<0.01
Ali >C6-C8	mg/kg	150000	144	0.03	0.01	3	3	0	0.03	0.01	0.01
Ali >C8-C10	mg/kg	14000	78		<1	3	0	3	<1	<1	<1
Ali >C10-C12	mg/kg	21000	48		<1	3	0	3	<1	<1	<1
Ali >C12-C16	mg/kg	25000	24		<1	3	0	3	<1	<1	<1
Ali >C16-C21	mg/kg			5	3	3	3	0	5	3	4
Ali >C21-C35	mg/kg			99	48	3	3	0	92	48	99
Ali >C16-C35 calculated	mg/kg	450000		103	51	3	3	0	97	51	103
Ali >C35-C44	mg/kg	450000		25	13	3	3	0	20	13	25
Aro >C5-C7	mg/kg				<0.01	3	0	3	<0.01	<0.01	<0.01
Aro >C7-C8	mg/kg				<0.01	3	0	3	<0.01	<0.01	<0.01
Aro >C8-C10	mg/kg	7200	613		<1	3	0	3	<1	<1	<1
Aro >C10-C12	mg/kg	9200	364		<1	3	0	3	<1	<1	<1
Aro >C12-C16	mg/kg	10200		9	3	3	3	0	6	3	9
Aro >C16-C21	mg/kg	7600		21	7	3	3	0	18	7	21
Aro >C21-C35	mg/kg	7800		25	13	3	3	0	20	13	25
Aro >C35-C44	mg/kg	7800		2	<1	3	2	1	2	<1	1
BTEX - Benzene	mg/kg	190			<0.01	3	0	3	<0.01	<0.01	<0.01
BTEX - Toluene	mg/kg	90000	869		<0.01	3	0	3	<0.01	<0.01	<0.01

								Lab sample ID	24/02032/1	24/02032/2	24/02032/3							
								Client sample ID	SS101	SS102	SS103							
								Depth to top										
								Depth to bottom										
								Date sampled	27/02/24	27/02/24	27/02/24							
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects										
BTEX - Ethyl Benzene	mg/kg	17000	518		<0.01	3	0	3	<0.01	<0.01	<0.01							
BTEX - o Xylene	mg/kg	17000	478		<0.01	3	0	3	<0.01	<0.01	<0.01							
BTEX - m & p Xylene	mg/kg	17000	576		<0.01	3	0	3	<0.01	<0.01	<0.01							
TPH (Ali & Aro >C5-C44)	mg/kg			186	88	3	3	0	163	88	186							
Total Aliphatics >C5-C44	mg/kg			129	64	3	3	0	117	64	129							
Total Aromatics >C5-C44	mg/kg			57	24	3	3	0	46	24	57							
Fuel oxygenates																		
MTBE	mg/kg	98400	20400		<0.01	3	0	3	<0.01	<0.01	<0.01							
Polycyclic aromatic hydrocarbons																		
Acenaphthene	mg/kg	29000			<0.01	3	0	3	<0.01	<0.01	<0.01							
Acenaphthylene	mg/kg	29000			<0.01	3	0	3	<0.01	<0.01	<0.01							
Anthracene	mg/kg	149000			<0.02	3	0	3	<0.02	<0.02	<0.02							
Benzo(a)anthracene	mg/kg	49			<0.04	3	0	3	<0.04	<0.04	<0.04							
Benzo(a)pyrene	mg/kg	21			<0.04	3	0	3	<0.04	<0.04	<0.04							
Benzo(b)fluoranthene	mg/kg	13			<0.05	3	0	3	<0.05	<0.05	<0.05							
Benzo(ghi)perylene	mg/kg	1390			<0.05	3	0	3	<0.05	<0.05	<0.05							
Benzo(k)fluoranthene	mg/kg	367			<0.07	3	0	3	<0.07	<0.07	<0.07							
Chrysene	mg/kg	93			<0.06	3	0	3	<0.06	<0.06	<0.06							
Dibenzo(ah)anthracene	mg/kg	1.1			<0.04	3	0	3	<0.04	<0.04	<0.04							
Fluoranthene	mg/kg	6300		0.12	<0.08	3	1	2	<0.08	0.12	<0.08							
Fluorene	mg/kg	19600			<0.01	3	0	3	<0.01	<0.01	<0.01							
Indeno(123-cd)pyrene	mg/kg	146			<0.03	3	0	3	<0.03	<0.03	<0.03							
Naphthalene	mg/kg	1200	76		<0.03	3	0	3	<0.03	<0.03	<0.03							
Phenanthrene	mg/kg	6200		0.09	<0.03	3	2	1	<0.03	0.09	0.04							
Pyrene	mg/kg	15000			<0.07	3	0	3	<0.07	<0.07	<0.07							
Total PAH-16MS	mg/kg			0.21	<0.08	3	1	2	<0.08	0.21	<0.08							
Phenols																		
Phenols - Total by HPLC	mg/kg	440			<0.2	3	0	3	<0.4	<0.2	<0.2							
Phenols - Total by HPLC	mg/kg	440			<0.2	3	0	3	<0.4	<0.2	<0.2							
Other analytes																		
% Stones >10mm	% w/w				<0.1	3	0	3	<0.1	<0.1	<0.1							
Fraction of organic carbon	N/A			0.0829	0.0365	3	3	0	0.0592	0.0829	0.0365							
pH	pH			8.29	8.2	3	3	0	8.29	8.25	8.2							



SS101 – Sample Location



SS102 – Sample Location

COMPLEX CHALLENGES...
MADE SIMPLE



SS103 – Sample Location



ANSIO WEED CONTROL MEMBRANE