SUPPLEMENTARY SITE INVESTIGATION
SOUTH QUAY PARKSIDE
BARRY
THE BARRY WATERFRONT CONSORTIUM
GEA-17633-14-250
OCTOBER 2014

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Authors

Dr Lisa Horsley
Linford Shacklady

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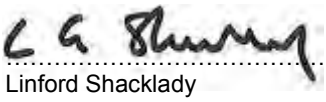

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Linford Shacklady

Approved by

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Keith Paramor

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East Mill,
Bridgefoot,
Belper,
Derbyshire
DE56 2UA
01773 829988
☑

Peter House,
Oxford Street,
Manchester
M1 5AN
0161 209 3415

Churchgate Court,
3 Church Road,
Whitchurch,
Cardiff
CF14 2DX
02920 610309

1 Leonard Place,
Westerham Road,
Keston
BR2 6HQ
01689 889980

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SECTION 1 INTRODUCTION

1.1 The Barry Waterfront Consortium proposes to remediate and develop an area of land known as South Quay Parkside, located to the south of Barry town centre, for residential development purposes. Idom Merebrook Limited (Merebrook) has been commissioned by The Barry Waterfront Consortium to update the findings of previous investigations in order to present the current contaminative status of the site compared to current guidelines, and to inform a particular specification for remediation of the site.

1.2 The objectives of the investigation are to:

i. Assess surface and sub-surface ground conditions present at the site;

ii. Identify hazards associated with ground contamination which may place constraints on the site and the proposed development;

iii. Evaluate the risks associated with any identified hazards; and

iv. Provide recommendations for the mitigation of any significant risks identified;

1.3 This report presents the findings of the investigation and provides an interpretation of the environmental conditions that exist at the site. The contaminative status of the site and the implications with respect to development have been interpreted in accordance with the current government guidance on source-pathway-receptor risk assessment. This report uses a Tier 1 risk assessment to ascribe a conservative qualitative appraisal of the hazards associated with the site.

1.4 The risk assessment has been used to underpin a remedial strategy designed to mitigate contaminant sources and manage exposure/migration pathways. Remediation works will be carried out on the site to provide a site suitable for redevelopment for a residential end use whilst managing controlled waters risks.

1.5 This report has been prepared for The Barry Waterfront Consortium for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult The Barry Waterfront Consortium and Merebrook as to the extent to which the findings may be appropriate for their use.

SECTION 2 MEREBROOK 2014 INVESTIGATION RATIONALE

2.1 INTRODUCTION

2.1.1 South Quay Parkside covers an area of approximately 5.96 hectares and is located to the south of Barry town centre along the north shore of Barry Island, centred on national grid reference 311281,166990. The site is bounded to the southwest by Barry Harbour Car Park, to the northwest by an adjacent parcel known as West Pond, to the northeast by an adjacent parcel known as South Quay, and to the southeast by a cliff and Clive Road which runs along the top of the cliff beyond which lies residential properties on Barry Island.

2.1.2 The land now known as South Quay Parkside was formerly included within the footprint of the adjacent parcels known as West Pond and South Quay. The area which was previously part of South Quay was historically occupied by a coal loading area with associated railway sidings prior to redevelopment into a fuels and chemical storage facility in the 1960s. The area which was previously part of West Pond encompasses the former Tank Wash building. Since the early 2000s the site has been largely derelict with all of infrastructure demolished or removed apart from hardstanding. It is understood that remediation comprising hydrocarbon free product removal has been undertaken to the north of South Quay Parkside as part of the wider remediation of West Pond.

2.1.3 Prior to 1884, the site was mainly fields on the north shore of Barry Island separated from the mainland by a tidal channel. Building of the dock began in 1884 beginning with the construction of dams to drain the estuarine area between Barry Island and the mainland. Due to deep alluvial deposits, the mudstone cliff on Barry Island was cut back in order to provide a suitable foundation for the dock wall along South Quay. Alluvium (sands and argillaceous deposits) and mudstone from the cliff was used as fill behind the dock wall.

2.1.4 The site has been investigated previously as follows:

i. Geo-Environmental Site Investigation Report – South Quay, Ove Arup & Partners Ltd, October 2008; and

ii. Geo-Environmental Site Investigation Report – West Pond, Ove Arup & Partners Ltd, September 2008.

2.1.5 The rationale for the recent Merebrook investigation has been devised to supplement the earlier findings and to provide a better understanding of the contaminant distribution and hydrogeological regime. This information has been used to provide an updated assessment of risk associated with contamination at the site.

2.2 SUPPLEMENTARY INVESTIGATION LOCATIONS

2.2.1 Intrusive sampling locations for the current investigation were chosen on the basis of further investigation of the tank farm area where contamination had previously been identified.

2.2.2 Boreholes were also situated to obtain additional information on the spatial and depth distribution of contamination and to allow a broader groundwater level monitoring network.

2.2.3 Intrusive investigation locations are summarised in Table 1 below.

Table 1: Site Investigation Location Rationale

Location Reference	Type	Rationale
SQMTT302	Trench	Target previously uninvestigated area downgradient of 8 tanks
SQMTT303	Trench	Target previously uninvestigated area downgradient of 8 tanks
SQMTP309	Trench	Target previously uninvestigated area downgradient South Quay Parkside tank farm
SQMTP310	Trench	Target previously uninvestigated area downgradient South Quay Parkside tank farm
SQMTP311	Trench	Assess previously identified hotspot and delineation
SQMTP312	Trench	Assess previously identified hotspot and delineation
SQMTP313	Pit	Previously uninvestigated tank base
SQMTP314	Pit	Previously uninvestigated tank base
SQMTP316	Pit	Previously uninvestigated area & delineation
SQMTP317	Pit	Previously uninvestigated area & delineation
SQMTP318	Pit	Previously uninvestigated area & delineation
SQMBH02	Borehole	Site boundary for retention during remediation to assess groundwater quality
SQMBH03	Borehole	Site boundary for retention during remediation to assess groundwater quality

2.3 SITE INVESTIGATION METHODS

2.3.1 An intrusive investigation was carried out by Merebrook between 3rd and 5th March 2014 and 18th and 19th April 2014, and comprised the following scope of work:

i. 2 rota-sonic boreholes to 20 metres below ground level (m bgl);

ii. 11 machine-dug trial holes to a maximum depth of 2.5 m bgl.

2.3.2 Exploratory hole locations are indicated on drawing 304-603 in Appendix 1. Logging of exploratory holes was undertaken by a Merebrook Officer. Exploratory hole logs are contained in Appendix 2.

2.3.3 Borehole SQMBH02 was installed with a single standpipe and borehole SQMBH03 was installed with two standpipes with shallow and deep response zones, for groundwater monitoring. Details of the installations are given in Table 2 below:

Table 2: Borehole Installation Details

Borehole Location Reference	Shallow			Deep		
	Depth of Standpipe (m bgl)	Response Zone (m bgl)	Strata	Depth of Standpipe (m bgl)	Response Zone (m bgl)	Strata
SQMBH02	single installation only			20	5-20	Interbedded Clay/Limestone/ Mudstone
SQMBH03	5	4-5	Made Ground	16	14-16	Mudstone

2.3.4 A further two rotasonic boreholes were installed off-site on the adjacent parcel of land known as South Quay. Details of the installations are given in Table 3 below:

Table 3: Borehole Installation Details

Borehole Location Reference	Shallow			Deep		
	Depth of Standpipe (m bgl)	Response Zone (m bgl)	Strata	Depth of Standpipe (m bgl)	Response Zone (m bgl)	Strata
SQMBH04	5	4-5	Made Ground	16.5	14-16.5	Mudstone
SQMBH05	5	4-5	Mudstone	16.5	14-16.5	Mudstone

2.3.5 Representative soil samples were taken from various depths and strata to assess the current contaminative status of the site. Contaminants of concern had previously been identified as hydrocarbons (fuels and solvents) from the previous use of the site. Soil samples were submitted to an MCERTS/ UKAS accredited laboratory for hydrocarbons, including VOCs and sVOCs. Selected soil samples were also screened for the presence of asbestos. The results are provided in Appendix 3.

SECTION 3 MEREBROOK 2014 INVESTIGATION - GROUND CONDITIONS

3.1 SURFACE GROUND CONDITIONS

3.1.1 The surface of the site largely comprised concrete hardstanding, tarmac or ashy rubble overgrown with ruderal vegetation. The site was currently being utilised as a contactors compound and parking area for ongoing works on West Pond.

3.2 SUB-SURFACE GROUND CONDITIONS

3.2.1 The ground conditions encountered were consistent with those previously reported by Arup, comprising made ground of variable thickness and mudstone. Thickness of made ground varies between approximately 1.0m towards the south of the site (demarcated by the location of the former cliff line), and approximately 3m depth north of the former cliff line.

3.2.2 Table 4 below summarises the ground conditions encountered

Table 4: Summary of Ground Conditions

STRATA	DEPTH TO TOP RANGE (m bgl)	THICKNESS RANGE (m)	TYPICAL DESCRIPTION
Made Ground	0	0.7-2.4	Sandy gravel (brick, concrete, mudstone, limestone, flint, occasional timber and metal)
Alluvium	0.8	1.3	Sandy clay
Solid (Penarth Group Mudstone)	0.2-2.4	>18.6	Weak to medium strong interbedded mudstone/limestone

3.2.3 Made ground was found to generally comprise ashy sandy coarse mudstone gravel with buried brick and concrete. In areas south of the former cliff line, the depth of made ground was relatively shallow (typically less than one metre) and was immediately underlain by limestone and mudstone.

3.2.4 Water within the made ground was noted to enter some trial pits at varying depths indicating the presence of perched groundwater bodies.

3.2.5 Underlying the more granular made ground between the former cliff line and the dock wall, areas of fill were noted. This generally comprised either reworked mudstone or alluvium (clay and sands) which were likely to have been excavated and placed during construction of the dock.

3.2.6 The Penarth Group mudstone was found to be weak to medium strong thinly laminated mudstone. Laminations were horizontal, planar and smooth. Moderate weathering was observed along bedding planes and fractures.

3.2.7 Organoleptic evidence of hydrocarbon contamination (staining, oily sheens and/or the presence of free product) was observed in all the trial holes within the former tank farm area. In locations outside of the former tank farm, organoleptic evidence was confined to hydrocarbon odours in trial pits SQMTP309, SQMTP310 and

SQMTP316. Field evidence of contamination is summarised on drawing 304-604 in Appendix 1.

SECTION 4 MEREBROOK 2014 INVESTIGATION – SOIL CHEMICAL QUALITY

4.1 SOIL QUALITY

4.1.1 A total of 7 soil samples from made ground was submitted to the laboratory for chemical analysis. The scope of analysis comprised targeted suites to detect known contaminants of concern (TPH, BTEX, PAH and VOC). The laboratory chemical analysis certificates are contained in Appendix 3.

4.1.2 An initial screening exercise has been undertaken whereby contaminants have been assessed against Generic Acceptance Criteria published by CIEH/LQM in 2009 assuming soil organic matter of 1 % for a residential setting where the possibility of consumption of home-grown produce exists. Where CIEH/LQM values are not available, Generic Acceptance Criteria published by EIC/AGS/CL:AIRE in 2010 have been used.

4.1.3 Analytical data has also been reproduced from the Arup 2008 report for assessment against current criteria. Summary spreadsheets, including statistical analyses, are provided in Appendix 4 and the results of the analysis are presented in Table 5.

4.1.4 This exercise has been used to inform the list of contaminants of concern to be put forward for further assessment.

Table 5: Summary of Soils Chemical Analysis Results

CONTAMINANT	UNITS	SCREENING LEVEL (SL)	ARUP 2008				MEREBROOK 2014			
			MAX	MEAN	No of Tests	No > SL*	MAX	MEAN	No of Tests	No > SL*
Asbestos in soil	-	Detected	-	-	2	0	-	-	7	0
TPH Aliphatic >EC_5 - EC_6	$mg.kg^{-1}$	*30*	2.29	0.20	14	0	6.4	1.93	7	0
TPH Aliphatic >EC_6 - EC_8	$mg.kg^{-1}$	*73*	61.2	4.42	14	0	67	17.58	7	0
TPH Aliphatic >EC_8 - EC_{10}	$mg.kg^{-1}$	*19*	40.1	2.93	14	1	100	24.60	7	2
TPH Aliphatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	*93*	1770	316.98	14	7	690	336.40	7	5
TPH Aliphatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	*740*	3200	534.64	14	3	1800	876.29	7	4
TPH Aliphatic >EC_{16} - EC_{21}	$mg.kg^{-1}$	*45000*	2490	416.83	14	0	1800	867.14	7	0
TPH Aliphatic >EC_{21} - EC_{35}	$mg.kg^{-1}$	*45000*	976	151.54	14	0	1300	500.86	7	0
TPH Aromatic >EC_5 - EC_7	$mg.kg^{-1}$	*65*	49	3.82	14	0	5.4	1.11	7	0
TPH Aromatic >EC_7 - EC_8	$mg.kg^{-1}$	*120*	26.5	1.95	14	0	4.7	1.49	7	0
TPH Aromatic >EC_8 - EC_{10}	$mg.kg^{-1}$	*27*	60.93	4.86	14	1	28	8.49	7	1
TPH Aromatic >EC_{10} - EC_{12}	$mg.kg^{-1}$	*69*	547	113.06	14	4	310	121.70	7	2
TPH Aromatic >EC_{12} - EC_{16}	$mg.kg^{-1}$	*140*	623	144.64	14	4	940	513.57	7	6
TPH Aromatic >EC_{16} - EC_{21}	$mg.kg^{-1}$	*250*	639	146.54	14	2	1400	784.29	7	6
TPH Aromatic >EC_{21} - EC_{35}	$mg.kg^{-1}$	*890*	441	95.91	14	0	2100	775.71	7	2
Benzo(a)pyrene	$mg.kg^{-1}$	*0.83*	7.14	0.94	38	10	0.70	0.23	7	0
Naphthalene	$mg.kg^{-1}$	*1.5*	120	4.35	38	7	0.86	0.13	7	0
Benzene	$mg.kg^{-1}$	*0.33*	460	34.07	14	6	0.97	0.30	7	1
1,2-dichloroethane	$mg.kg^{-1}$	*0.01*	0.005	0.01	14	0	0.01	0.01	7	0
Carbon tetrachloride (tetrachloromethane)	$mg.kg^{-1}$	*0.02*	0.014	0.01	14	0	0.01	0.01	7	0
Trichloroethene	$mg.kg^{-1}$	*0.11*	0.009	0.01	14	0	0.01	0.01	7	0
1,1,2-trichloroethane	$mg.kg^{-1}$	**0.60**	0.01	0.01	14	0	0.01	0.01	7	0
1,2,4-trimethylbenzene	$mg.kg^{-1}$	**0.35**	200	18.33	14	6	0.90	0.27	7	2
Cis-1,2-dichloroethene	$mg.kg^{-1}$	**0.11**	0.005	0.01	14	0	0.01	0.01	7	0
Trans-1,2-dichloroethene	$mg.kg^{-1}$	**0.19**	0.011	0.01	14	0	0.01	0.01	7	0
Styrene	$mg.kg^{-1}$	**8.10**	0.01	0.01	14	0	0.01	0.01	7	0
Vinyl Chloride (Chloroethene)	$mg.kg^{-1}$	*0.00047*†	0.01	0.01	14	0	0.01	0.01	7	0

Notes: * Number of samples exceeding screening level nd = not detected

Bold Values relate to EIC/AGS/CL:AIRE GACs assuming 1% SOM

Italic Values relate to CIEH/LQM 2nd edition GACs assuming 1% SOM

† screening level is less than the limit of detection of the analytical method therefore only detects have been categorized as exceedences

Benzo(a)pyrene and naphthalene have been used as markers for the PAH compounds.

4.1.5 TPH

4.1.5.1 A review of the Merebrook 2014 TPH results presented in Appendix 4 indicates elevated levels of aliphatic compounds at three locations and aromatic compounds at four locations:

i. SQMTT302(A&B) (aliphatic C8-C10 94 $mg.kg^{-1}$; C10-C12 400-690 $mg.kg^{-1}$; C12-C16 920-1300 $mg.kg^{-1}$; aromatic C8-C10 28 $mg.kg^{-1}$; C10-C12 230 $mg.kg^{-1}$; C12-C16 500-880 $mg.kg^{-1}$ C16-C21 1100-1200 $mg.kg^{-1}$ and C21-C35 2100 $mg.kg^{-1}$) at 0.5m bgl associated with a strong hydrocarbon odour and the presence of free product. Located to the north of tanks 83 and 86;

ii. SQMTT303(A&B) (aliphatic C8-C10 35 $mg.kg^{-1}$; C10-C12 110-500 $mg.kg^{-1}$; C12-C16 1800 $mg.kg^{-1}$; aromatic C10-C12 190 $mg.kg^{-1}$; C12-C16 170-940 $mg.kg^{-1}$ and C16-C21 300-1400 $mg.kg^{-1}$) at 0.4m bgl associated with strong hydrocarbon odour and the presence of free product. Located to the north of tanks 82 and 79;

iii. SQMTP312 (aliphatic C10-C12 590 $mg.kg^{-1}$; C12-C16 1300 $mg.kg^{-1}$; aromatic C10-C12 310 $mg.kg^{-1}$; C12-C16 840 $mg.kg^{-1}$ and C16-C21 1000 $mg.kg^{-1}$) at 0.6m bgl associated with black staining, oily sheen and a strong hydrocarbon odour. Located between tanks 83, 84, 85 and 86;

iv. SQMTP313 (aromatic C12-C16 230 $mg.kg^{-1}$ and C16-C21 330 $mg.kg^{-1}$) at 0.3m bgl. Located on beneath tank 87 with no organoleptic evidence of contamination;

4.1.5.2 A review of the Arup 2008 TPH results presented in Appendix 4 indicates elevated concentrations of aliphatic compounds at six locations and aromatic compounds at four locations:

i. SQTP04 (aliphatic C8-C10 40.1 $mg.kg^{-1}$; C10-C12 181-1770 $mg.kg^{-1}$; C12-C16 3200 $mg.kg^{-1}$; aromatic C8-C10 61 $mg.kg^{-1}$; C10-C12 547 $mg.kg^{-1}$ C12-C16 623 $mg.kg^{-1}$ and C16-C21 639 $mg.kg^{-1}$) at 0.1 and 0.4m bgl. Located adjacent to tank 86;

ii. SQTP05 (aliphatic C10-C12 1090 $mg.kg^{-1}$; C12-C16 959 $mg.kg^{-1}$; aromatic C10-C12 169 $mg.kg^{-1}$ and C12-C16 387 $mg.kg^{-1}$) at 2.5m bgl. Located to the north of the tank farm;

iii. SQTP06 (aliphatic C10-C12 305 $mg.kg^{-1}$, aromatic C10-C12 169 $mg.kg^{-1}$ and C12-C16 387 $mg.kg^{-1}$) at 0.4m bgl. Located between tanks 81, 82, 83 and 84;

iv. SQTP44 (aliphatic C10-C12 718 $mg.kg^{-1}$; C12-C16 1480 $mg.kg^{-1}$; aromatic C10-C12 440 $mg.kg^{-1}$; C12-C16 588 $mg.kg^{-1}$ and C16-C21 495 $mg.kg^{-1}$) at 0.3m bgl. Located between tanks 79, 80, 81 and 82;

v. SQTP45 (aromatic C10-C12 133 $mg.kg^{-1}$) at 0.2m bgl. Located between tanks 83, 84, 85 and 86;

4.1.6 PAH

4.1.6.1 A review of the Merebrook 2014 PAH results presented in Appendix 4 indicates there were no exceedences for PAH compounds.

4.1.6.2 A review of the Arup 2008 PAH results presented in Appendix 4 indicates PAH exceedences at 15 locations. Exceedences, particularly benzo(a)pyrene, were noted across the western 'tank wash building' portion of the site and were associated with upper made ground containing clinker and slag. Within the former tank farm area, only naphthalene was noted to be in excess of the screening criteria at SQTP04, SQTP06, SQTP44 and SQTP45.

4.1.7 VOCs

4.1.7.1 For those VOC having screening criteria available, a review of the Merebrook 2014 results indicated two exceedences for VOCs as follows:

i. SQMTT303 0.4m bgl (1,2,4-trimethylbenzene 0.9 $mg.kg^{-1}$), associated with strong hydrocarbon odour and the presence of free product. Located to the north of tanks 82 and 79;

ii. SQMTT312 0.6m bgl (1,2,4-trimethylbenzene 0.64 $mg.kg^{-1}$), associated with black staining, oily sheen and a strong hydrocarbon odour. Located between tanks 83, 84, 85 and 86. Elevated benzene (0.97 $mg.kg^{-1}$) was also noted

4.1.7.2 A review of the Arup 2008 VOC results presented in Appendix 4 also indicated elevated concentrations of 1,2,4-trimethylbenzene at five locations within the former tank farm area (SQTP04, SQTP05, SQTP06 SQTP44 and SQTP45)

4.1.8 Asbestos

4.1.8.1 None of the samples of made ground taken by Arup in 2008 tested positive for the presence of asbestos. One Merebrook 2014 trial pit (SQMTP318) located in the former tank farm area was found to contain visible asbestos cement fragments.

SECTION 5 MEREBROOK 2014 INVESTIGATION – GROUNDWATER

5.1 METHODOLOGY

5.1.1 Groundwater and surface water level monitoring and sampling was undertaken on two occasions: 2nd and 3rd June 2014 and 29th and 30th July 2014.

5.1.2 Contemporaneous monitoring was conducted on boreholes in South Quay Parkside and adjacent South Quay. The tank farm on South Quay Parkside comprises the western extent of the original South Quay tank farm and monitoring has sought to reflect the potential for groundwater quality to be impacted by contaminant sources on site as well as those immediately off site (i.e. South Quay).

5.1.3 Two on-site boreholes were monitored on each occasion as detailed in Table 6. A drawing showing sample locations is provided in Appendix 1.

Table 6: Borehole Installation details

Reference	Location	Installation Depth (m bgl)	Response Zone	
			m bgl	Strata
SQMBH02	Former Cliff Top Allotments South West of Tank Farm	20	5.0 -20.0	Mudstone
SQMBH03 S†	North of Tank Farm	5.0	4.0 -5.0	Made Ground
SQMBH03 D†	North of Tank Farm	16	14.0 – 16.0	Mudstone

Notes:
†S = shallow D = deep

5.1.4 At each location, groundwater was purged to approximately three well volumes using a submersible pump prior to sample collection using a dedicated disposable bailer. Conductivity, pH, temperature, ORP and dissolved oxygen were measured on site with a portable electronic multimeter.

5.1.5 Samples were purged and sampled in such a way to maintain integrity by minimizing any losses through volatilization. Samples were immediately transferred to on site cool boxes and sent to an MCERTS accredited laboratory for analysis.

5.1.6 Samples were analysed for a suite of inorganic and organic determinands. The previous 2008 investigation indicated the site was impacted by VOCs, including chlorinated VOCs (CVOCs), and these were also included within the analysis.

5.1.6.1 CVOCs can be degraded following biodegradation pathways (natural attenuation). Determinands which may indicate anaerobic biodegradation processes were therefore also included within the analysis.

5.1.6.2 Resting groundwater levels, including the presence of free product, were also recorded during monitoring and groundwater level loggers were installed in South

Quay Parkside and South Quay to monitor fluctuations in groundwater level over a prolonged period. Deployment details are provided in Table 7 below:

Table 7: Groundwater Logger Deployment Details

Location	Start Date	End Date	Notes
SQBH04	4th March 2014	17th March 2014	
SQBH06b	4th March 2014	17th March 2014	
SQBH09	4th March 2014	17th March 2014	
Dock	4th March 2014	17th March 2014	
SQMBH02	30th July 2014	18th August 2014	
SQMBH03 S	30th July 2014	18th August 2014	
SQMBH03 D	30th July 2014	18th August 2014	
SQMBH04 S	30th July 2014	18th August 2014	
SQMBH04 D	30th July 2014	18th August 2014	
SQMBH05 D	30th July 2014	18th August 2014	failed download
Dock	30th July 2014	18th August 2014	logger stolen

5.2 GROUNDWATER LEVEL DATA

5.2.1 Graphs showing potentiometric groundwater levels during deployment of the loggers are presented in Appendix 5.

5.2.1.1 The graphs indicate that the water level in the borehole SQMBH02 does not respond to dock water levels and is unlikely to be in hydraulic continuity with groundwater in SQMBH03. A review of the geological summary sheet indicates that the borehole lies beyond a geological boundary and an overlay of rainfall data during the logger deployment period indicates a strong response to rainfall.

5.2.1.2 During deployment of the groundwater logger in SQMBH03, the corresponding logger in the dock was stolen. However, based on earlier deployment of a logger in the dock, a similar response can be seen to those holes which respond directly to changing water level in the dock: a gradual decreasing trend in water level followed by a marked increase in water level during spring tides when the dock is refilled. The changing groundwater levels in both the shallow and the deep installations in SQMBH03 correlate closely indicating there is some hydraulic connectivity between the made ground and underlying mudstone at this location.

5.2.1.3 Groundwater levels in borehole SQMBH04D, situated in South Quay but immediately adjacent to the site boundary between South Quay and South Quay Parkside, were shown to exhibit a closely correlated response to groundwater levels in SQMBH03D indicating the groundwater body is in continuity between the two locations. The groundwater levels indicate that localized groundwater flow within the mudstone is towards West Pond.

5.3 GROUNDWATER CHEMICAL QUALITY

5.3.1 Water quality criteria published in The River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010 and Priority Substances amended by Annex I of Directive 2013/39/EU , where prescribed, have been used to assess the groundwater and dock water quality. Dependent upon the pollutant, the following standards have been applied:

i. Part 4 – Specific Pollutants: 'good' standards for transitional and coastal waters expressed as an annual average (AA);

ii. Part 5 – Environmental Quality Standards (EQS) for Priority and Priority Hazardous[1] Substances: MAC (maximum allowable concentration) or AA where MAC not prescribed;

iii. Part 6 – Other Substances: AA-EQS

5.3.2 For ethylbenzene and methyl phenols, which do not have prescribed criteria in the above regulations, UK non-statutory MAC EQSs for the protection of aquatic life have been applied.

5.3.3 The laboratory chemical analysis certificate is contained in Appendix 3 and groundwater level data is contained in Appendix 6. The results are summarised in Table 8.

[1] Priority Substances are those considered to pose a hazard for the aquatic environment with Priority Hazardous Substances being those that are considered particularly toxic, persistent and liable to bioaccumulation, and other substances which give rise to an equivalent level of concern

Table 8 Summary of Water Analysis Results South Quay Parkside SQMBH02, SQMBH03S, SQMBH03D

CONTAMINANT	UNITS	MAX	MEAN	Screening Criteria	No. >SC
Metals					
Arsenic	µg.l^{-1}	2.3	1.1	25	0
Cadmium	µg.l^{-1}	0.37	0.13	**1.5**	0
Chromium	µg.l^{-1}	0.68	0.35	0.6	1
Copper	µg.l^{-1}	1.5	0.78	5	0
Iron	µg.l^{-1}	330	123	1000	0
Lead	µg.l^{-1}	0.81	0.30	14	0
Mercury	µg.l^{-1}	0.01	<0.01	**0.07**	0
Nickel	µg.l^{-1}	2.6	1.5	34	0
Zinc	µg.l^{-1}	71	37	40	2
PAH					
Anthracene	µg.l^{-1}	0.04	0.02	**0.1**	0
Benzo(a)pyrene	µg.l^{-1}	<0.05	<0.03	**0.027**	0 *
Fluoranthene	µg.l^{-1}	<0.07	<0.07	0.12	0
Naphthalene	µg.l^{-1}	0.13	0.05	130	0
Benzo(b)fluoranthene	µg.l^{-1}	<0.02	<0.02	**0.017**	0 *
Benzo(k)fluoranthene	µg.l^{-1}	<0.03	<0.03	**0.017**	0 *
Benzo(g,h,i)perylene	µg.l^{-1}	<0.08	<0.08	**8.2E-4**	0 *
Indeno(1,2,3-c,d)pyrene	µg.l^{-1}	<0.05	<0.05	**1.7E-4**	0 *
BTEX					
Benzene	µg.l^{-1}	<1	<1	50	0
Toluene	µg.l^{-1}	<1	<1	40	0
Ethylbenzene	µg.l^{-1}	8	3.5	200	0
Xylene (sum of isomers)	µg.l^{-1}	<2	<2	30	0
VOC					
Carbon tetrachloride	µg.l^{-1}	4	1.7	12	0
Chloroform	µg.l^{-1}	1	<1	2.5	0
1,2-Dichloroethane	µg.l^{-1}	<1	<1	10	0
Hexachlorobutadiene	µg.l^{-1}	<1	<1	**0.6**	0 *
Tetrachloroethene	µg.l^{-1}	<1	<1	10	0
Trichloroethene	µg.l^{-1}	<1	<1	10	0
1,2,3-trichlorobenzene	µg.l^{-1}	<1	<1	0.4	0
1,2,4-trichlorobenzene	µg.l^{-1}	<1	<1	0.4	0
1,1,1-trichloroethane	µg.l^{-1}	<1	<1	100	0
1,1,2-trichloroethane	µg.l^{-1}	<1	<1	400	0
sVOCs					
2-Chlorophenol	µg.l^{-1}	<1.2	<1	50	0
2,4-Dichlorophenol	µg.l^{-1}	<1.2	<1	20	0
Hexachlorobenzene	µg.l^{-1}	<1.2	<1	**0.05**	0 *
2-Methylphenol	µg.l^{-1}	<1.2	<1	300	0
3&4-Methylphenol	µg.l^{-1}	<1.2	<1	300	0
Pentachlorophenol	µg.l^{-1}	<1.2	<1	1.0	0
Phenol	µg.l^{-1}	<1.2	<1	7.7	0
Other					
Ammoniacal Nitrogen	µg.l^{-1}	3.5	1.1	21	0
Cyanide	µg.l^{-1}	<40	<40	1	0 *

SALINITY INDICATORS	UNITS	MAX	MEAN
Chloride	mg.l^{-1}	6,900	3,144
Conductivity	µS.cm^{-1}	18,800	9,270

BIODEGRADATION INDICATORS (mean over two rounds)	UNITS	LOCATION		
		SQMBH02	SQMBH03S	SQMBH03D
Dissolved Oxygen	mg.l^{-1}	2.60	1.04	1.13
Oxidation Reduction Potential (ORP)	mV	3	-164	-104
TOC	mg.l^{-1}	9	16	24
Nitrate	mg.l^{-1}	18	0.2	5.1
Iron II	mg.l^{-1}	<0.1	<0.1	<0.1
Sulphate	mg.l^{-1}	58	210	895
Sulphide	mg.l^{-1}	0.028	1.2	0.033
BTEX	mg.l^{-1}	0.0012	<0.001	0.0014

PETROLEUM HYDROCARBONS	UNITS	MAX	MEAN
Aliphatic C5-C6	µg.l^{-1}	<0.1	<0.1
Aliphatic C6-C8	µg.l^{-1}	<0.1	<0.1
Aliphatic C8-C10	µg.l^{-1}	1.8	0.38
Aliphatic C10-C12	µg.l^{-1}	<1	<1
Aliphatic C12-C16	µg.l^{-1}	2.7	1.4
Aliphatic C16-C21	µg.l^{-1}	11	2.7
Aliphatic C21-C35	µg.l^{-1}	4.7	1.6
Aromatic C5-C7	µg.l^{-1}	<0.1	<0.1
Aromatic C7-C8	µg.l^{-1}	<0.1	<0.1
Aromatic C8-C10	µg.l^{-1}	5.3	1.4
Aromatic C10-C12	µg.l^{-1}	<1	<1
Aromatic C12-C16	µg.l^{-1}	<1	<1
Aromatic C16-C21	µg.l^{-1}	<1	<1
Aromatic C21-C35	µg.l^{-1}	<1	<1

Notes:

‘Good’ standards for Specific Pollutants (AA)

MAC-EQS for Priority Substances
bold = Priority Hazardous

AA-EQS for Priority Substances
bold = Priority Hazardous

Other substances AA-EQS

UK non-statutory MAC-EQS

* screening criteria < limit of detection

5.3.4 The results showed a total of three exceedences of the 'good' standards for specific pollutants as follows:

i. Chromium in SQMBH03D measured on one occasion 0.68 µg/L compared to the screening value of 0.60 µg/L. Chromium was not detected (<0.25 µg/L) on the second sampling occasion giving a mean measured value of <0.47 µg/L.

ii. Zinc in SQMBH03S measured on one occasion 70.8 µg/L compared to a screening value of 40 µg/L. A measured value of 19.7 µg/L was recorded on the second sampling occasion giving a mean measured value of 45.3 µg/L

iii. Zinc in SQMBH03D measured on one occasion 63.6 µg/L compared to a screening value of 40 µg/L. A measured value of 30.5 µg/L was recorded on the second sampling occasion giving a mean measured value of 47.1 µg/L

5.3.5 The results for measured chloride indicate saline intrusion in SQMBH03 (measured values ranging from 2300 to 6900 mg/L) compared to borehole SQMBH02 (measured values ranging from 74 to 93 mg/L). This is considered further evidence that the groundwater in the eastern portion of South Quay Parkside is influenced by the surface water body in the No1 dock.

5.3.6 Contaminants have been shown to either be below or marginal when compared to relevant screening levels. It is therefore considered that this contamination is not significant and existing dissolved phase contamination will not be considered further in this assessment.

SECTION 6 SUMMARY OF ARUP HUMAN HEALTH RISK ASSESSMENT (SOUTH QUAY)

6.1 INTRODUCTION

6.1.1 The former tank farm within South Quay Parkside was originally included within the footprint of the land parcel known as South Quay. As such an assessment of the risks to health of future residents of the development was carried out in 2008 and is summarised in the following sections.

6.2 SOIL CONTAMINATION – HUMAN HEALTH

6.2.1 Following their investigation, contaminants of concern in soil with the potential to trigger a risk to health of future residents were identified by Arup as presented in Table 9:

Table 9: Arup (2008) Contaminants of Concern in Soil

Contaminants of Concern in Soil	Statistical Outliers (potential hot spots)
Copper Zinc TPH Benzo(a)pyrene Vinyl Chloride BTEX substances 1,2-dichloroethane	Antimony Chromium Mercury Nickel Copper Zinc TPH Dibenzo(a.h)anthracene

6.2.2 Given that the development of the site requires land-raise, a revised conceptual model, incorporating 600mm of clean cover within residential garden and landscaped areas, was developed. In addition, it was assumed that all residential units will benefit from robust gas/vapour protection measures, thereby removing the indoor vapour inhalation pathway. This update to the conceptual model had the effect of removing all of the human health pollutant linkages with the exception of those involving compounds which have the potential to volatilise. Table 10 below shows the residual contaminants of concern following the adoption of the revised conceptual model:

Table 10: Arup (2008) Human Health Contaminants of Concern in soil after adoption of revised conceptual model

Contaminants of Concern in Soil	Statistical Outliers (potential hot spots)
TPH (aromatic compounds <C5-C16) Vinyl Chloride BTEX substances 1,2-dichloroethane	TPH (aromatic compounds <C5-C16)

6.2.3 Post-development, the only potential source-receptor pathways relevant to soil contamination is considered to be:

i. Inhalation of hydrocarbon vapours from soil outdoors.

6.2.4 **CLEA model – outdoor inhalation of soil-derived vapours**

6.2.4.1 A site-specific detailed quantitative risk assessment was carried out by Arup using (the now withdrawn) CLEA UK to assess the risk to future site users from outdoor inhalation of soil-derived vapours.

6.2.4.2 The site-specific assessment assumed that the only active pathway was outdoor inhalation of soil-derived contaminant vapours.

6.2.4.3 All the Arup contaminants of concern were found to be below the site-specific acceptance criteria and therefore the proposed remedial measure comprising placement of 600mm of clean capping was considered acceptable.

6.3 GROUNDWATER CONTAMINATION – HUMAN HEALTH

6.3.1 Assessment was undertaken in 2008 to determine the risk to future site users from outdoor inhalation of contaminant vapours derived from dissolved-phase contamination in groundwater. The assessment was undertaken using the RISC model which is also considered to be an appropriate method by 2014 standards.

6.3.2 RISC model – outdoor inhalation of groundwater-derived vapours

6.3.2.1 With regard to the risk to future site users from groundwater contamination, the following parameters were used in a RISC model:

Table 11: Site Specific Parameters Applied in Assessment using RISC Model

Exposure	Units	Resident	Comments
Lifetime	yrs	6	Assumes averaging time as per CLR10
Exposure Frequency to Vapours	day/yr	365	Assumes receptor is outside.
SITE PARAMETERS			
Wind speed	m/s	2	RISC default value
Distance from Source to Ground Surface, m	m	1.4	Min depth to groundwater after ground level raised to 9 mOD, as part of flood defence
SOIL PARAMETERS			
Soil type selected	-	Sandy Gravel	RISC default values
Total Porosity	cm^3/cm^3	0.25	
Water content	cm^3/cm^3	0.1	
Thickness of capillary fringe	cm	5	
Air content in capillary fringe	cm^3/cm^3	0.03	

6.3.2.2 A female child was considered to be most at risk for the residential development. Table 12 below details the exposure factors used for the future residents:

Table 12: Future End Use Site User Exposure Parameters

Parameter	Units	Child (0-6 yrs)	Comments
Lifetime	yrs	6	Assumes averaging time as per CLR10
Body weight	kg	14.6	Average weight for female receptors (CLR10 Pg 64)
Body height	m	1.115	Average body height for female receptors (CLR10 Pg 65)
Exposure duration outdoor air	yrs	6	Assumes exposure duration as per CLR10
Lung retention factor	-	1	RISC default value
Inhalation Rate Outdoors	m^3/hr	0.609	CLEA value for a 6 yr old female child
Time outdoors	hr/day	4	CLEA default value for residential land use sum of max active and passive time outdoors

6.3.2.3 Using the above information, site specific assessment criteria were derived for the protection of human health for the risk of inhalation of hydrocarbon vapours from groundwater in relation residential end use.

6.3.2.4 All maximum measured concentrations in the groundwater were below the site specific assessment criteria and therefore it was considered that there was no significant risk to future site users.

SECTION 7 MEREBROOK UPDATED HUMAN HEALTH RISK ASSESSMENT

7.1 INTRODUCTION

7.1.1 It is noted that the original model used by Arup to assess risks to health of future residents from soil contamination has been withdrawn. It is therefore appropriate to re-assess risks using up-to-date risk assessment tools.

7.1.2 Use of the RISC model to assess the potential for groundwater-derived contamination to impact human receptors is still considered reasonable and has been adopted for the purposes of this assessment.

7.2 SOIL CONTAMINATION – HUMAN HEALTH

7.2.1 In section 4 of this report, a list of contaminants of concern has been identified by comparing soil contaminant concentrations (from recent and historic investigations) against generic acceptance criteria assuming a residential development where there is potential for homegrown produce. The list of contaminants of concern includes asbestos, TPH, PAH and a number of VOCs.

7.2.2 However it is acknowledged that the conceptual model for the site includes provision of 600 mm clean capping in soft landscaped areas and also provision of robust gas/vapour protection in structures. For this reason, the only active

pathway for soil contamination will be via outdoor inhalation of soil-derived contaminant vapours. It is therefore appropriate to model this restricted exposure scenario to derive site specific acceptance criteria.

7.2.3 CLEA model – outdoor inhalation of soil-derived vapours

7.2.3.1 The current version of CLEA software has been used to derive screening levels for the contaminants of concern (using the same physicochemical and toxicology data used to derive the LQM/CIEH and EIC/AGS/CL:AIRE GACs) but with just the outdoor inhalation of vapour pathway active. All other CLEA default values have been retained.

7.2.3.2 Model output is presented in Appendix 7. This clearly demonstrates that site-specific acceptance criteria for selected TPH, PAH and VOCs, for exposure via the outdoor vapour inhalation pathway, are several orders of magnitude higher than the maximum contaminant concentrations recorded on site and are typically in excess of the respective soil saturation limits. It is acknowledged that the model does not model free phase hydrocarbons, however removal of free product will be required in any case. It is therefore concluded that the contamination residing in site soils will not pose a risk to future site residents provided the 600 mm clean cover and robust gas/vapour protection are provided as part of the development. No additional remediation is required to mitigate human health risks from soil-derived contamination.

7.3 GROUNDWATER CONTAMINATION – HUMAN HEALTH

7.3.1 Given the proposed physical separation of future human receptors and perched/groundwaters, the only potential pollutant linkage relevant to this section is outdoor inhalation of vapours derived from the volatilisation of groundwater-borne contamination.

7.3.2 The new 2014 data has been screened against the (RISC) risk based screening levels derived in 2008 to be protective of an outdoor receptor inhaling contaminant vapours derived via volatilisation of contamination dissolved in groundwater.

7.3.3 For the majority of the organic contaminants considered, the site-specific target level is limited by the chemical solubility of the contaminant in groundwater. In this case, it is not possible to dissolve sufficient contaminant in groundwater to trigger an inhalation risk via the volatilization to outdoor vapour pathway. Assessment is therefore only made for those contaminants where the site specific target level is within realistic realms of chemical solubility as set out in Table 13 below.

Table 13: Outdoor inhalation of groundwater-derived vapours

Contaminant	Site Specific Target Level (µg/l)
Benzene	120,000
Carbon Tetrachloride	16,000
Chloroform	52,000

7.3.4 None of these site-specific target levels were exceeded during the recent monitoring of groundwater.

7.3.5 On this basis, no significant risk has been identified to future site users via the outdoor vapour inhalation pathway with regard to groundwater-derived contaminant vapours. No additional remediation is required to mitigate human health risks from groundwater-derived contamination.

7.4 REMEDIATION AREAS - HUMAN HEALTH PROTECTION

7.4.1 Assuming the provision of 600 mm clean capping in garden areas coupled with robust gas/vapour protection in structure, no additional remediation is required to mitigate human health risks from soil or groundwater-derived contamination.

SECTION 8 SUMMARY OF ARUP AND ESP GROUNDWATER RISK ASSESSMENT

8.1 INTRODUCTION

8.1.1 Detailed quantitative risk assessment (DQRA) was undertaken by Arup in 2008 for South Quay and the results of groundwater monitoring from 2008 have been taken into account in the Merebrook assessment. DQRA was also undertaken by ESP in 2010 for West Pond and similarly, the results have been taken into account in this assessment.

8.1.2 Borehole SQBH01 was located on South Quay Parkside (formerly South Quay). A second borehole (WPBH29) was also located on South Quay Parkside (formerly West Pond) however this borehole was not monitored. ESP also installed a borehole (BH ROE2) on South Quay Parkside (formerly West Pond) in 2010 which was monitored on two occasions.

8.1.3 Boreholes BH ROE2 and SQBH1 have both been lost during remediation groundworks on West Pond and therefore were not monitored by Merebrook as part of the current investigation.

8.2 MEREBROOK REVIEW OF ARUP 2008 AND ESP 2010 DATA

8.2.1 Groundwater analytical data from boreholes SQBH1 and BH ROE2 have been compared against the relevant screening criteria as presented in Table 14 below.

Table 14: SQBH1 and BH ROE2 Contaminants of Concern

CONTAMINANT	UNITS	MAX	MEAN	Screening Criteria	No. >SC	
Metals						
Copper	$\mu g.l^{-1}$	2	-	5	0	-
Iron	$\mu g.l^{-1}$	140	-	1000	0	-
Lead	$\mu g.l^{-1}$	0.4	-	14	0	-
Nickel	$\mu g.l^{-1}$	4.1	-	34	0	-
PETROLEUM HYDROCARBONS						
Aliphatic C5-C6	$\mu g.l^{-1}$	<1		10	0	-
Aliphatic C6-C8	$\mu g.l^{-1}$	<1	-	10	0	-
Aliphatic C8-C10	$\mu g.l^{-1}$	<1	-	10	0	
Aliphatic C10-C12	$\mu g.l^{-1}$	<5	-	10	0	-
Aliphatic C12-C16	$\mu g.l^{-1}$	<5	-	10	0	-
Aliphatic C16-C21	$\mu g.l^{-1}$	<5	-	10	0	-
Aliphatic C21-C35	$\mu g.l^{-1}$	<5	-	10	0	-
Aromatic C5-C7	$\mu g.l^{-1}$	<1	-	10	0	-
Aromatic C7-C8	$\mu g.l^{-1}$	<1	-	10	0	-
Aromatic C8-C10	$\mu g.l^{-1}$	<1	-	10	0	-
Aromatic C10-C12	$\mu g.l^{-1}$	13	-	10	1	BHROE2
Aromatic C12-C16	$\mu g.l^{-1}$	8	-	10	0	-
Aromatic C16-C21	$\mu g.l^{-1}$	5	-	10	0	-
Aromatic C21-C35	$\mu g.l^{-1}$	<5	-	10	0	-
sVOCs						
Bis(2-ethylhexyl)phthalate	$\mu g.l^{-1}$	2	-	-	-	-
Other						
Ammoniacal Nitrogen	$\mu g.l^{-1}$	2.1	-	21	0	-

Notes:

'Good' standards for Specific Pollutants (AA)

MAC-EQS for Priority Substances
bold = Priority Hazardous

AA-EQS for Priority Substances
bold = Priority Hazardous

8.2.2 Inspection of the analytical results shows that the marginal exceedence (13 µg/L) of aromatic C10-12 comprises a measured concentration of naphthalene (an aromatic C10 compound) of 7 µg/L. The MAC-EQS for naphthalene is 130 µg/L and therefore there are no exceedences to the screening criteria for any of the contaminants of concern. It is therefore considered that this contamination is not significant and this dissolved phase contamination will not be considered further in this assessment.

SECTION 9 MEREBROOK CONTROLLED WATERS RISK ASSESSMENT

9.1 INTRODUCTION

9.1.1 This section considers the potential risks to controlled waters receptors including perched waters, deeper groundwater in the Penarth Group and adjacent surface waters in the dock.

9.1.2 The Penarth Group is classed as a Secondary Aquifer on the basis of water carried in sandstone beds, however no sandstone was identified in the drilled section beneath the site. It is also noted that groundwater is saline and unlikely to be exploited as a resource in this location.

9.1.3 Given the absence of significant dissolved phase contamination in perched or groundwaters within South Quay Parkside, contaminant sources with the potential to impact controlled waters are limited to any free product and contamination within shallow unsaturated soils within the tank farm.

9.2 CONTROLLED WATERS RISK ASSESSMENT

9.2.1 The following document details the findings of the adjacent South Quay groundwater risk assessment and should be read in conjunction with this document:

i. South Quay Barry Supplementary Site Investigation, Idom Merebrook, October 2014.

9.2.2 The groundwater beneath the tank farm on South Quay Parkside site has been shown to be in continuity with groundwater beneath adjacent South Quay. Groundwater level monitoring has suggested that groundwater beneath South Quay Parkside flows in a westerly direction rather than towards the dock. This is consistent with the findings of ESP in 2010.

9.2.3 No significant dissolved phase contamination has been identified in perched or groundwaters beneath South Quay Parkside.

9.2.4 The South Quay groundwater risk assessment suggests that migration of dissolved phase contamination in groundwater from beneath the main tank farm onto South Quay Parkside is likely to be limited and not significant.

9.2.5 Contamination (comprising mainly hydrocarbons) is present in the shallow soils beneath South Quay Parkside tank farm and is likely present as free phase. It is considered that the presence of localised grossly contaminated unsaturated soils (impacted by free product), represents a potential ongoing source of contamination and this is identified as a potential ongoing risk to groundwater. Current data on dissolved phase contamination would suggest however that this risk has not been realised to date.

9.2.6 On neighbouring South Quay, localised pockets of grossly contaminated perched water were identified trapped in buried structures, which were considered to represent a risk to groundwater should they be breached and water released. No such structures have been identified to date by the works on South Quay Parkside, however a watching brief and precautionary measures should be in place should future works encounter any such structures.

SECTION 10 PRELIMINARY REMEDIATION STRATEGY

10.1 INTRODUCTION

10.1.1 This section sets out the broad principles for remedial activity at the site which are required to provide a site suitable for redevelopment for a residential end use whilst managing controlled waters risks.

10.2 THE CONCEPTUAL MODEL AND IDENTIFIED RISKS

10.2.1 The proposed development will incorporate a 600 mm clean cap in all soft landscaped/garden areas and all structures will include robust gas/vapour protection measures in the floor construction. On this basis, no risks to human health have been identified.

10.2.2 No significant dissolved phase groundwater contamination has been identified at South Quay Parkside, however, hydrocarbon contamination including free phase has been identified in made ground soils within the tank farm. Potential risks to groundwater have been identified due to free product providing an ongoing contaminant source.

10.3 HUMAN HEALTH PROTECTION - REMEDIATION

10.3.1 No additional remediation is required over and above the provision of clean capping and robust gas/vapour protection measures.

10.4 CONTROLLED WATERS PROTECTION - REMEDIATION

10.4.1 Whilst there is evidence to suggest that risks to groundwater have not been realised, a precautionary approach is appropriate whereby remediation of grossly contaminated unsaturated soils is carried out in order to remove free product. In addition, careful dewatering of any buried structures discovered during the works should be ensured to minimise groundwater risk.

SECTION 11 CONCLUSIONS

11.1 Ground investigation has been carried out, to supplement earlier work by others, in order to provide a better understanding of the contaminant distribution and hydrogeological regime at South Quay Parkside. This information has been used to provide an updated assessment of contamination risk with respect to a future residential development and protection of controlled waters. The results of the contamination risk assessment have been used to set out the guiding principles for remediation of the site.

11.2 The proposed development will incorporate a 600 mm clean cap in all soft landscaped/garden areas and all structures will include robust gas/vapour protection measures in the floor construction. On this basis, no risks to human health have been identified and no additional remediation is required to protect future residents.

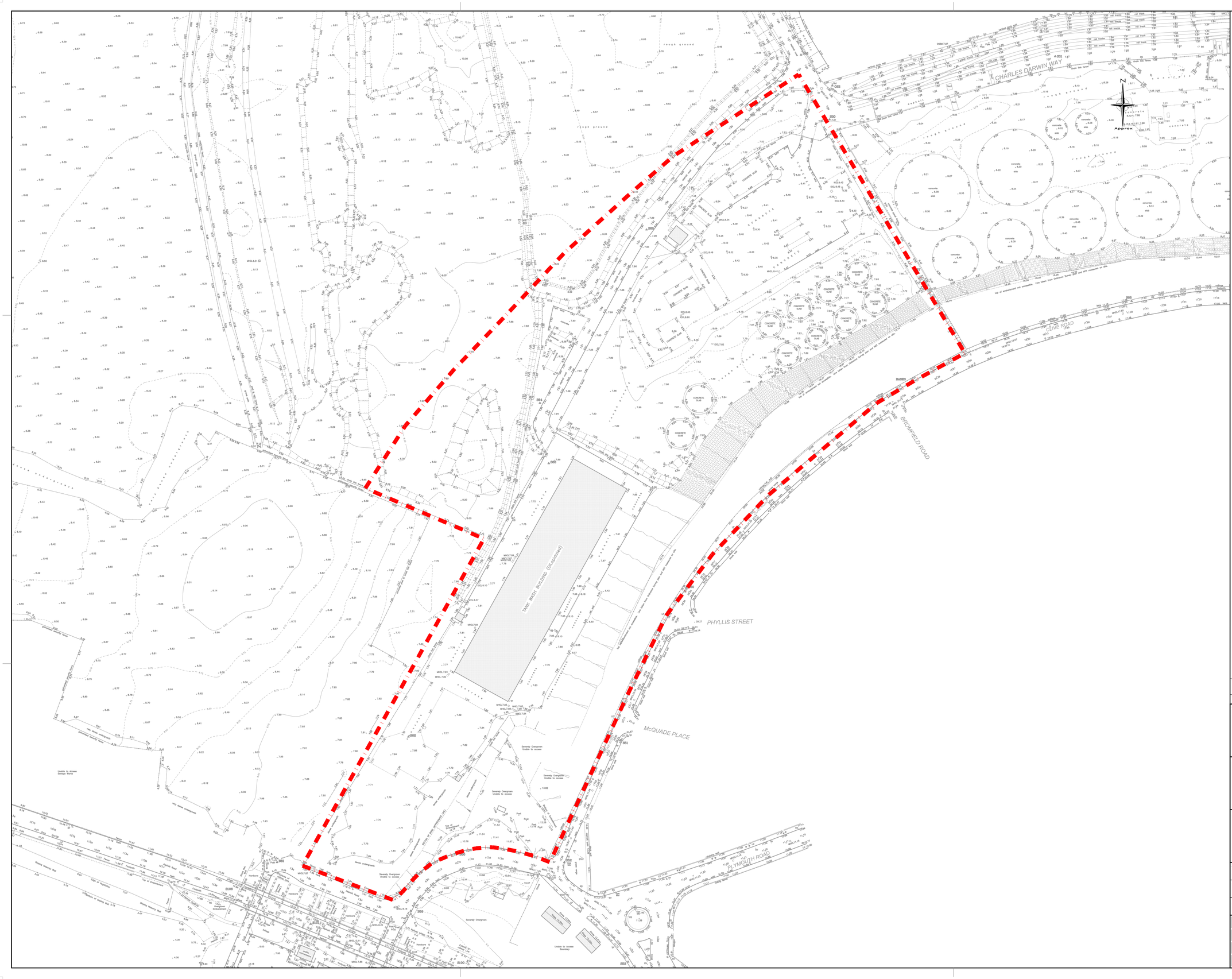
11.1.1 No significant dissolved phase groundwater contamination has been identified at South Quay Parkside, however, hydrocarbon contamination including free phase has been identified in made ground soils within the tank farm. Potential risks to groundwater have been identified due to free product providing a potential ongoing contaminant source, however current perched and groundwater data would suggest that such a risk has not been realised.

11.3 Nevertheless, a precautionary approach is appropriate whereby remediation is required for the long-term protection of controlled waters. The following principles should be adopted:

i. Remediation of grossly contaminated unsaturated soils in order to remove free product; and

ii. Careful dewatering of any buried structures.

APPENDIX 1 ▪ Drawings



Legend

Site boundary

First issue.	28/02/14		-
	LGS	SE	SE
Revision Details	Dwn	Chd	App'd

Client

Barry Waterfront Consortium

Project

South Quay Parkside

Dwg Title

Current Site Layout

Job No. 17633g	Dwg No. 304-607	Revision -
Scale 1:500	Date March 2013	Frame Dimensions mm (A1) 791 x 544
Drawn LGS	Checked SE	Approved SE

London
Kent
Derby
Cardiff

merebrook consulting
AN idom GROUP COMPANY

East Mill, Bridgefoot, Belper, Derbyshire, England. DE56 2UA
tel +44(0)1773 825888 fax +44(0)1773 829393 email consulting@merebrook.co.uk

Legend

- Site boundary
- EQRBHref — Cable Percussion Borehole (ARUP 2008)
- WPBHref — Rotary Borehole (ARUP 2008)
- SQTPref — Trial Pit (ARUP 2008)
- WPTPref — Trial Pit (ARUP 2008)
- PDref — Trial Pit (ARUP 1991)
- Wref — Trial Pit (ARUP 1994)
- BHROref — Rotary Borehole (Earth Science Partnership 2010)
- Mref — Trial Pit (Exploration Associates 1994)

Revision Details	Dwn	Chd	App'd
First issue.	LGS	SE	SE
	28/02/14		-

Client: Barry Waterfront Consortium

Project: South Quay Parkside

Dwg Title: Historic Site Investigation Locations

Job No.	Dwg No.	Revision
17633g	304-602	-
Scale	**Date**	**Frame Dimensions mm**
1:500	February 2013	(A1) 791 x 544
Drawn	**Checked**	**Approved**
LGS	SE	SE

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Kent
Derby
Cardiff
merebrook consulting
AN idom GROUP COMPANY
East Mill, Bridgefoot, Belper, Derbyshire, England. DE56 2UA
tel +44(0)1773 826668 fax +44(0)1773 826093 email consulting@merebrook.co.uk

Legend

- Site boundary
- SQPMTP# Trial Pit with reference
- SQPMTP# Trial Trench with reference

Revision Details	Dwn	Chd	App'd
First issue.	LGS	SE	SE
	27/02/14		-

Client

The Barry Waterfront Consortium

Project

South Quay Parkside
Barry

Dwg Title

Site Investigation Locations

Job No.	Dwg No.	Revision
17633g	304-603	-
Scale	**Date**	**Frame Dimensions mm**
1:500	September 2014	(A1) 791 x 544
Drawn	**Checked**	**Approved**
LGS	SE	SE

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Cardiff

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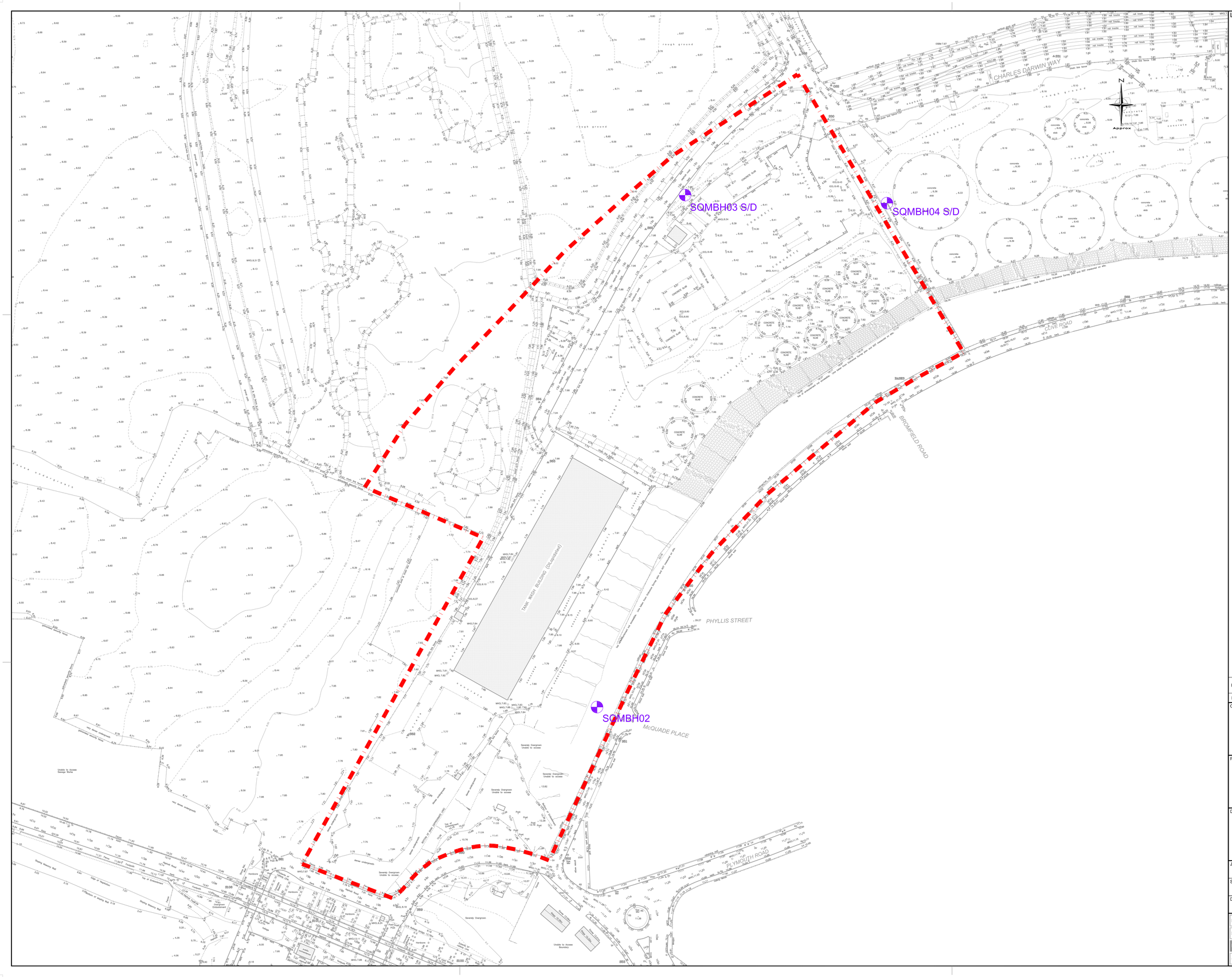
AN idom GROUP COMPANY

East Mill, Bridgefoot, Belper, Derbyshire, England. DE56 2UA
tel +44(0)1773 825888 fax +44(0)1773 829393 email consulting@merebrook.co.uk



Legend

- Site boundary
- SQMBHref — Merebrook 2014 borehole

First issue.	28/02/14		-
	LGS	SE	SE
Revision Details	Dwn	Chd	App'd

Client

Barry Waterfront Consortium

Project

South Quay Parkside

Dwg Title

Borehole Locations

Job No. 17633g	Dwg No. 304-607	Revision -
Scale 1:500	Date March 2013	Frame Dimensions mm (A1) 791 x 544
Drawn LGS	Checked SE	Approved SE

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Kent
Derby
Cardiff

merebrook consulting
AN idom GROUP COMPANY

East Mill, Bridgefoot, Belper, Derbyshire, England. DE56 2UA
tel +44(0)1773 825888 fax +44(0)1773 829393 email consulting@merebrook.co.uk

APPENDIX 2 ▪ Exploratory Hole Logs

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

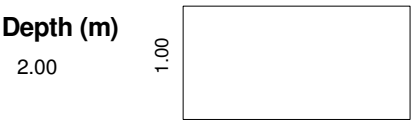
Co-ords: -

Trialpit No
SQPMTP309
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):



Date
06/03/2014

Scale
1:25

Location: Barry

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
				0.10		MADE GROUND. Asphalt.
0.25	D			0.25		MADE GROUND. Reworked medium to coarse, grey light brown very sandy gravel. Gravel is angular flint and limestone.
				(0.50)		MADE GROUND. Medium to coarse black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of concrete and brick. Slight hydrocarbon odour.
				0.75		MADE GROUND. Very soft orange, light brown slightly sandy reworked clay with inclusions of red brick.
				1.00		MADE GROUND. Orange red sandy mudstone gravel [reworked fill]
			▽	(1.00)		
				2.00		Trialpit Complete at 2.00 m

Remarks: Free product observed in groundwater at 1.7 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTP310
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Date
06/03/2014

Location: Barry

Dimensions (m):
3.00
Depth (m) 2.10
1.00

Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
				0.15		CONCRETE.
				0.25		MADE GROUND. Red Brick Layer.
				(0.55)		MADE GROUND. Medium to coarse black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of concrete, brick and metal. Strong hydrocarbon odour.
				0.80		Orange red slightly sandy gravelly CLAY. Gravel is angular mudstone.
1.30	D			(1.30)		
				2.10		Trialpit Complete at 2.10 m

Remarks:

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

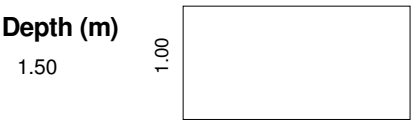
Trialpit No
SQPMTP311
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):

Depth (m)
1.50



Date
06/03/2014

Scale
1:25

Location: Barry

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D		▽	0.15 (0.15)		MADE GROUND. Grass over black ashy sandy reworked topsoil with inclusions of brick, concrete, wood and metal pipe.
				0.40 (0.25)		MADE GROUND. Red Brick layer with occasional black ashy components. Black oily water with free product at 0.4 m with very strong hydrocarbon odour.
				1.00 (0.60)		MADE GROUND. Reworked medium to coarse, light brown sandy gravel. Gravel is angular mudstone with rare red brick fragments.
				1.50 (0.50)		Boulders of angular to rounded LIMESTONE.
						Trialpit Complete at 1.50 m

Remarks: Free product observed in groundwater at 0.4 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTP312
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):

3.00

Depth (m)
1.40

1.00

Date
06/03/2014

Scale
1:25

Location: Barry

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.20	D			(0.80)		MADE GROUND. Grass over medium to coarse stained black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of limestone, concrete, brick and metal. Very strong hydrocarbon odour. Black oily water with free product at 0.8 m with very strong hydrocarbon odour.
0.60	J,V		▽	0.80		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE.
				(0.50)		
				1.30		Weathered LIMESTONE.
				1.40		Trialpit Complete at 1.40 m

Remarks: Free product observed in groundwater at 0.8 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
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Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

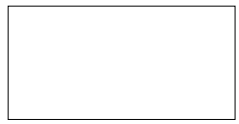
Trialpit No
SQPMTP313
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):

Depth (m)
2.00



Date
06/03/2014

Scale
1:25

Location: Barry

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
			▽	0.20		CONCRETE.
0.30	J,V					MADE GROUND. Grass over black ashy sandy gravel with inclusions of brick, concrete, wood and metal pipe.
				0.40		Extremely weak orange red sandy MUDSTONE.
				(0.40)		
				0.80		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE.
				(1.20)		
				2.00		Trialpit Complete at 2.00 m

Remarks: Free product observed in groundwater at 0.2 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

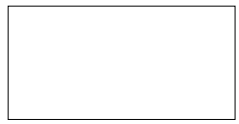
Trialpit No
SQPMTP314
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):

Depth (m)
2.50



Date
06/03/2014

Scale
1:25

Location: Barry

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.30	J,V		▽	0.20		CONCRETE.
				(0.60)		Extremely weak orange red sandy MUDSTONE.
				0.80		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE.
				(1.70)		
				2.50		Trialpit Complete at 2.50 m

Remarks: Free product observed in groundwater at 0.3 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTP316
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

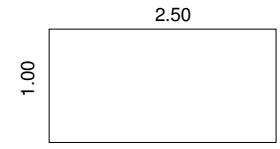
Project No.
17633GSP

Date
06/03/2014

Location: Barry

Dimensions (m):

Depth (m)
2.00



Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
				0.15		CONCRETE.
				(1.05)		MADE GROUND. Medium to coarse black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of concrete, brick and metal. Strong hydrocarbon odour.
				1.20		MADE GROUND. Stained black ashy sandy gravel. Gravel is reworked mudstone and brick. Strong hydrocarbon odour.
1.70	J,V		▽	(0.80)		
				2.00		Trialpit Complete at 2.00 m

Remarks: Free product observed in groundwater at 2.0 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTP317
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):

3.00

Depth (m)
2.50

1.00

Date
06/03/2014

Location: Barry

Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.50	D			(1.20)		MADE GROUND. Grass over black ashy clay sandy reworked topsoil with inclusions of brick, concrete, wood and metal pipe.
				1.20		
				(1.20)		MADE GROUND. Very soft orange, light brown slightly sandy reworked clay with inclusions of red brick.
				2.40		
				2.50		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE.
						Trialpit Complete at 2.50 m

1
2
3
4

Remarks:

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTP318
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

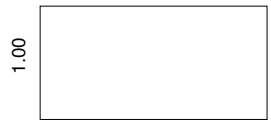
Project No.
17633GSP

Date
06/03/2014

Location: Barry

Dimensions (m):

Depth (m)
1.70



Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.50	D			(1.40)		MADE GROUND. Light brown grey slightly sandy gravel with inclusions of brick, concrete, metal and asbestos cement. Gravel is angular mudstone and concrete.
				1.40		
				(0.30)		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE.
				1.70		Trialpit Complete at 1.70 m

Remarks:

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

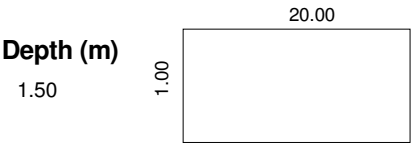
Co-ords: -

Trialpit No
SQPMTT302
Sheet 1 of 1

Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Dimensions (m):



Date
06/03/2014

Location: Barry

Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
				(0.40)		MADE GROUND. Grass over black ashy sandy reworked topsoil with inclusions of brick, concrete, wood and metal pipe. Black oil found in water at 0.4 m with lots of free product.
			▽	0.40		
0.50	J,V			(1.10)		MADE GROUND. Medium to coarse stained black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of concrete, brick and metal. Strong hydrocarbon odour.
				1.50		Trialpit Complete at 1.50 m

Remarks: Free product observed in groundwater a 0.4 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Plant: 30 Tonne Tracked 360 Excavator.

Co-ords: -

Trialpit No
SQPMTT303
Sheet 1 of 1

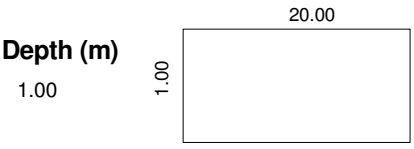
Project Name
South Quay Parkside, Barry

Project No.
17633GSP

Date
06/03/2014

Location: Barry

Dimensions (m):



Scale
1:25

Client: The Barry Waterfront Consortium

Logged By
TPC

Samples & In Situ Testing			Water Strike	Depth in metres (thickness)	Legend	Stratum Description
Depth (m)	Type	Results				
0.30	D		▽	(0.30) 0.30		MADE GROUND. Grass over black ashy sandy reworked topsoil with inclusions of brick, concrete, wood and metal pipe. Black oily water with free product at 0.3 m with very strong hydrocarbon odour.
				(0.40) 0.70		MADE GROUND. Medium to coarse stained black ashy, very sandy gravel. Gravel is reworked angular mudstone with cobbles of concrete, brick and metal. Strong hydrocarbon odour.
				(0.30) 1.00		Very weak grey mottled orange MUDSTONE gravel with boulders of LIMESTONE with rare black staining.
						Trialpit Complete at 1.00 m

Remarks: Free product observed in groundwater at 0.3 m bgl.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample

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Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH02
Sheet 1 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 24/04/2014-25/04/2014

Logged By
STM

Well	Water Strike	Samples & In Situ Testing: Depth (m)	Type	Results	Depth in metres (thickness)	Legend	Stratum Description
		0.10	J		(0.30)		MADE GROUND: Soft to firm consistency dark brown very silty gravelly clay topsoil with roots and rootlets. Gravel is of fine to course angular mudstone, limestone and rare brick.
					0.30		Firm consistency yellow brown slightly silty slightly gravelly CLAY. Gravel is of fine to course angular mudstone and limestone.
		0.50	J				
					(1.10)		
					1.40		Firm to stiff consistency grey to yellow brown gravelly slightly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		1.50	SPT	N=20 (7,5,4,5,5,6)			
		1.50-3.00	100	60 60 4			
					(2.40)		
		3.00	SPT	50/145mm 145mm (15,7,9,41)			
		3.00-4.50	100	80 80 0			
					3.80		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
					4.00		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					4.20		
					4.25		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
		4.50	SPT	18/45mm 45mm - Abandoned	(0.60)		
					4.85		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					4.95		
			TCR	SCR RQD FI			Continued next sheet

Remarks:
1. Hole terminated at 20.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
SPT - in-situ standard penetration test (spoon)
CPT - in-situ standard penetration test (cone)
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample
U - small undisturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH02
Sheet 2 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 24/04/2014-25/04/2014

Logged By
STM

Well	Water Strike	Rotary Coring Depth (m)	TCR	SCR	RQD	FI	Depth in metres (thickness)	Legend	Stratum Description
							5.10		4.85m - 4.95m : Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
		4.50-6.00	100	60	60	1	5.20		
							5.30		
							5.40		4.95m - 5.10m : Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							(0.30)		
							5.70		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
		6.00	SPT	20/35mm 35mm - Abandoned			5.95		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							(0.40)		
							6.35		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							6.50		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		6.00-7.50	100	73	73	6	6.70		
							6.75		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							6.90		
							7.00		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							7.05		
							7.20		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							7.40		
		7.50	SPT	50/70mm 70mm (9,16,50)			7.50		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							(0.42)		
							7.92		Weak thinly laminated light grey to brown argilaceous slightly silty MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
							8.00		Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
		7.50-9.00	100	66	66	2			Weak thinly laminated light grey to brown argilaceous slightly silty MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
							(1.55)		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		9.00	SPT	75/45mm 45mm - Abandoned					Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							9.55		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							9.65		
		9.00-10.50	100	33	33	2			Strong medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH
			TCR	SCR	RQD	FI			

Continued next sheet

Remarks:
1. Hole terminated at 20.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
SPT - in-situ standard penetration test (spoon)
CPT - in-situ standard penetration test (cone)
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample
U - small undisturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH02
Sheet 3 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 24/04/2014-25/04/2014

Logged By
STM

Well	Water Strike	Rotary Coring Depth (m)	TCR	SCR	RQD	FI	Depth in metres (thickness)	Legend	Stratum Description
							(1.00)		7.40m - 7.50m : GROUP].
									7.50m - 7.92m : Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		10.50	CPT	75/70mm					7.92m - 8.00m : Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
				70mm - Abandoned					
							10.65		
							10.75		8.00m - 9.55m : Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							(0.30)		
							11.05		9.55m - 9.65m : Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
		10.50-12.00	100	56	56	13	11.20		
							11.35		9.65m - 10.65m : Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
									Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		12.00	CPT	75/80mm					Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
				80mm - Abandoned			(1.65)		
									Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
		12.00-13.50	100	66	66	3			Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							13.00		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							(0.35)		
							13.35		Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
									Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
						14	(1.40)		
		13.50-15.00	100	60	60				
							14.75		Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Slight to
			TCR	SCR	RQD	FI			Continued next sheet

Remarks:
1. Hole terminated at 20.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
SPT - in-situ standard penetration test (spoon)
CPT - in-situ standard penetration test (cone)
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
V - amber glass jar (60ml)
B - bulk disturbed sample
U - small undisturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH02
Sheet 4 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 24/04/2014-25/04/2014

Logged By
STM

Well	Water Strike	Rotary Coring Depth (m)	TCR	SCR	RQD	FI	Depth in metres (thickness)	Legend	Stratum Description
		15.00	CPT	75/100mm			15.00		moderate weathering along bedding planes and fractures. [PENARTH GROUP].
				100mm - Abandoned			(0.35)		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
						16	15.35		Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
		15.00-16.50	100	43	43		15.50		Stiff consistency thinly laminated dark grey to black gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							15.60		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							(0.50)		Stiff consistency thinly laminated orange brown gravelly CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
							16.10		Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
							16.15		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							(0.35)		
							16.50		
						7			
		16.50-18.00	100	43	43		(1.30)		
							17.80		Weak to medium strong thinly laminated dark grey argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
							17.90		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
		18.00	CPT	45/10mm			(0.75)		
				10mm - Abandoned		8	18.65		Medium strong thinly laminated dark grey argilaceous fossiliferous MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
		18.00-19.50	100	60	60		(0.40)		
							19.05		Weak thinly laminated dark grey argilaceous fossiliferous MUDSTONE. Bedding is horizontal planar and smooth. Slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
							19.15		Strong thinly laminated to medium bedded light grey to dark grey argilaceous fossiliferous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
							(0.55)		
		19.50-20.00	100	60	60	16	19.70		Weak thinly laminated dark grey argilaceous fossiliferous MUDSTONE. Bedding is horizontal planar and smooth. Slight to moderate weathering along bedding planes and fractures. [PENARTH
							19.90		
			TCR	SCR	RQD	FI			Continued next sheet

16 17 18 19

Remarks:
1. Hole terminated at 20.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
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CPT - in-situ standard penetration test (cone)
PID - in-situ photoionization detector

D - small disturbed sample (tub)
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V - amber glass jar (60ml)
B - bulk disturbed sample
U - small undisturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH02
Sheet 4+ of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 24/04/2014-25/04/2014

Logged By
STM

Well	Water Strike	Rotary Coring Depth (m)	TCR	SCR	RQD	FI	Depth in metres (thickness)	Legend	Stratum Description
							20.00		19.70m - 19.90m : GROUP].
									19.90m - 20.00m : Medium strong thinly laminated dark grey argilaceous fossiliferous MUDSTONE. Bedding is horizontal planar and smooth. Fresh with slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
									End of Borehole at 20.00 m
						15			
						8			
						4			
			TCR	SCR	RQD	FI			

21
22
23
24

Remarks:
1. Hole terminated at 20.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
SPT - in-situ standard penetration test (spoon)
CPT - in-situ standard penetration test (cone)
PID - in-situ photoionization detector

D - small disturbed sample (tub)
J - amber glass jar (250ml)
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B - bulk disturbed sample
U - small undisturbed sample

idom merebrook
Offices:
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Keston: 01689 889980
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Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH03
Sheet 1 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 16/04/2014

Logged By
STM

Well	Water Strike	Samples & In Situ Testing: Depth (m)	Type	Results	Depth in metres (thickness)	Legend	Stratum Description
					0.10		MADE GROUND: Crushed limestone aggregate. [FILL].
					0.20		MADE GROUND: Firm consistency dark brown gravelly silty clay. Gravel is of fine to course angular limestone and coal. [FILL].
		0.40	J		(0.90)		MADE GROUND: Black sandy ashy gravel. Gravel is of fine to medium angular coal and clinker. [FILL].
					1.10		MADE GROUND: Firm consistency dark red brown sandy silty gravelly clay. Gravel is of fine to course sub-rounded quartz. [FILL].
		1.20	J		(0.40)		
					1.50		MADE GROUND: Black ashy gravelly silt with wood fragments. Gravel is of fine to course angular ash and clinker. [FILL].
					(0.30)		
					1.80		MADE GROUND: Crushed limestone aggregate. [FILL].
					(1.20)		
					3.00		MADE GROUND: Grey very clayey sandy gravel. Gravel is of fine to course sub-rounded to angular limestone. With regular cobbles and boulders of limestone. [FILL].
		3.30	J		(2.40)		
			Type	Results			

Continued next sheet

Remarks:
1. Hole terminated at 16.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane	D - small disturbed sample (tub)
IPP - in-situ pocket penetrometer	J - amber glass jar (250ml)
SPT - in-situ standard penetration test (spoon)	V - amber glass jar (60ml)
CPT - in-situ standard penetration test (cone)	B - bulk disturbed sample
PID - in-situ photoionization detector	U - small undisturbed sample

idom merebrook
Offices:
Belper: 01773 829988
Keston: 01689 889980
email: consulting@merebrook.co.uk

Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH03
Sheet 2 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 16/04/2014

Logged By
STM

Well	Water Strike	Samples & In Situ Testing: Depth (m)	Type	Results	Depth in metres (thickness)	Legend	Stratum Description
		5.00	J				MADE GROUND: Grey very clayey sandy gravel. Gravel is of fine to course sub-rounded to angular limestone. With regular cobbles and boulders of limestone. [FILL].
					5.40		
		5.50	J				Soft consistency grey silty CLAY. [TIDAL FLAT DEPOSITS].
					(3.10)		
					8.50		Stiff consistency thinly laminated dark grey gravelly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					(1.80)		
			Type	Results			Continued next sheet

6 7 8 9

Remarks:
1. Hole terminated at 16.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
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Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH03
Sheet 3 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 16/04/2014

Logged By
STM

Well	Water Strike	Samples & In Situ Testing: Depth (m)	Type	Results	Depth in metres (thickness)	Legend	Stratum Description
		10.00	D				Stiff consistency thinly laminated dark grey gravelly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					10.30		
							Strong thinly laminated to medium bedded light grey to dark grey argilaceous fine grained LIMESTONE. Bedding is horizontal planar and smooth. Slight weathering along bedding planes and fractures. [PENARTH GROUP].
					10.50		
							Stiff consistency thinly laminated brown to dark grey gravelly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
		11.00	D		(1.20)		
					11.70		
		11.80	D		(0.30)		Weak thinly laminated yellow brown argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
					12.00		
							Stiff consistency thinly laminated brown to dark grey gravelly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					(2.50)		
					14.50		
							Weak thinly laminated yellow brown argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
					(0.60)		
			Type	Results			Continued next sheet

Remarks:
1. Hole terminated at 16.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
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Equipment and Methods
GeoSonic Mini Rig

Borehole No
SQMBH03
Sheet 4 of 4

Project Name
South Quay, Barry

Project No.
17633GS

Co-ords
-

Hole Type
RO

Location: Barry

Level
-

Scale
1:25

Client: The Barry Waterfront Consortium

Dates: 16/04/2014

Logged By
STM

Well	Water Strike	Samples & In Situ Testing: Depth (m)	Type	Results	Depth in metres (thickness)	Legend	Stratum Description
					15.10		Weak thinly laminated yellow brown argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Moderate weathering along bedding planes and fractures. [PENARTH GROUP].
					(0.40)		Firm consistency thinly laminated brown to dark grey gravelly silty CLAY with intact mudstone lithorelics. Gravel is of fine to course angular mudstone. [PENARTH GROUP].
					15.50		Medium strong thinly laminated yellow brown argilaceous MUDSTONE. Bedding is horizontal planar and smooth. Slight to moderate weathering along bedding planes and fractures. [PENARTH GROUP].
					(0.50)		
					16.00		End of Borehole at 16.00 m
			Type	Results			

16
17
18
19

Remarks:
1. Hole terminated at 16.00m.
2. Groundwater not logged due to wter used in drilling process.
3. Log based on field engineers log to BS EN ISO 14688-1.

IVN - in-situ hand vane
IPP - in-situ pocket penetrometer
SPT - in-situ standard penetration test (spoon)
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B - bulk disturbed sample
U - small undisturbed sample

APPENDIX 3 ▪ Laboratory Analysis Certificates

Certificate of Analysis

Certificate Number 14-00491-1

12-Mar-14

Client Merebrook Consulting Limited
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference 14-00491-1

Client Reference (not supplied)

Contract Title Barry South Quay

Description 12 Soil samples, 2 Water samples.

Date Received 05-Mar-14

Date Started 05-Mar-14

Date Completed 12-Mar-14

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes This report supercedes 14-00491. Amendments made to sample ID's

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615762	615764	615766	615767	615771
			Sample ID	SQMTT201	SQMTP207	SQMTP208	SQMTT222	SQMTT220
			Depth	2.20	1.50	0.40-0.60	0.34-0.45	1.40-1.60
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	03/03/14	03/03/14	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Petroleum Hydrocarbons								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.14	0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	1.5	0.72	24
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.43	0.01	17	2.9	1.2
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	51	< 1.5	590	3.1	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	120	3.9	390	20	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	660	19	27	21	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	5000	44	11	9.8	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	5900	66	1000	58	25
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.04	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	0.01	0.03	0.06	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	0.65	0.19	9.9	1.6	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	16	< 0.9	52	1.1	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	80	< 0.5	130	14	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	790	0.9	150	15	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	5700	1.4	1.9	15	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	6600	< 10	340	47	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	12000	68	1400	100	25

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615772	615773
			Sample ID	SQMTT205A	SQMTT205B
			Depth	2.00-2.20	2.50
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	2.6
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	83	5.4
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	68	0.49
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	1.8	7.0
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	23	74
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	23	80
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	9.9	44
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	210	210
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.01	0.70
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	0.68
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	27
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	16	77
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	28	100
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	14	63
Aromatic C5-C35	DETSC 3072*	10	mg/kg	58	270
TPH Ali/Aro	DETSC 3072*	10	mg/kg	270	480

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615762	615764	615766	615767	615771
			Sample ID	SQMTT201	SQMTP207	SQMTP208	SQMTT222	SQMTT220
			Depth	2.20	1.50	0.40-0.60	0.34-0.45	1.40-1.60
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	03/03/14	03/03/14	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
VOCs								
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.24	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.12	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.20	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.38	0.12	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.42	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.04	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	0.10	0.02	0.12	0.04	0.04
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.08	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.02	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615762	615764	615766	615767	615771
			Sample ID	SQMTT201	SQMTP207	SQMTP208	SQMTT222	SQMTT220
			Depth	2.20	1.50	0.40-0.60	0.34-0.45	1.40-1.60
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	03/03/14	03/03/14	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	0.21	0.04	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y	Y	Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615762	615764	615766	615767	615771
			Sample ID	SQMTT201	SQMTP207	SQMTP208	SQMTT222	SQMTT220
			Depth	2.20	1.50	0.40-0.60	0.34-0.45	1.40-1.60
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	03/03/14	03/03/14	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
SVOCs								
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	1.8	5.8	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	7.9	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	< 0.1	2.8	< 0.1	0.6	< 0.1
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	6.6	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	8.4	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	8.5	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	22	2.4	0.5	0.5	< 0.1
Anthracene	DETS 071*	0.1	mg/kg	11	0.6	0.2	< 0.1	< 0.1
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	31	4.8	0.6	< 0.1	< 0.1
Pyrene	DETS 071*	0.1	mg/kg	26	4.1	0.5	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615762	615764	615766	615767	615771
			Sample ID	SQMTT201	SQMTP207	SQMTP208	SQMTT222	SQMTT220
			Depth	2.20	1.50	0.40-0.60	0.34-0.45	1.40-1.60
			Other ID					
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	03/03/14	03/03/14	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	21	2.7	0.4	< 0.1	< 0.1
Chrysene	DETS 071*	0.1	mg/kg	23	2.7	0.3	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	25	3.2	0.3	< 0.1	< 0.1
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	13	1.2	0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	19	2.3	0.3	< 0.1	< 0.1
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	13	1.5	0.2	< 0.1	< 0.1
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	9.2	0.5	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	15	1.8	0.2	< 0.1	< 0.1
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y	Y	Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615772	615773
			Sample ID	SQMTT205A	SQMTT205B
			Depth	2.00-2.20	2.50
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	0.50
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	0.11
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.38
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.04
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615772	615773
			Sample ID	SQMTT205A	SQMTT205B
			Depth	2.00-2.20	2.50
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	0.26	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615772	615773
			Sample ID	SQMTT205A	SQMTT205B
			Depth	2.00-2.20	2.50
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
SVOCs					
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	< 0.1	0.3
Anthracene	DETS 071*	0.1	mg/kg	< 0.1	0.1
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.4
Pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.3

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615772	615773
			Sample ID	SQMTT205A	SQMTT205B
			Depth	2.00-2.20	2.50
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	< 0.1	0.3
Chrysene	DETS 071*	0.1	mg/kg	< 0.1	0.3
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.4
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.2
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.1
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	< 0.1	0.1
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
615761	SQMTT201 0.10-0.30	SOIL	NAD	none	Jeff Cruddas
615763	SQMTP224 0.30-0.50	SOIL	Chrysotile	contains small clump of asbestos fibres	Jeff Cruddas
615765	SQMTP208 0.00-0.25	SOIL	NAD	none	Jeff Cruddas
615768	SQMTP209 0.30-0.50	SOIL	Chrysotile	contains small clumps of asbestos fibres	Jeff Cruddas
615770	SQMTT220 0.30-0.50	SOIL	Amosite Chrysotile	contains small clumps of amosite insulation & unbound chrysotile & amosite fibres	Jeff Cruddas

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615769	615774
			Sample ID	SQMTP209	SQMTT205
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	9900	1700
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	24	1400
Aliphatic C10-C12	DETSC 3072*	1	ug/l	79000	110000
Aliphatic C12-C16	DETSC 3072*	1	ug/l	1300	140000
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 50.0	80000
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 50.0	50000
Aliphatic C5-C35	DETSC 3072*	10	ug/l	90000	380000
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	300
Aromatic C10-C12	DETSC 3072*	1	ug/l	95000	20000
Aromatic C12-C16	DETSC 3072*	1	ug/l	2300	23000
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 50.0	30000
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 50.0	25000
Aromatic C5-C35	DETSC 3072*	10	ug/l	98000	99000
TPH Ali/Aro	DETSC 3072*	10	ug/l	190000	480000

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615769	615774
			Sample ID	SQMTP209	SQMTT205
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	4	14
Chloroform	DETSC 3432	1	ug/l	21	67
1,1,1-trichloroethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	2	25
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615769	615774
			Sample ID	SQMTP209	SQMTT205
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432*	1	ug/l	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
Naphthalene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3442*			Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615769	615774
			Sample ID	SQMTP209	SQMTT205
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
SVOCs					
Phenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Aniline	DETS 071*	1	ug/l	< 10.0	< 10.0
2-Chlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 10.0	< 10.0
2-Methylphenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 10.0	< 10.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 10.0	< 10.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 10.0	< 10.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 10.0	< 10.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 10.0	< 10.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 10.0	< 10.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 10.0	< 10.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 10.0	< 10.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 10.0	< 10.0
2-Nitroaniline	DETS 071*	1	ug/l	< 10.0	< 10.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 10.0	< 10.0
Acenaphthylene	DETS 071*	1	ug/l	< 10.0	< 10.0
3-Nitroaniline	DETS 071*	1	ug/l	< 10.0	< 10.0
Acenaphthene	DETS 071*	1	ug/l	< 10.0	< 10.0
4-Nitrophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Dibenzofuran	DETS 071*	1	ug/l	< 10.0	< 10.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 10.0	< 10.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Diethylphthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 10.0	< 10.0
Fluorene	DETS 071*	1	ug/l	< 10.0	< 10.0
4-Nitroaniline	DETS 071*	1	ug/l	< 10.0	< 10.0
Diphenylamine	DETS 071*	1	ug/l	< 10.0	< 10.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 10.0	< 10.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 10.0	< 10.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 10.0	< 10.0
Pentachlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Phenanthrene	DETS 071*	1	ug/l	< 10.0	< 10.0
Anthracene	DETS 071*	1	ug/l	< 10.0	< 10.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
Fluoranthene	DETS 071*	1	ug/l	< 10.0	< 10.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00491-1
Client Ref
Contract Title Barry South Quay

			Lab No	615769	615774
			Sample ID	SQMTP209	SQMTT205
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	04/03/14	04/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Pyrene	DETS 071*	1	ug/l	< 10.0	< 10.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzo(a)anthracene	DETS 071*	1	ug/l	< 10.0	< 10.0
Chrysene	DETS 071*	1	ug/l	< 10.0	< 10.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzo(b)fluoranthene	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzo(k)fluoranthene	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzo(a)pyrene	DETS 071*	1	ug/l	< 10.0	< 10.0
Indeno(123cd)pyrene	DETS 071*	1	ug/l	< 10.0	< 10.0
Dibenzo(ah)anthracene	DETS 071*	1	ug/l	< 10.0	< 10.0
Benzo(ghi)perylene	DETS 071*	1	ug/l	< 10.0	< 10.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 10.0	< 10.0
Dimethylphthalate	DETS 071*	1	ug/l	< 10.0	< 10.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 10.0	< 10.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 10.0	< 10.0
Azobenzene	DETS 071*	1	ug/l	< 10.0	< 10.0
Carbazole	DETS 071*	1	ug/l	< 10.0	< 10.0

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 14-00491-1
Client Ref
Contract Barry South Quay

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
615761	SQMTT201 0.10-0.30 SOIL	03/03/14	PT 1L (1kg)		
615762	SQMTT201 2.20 SOIL	03/03/14	GJ 250ml (250ml), GV (40ml)		
615763	SQMTP224 0.30-0.50 SOIL	03/03/14	PT 1L (1kg)		
615764	SQMTP207 1.50 SOIL	03/03/14	GJ 250ml (250ml), GV (40ml)		
615765	SQMTP208 0.00-0.25 SOIL	04/03/14	PT 1L (1kg)		
615766	SQMTP208 0.40-0.60 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml)		
615767	SQMTP222 0.34-0.45 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml)		
615768	SQMTP209 0.30-0.50 SOIL	04/03/14	PT 1L (1kg)		
615769	SQMTP209 WATER	04/03/14	GB 1L (1L), GV (40ml)		
615770	SQMTT220 0.30-0.50 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml), PT 1L (1kg)		
615771	SQMTT220 1.40-1.60 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml)		
615772	SQMTT205A 2.00-2.20 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml)		
615773	SQMTT205B 2.50 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml)		
615774	SQMTT205 WATER	04/03/14	GB 1L (1L), GV (40ml)		

Key: P-Plastic T-Tub G-Glass J-Jar V-Vial B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-00581-1

13-Mar-14

Client Merebrook Consulting Limited
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference 14-00581-1

Client Reference (not supplied)

Contract Title Barry - South Quay

Description 13 Soil samples, 2 Water samples.

Date Received 06-Mar-14

Date Started 07-Mar-14

Date Completed 13-Mar-14

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes This report supercedes 14-00581-1. Amendments made to sample ID's

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616321	616322	616323	616325	616328	616330
				SQMTT2	SQMTP2	SQMTP2	SQMTP2	SQMTP2	SQMTP2
			Sample ID	05C	11	12	03	13	04
			Depth	0.50	0.80	0.20	1.20	0.50	1.70
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	04/03/14	05/03/14	05/03/14	05/03/14	05/03/14	05/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.41	< 0.01	0.50	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	8.0	1.4	0.02	4.9	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	9.9	8.1	0.14	17	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	99	28	31	140	11
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	59	230	72	130	480	20
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	32	190	100	140	430	18
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	150	130	49	180	25
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	91	680	350	350	1300	74
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.03	0.80	< 0.01	< 0.01	0.07	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.19	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	6.7	8.7	1.1	9.4	0.10
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	13	630	73	300	56	9.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	9.3	290	68	140	290	6.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	9.9	300	80	130	350	15
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	180	130	60	220	42
Aromatic C5-C35	DETSC 3072*	10	mg/kg	32	1400	360	630	910	73
TPH Ali/Aro	DETSC 3072*	10	mg/kg	120	2100	710	980	2200	150

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616331	616332	616333	616335
				SQMTP2	SQMTP2	SQMTP2	SQMTP2
			Sample ID	14	15	16	17
			Depth	1.50-1.60	1.20	0.90	0.30-0.40
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	05/03/14
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.02	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	20	< 1.5	< 1.5	7.4
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	46	< 1.2	1.9	14
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	30	2.4	3.5	5.4
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	20	9.7	22	10
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120	13	27	37
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.01	0.22
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	1.3	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	10	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	16	< 0.6	4.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	23	< 1.4	31	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	50	< 10	36	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	170	13	63	37

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

	Lab No	616321	616322	616323	616325	616328	616330
		SQMTT2	SQMTP2	SQMTP2	SQMTP2	SQMTP2	SQMTP2
	Sample ID	05C	11	12	03	13	04
	Depth	0.50	0.80	0.20	1.20	0.50	1.70
	Other ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date	04/03/14	05/03/14	05/03/14	05/03/14	05/03/14	05/03/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	0.04	0.23	0.02	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	0.12	0.04	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.57	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	0.13	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	2.9	2.0	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.11	0.03	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	0.16	0.14	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.27	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616321	616322	616323	616325	616328	616330
				SQMTT2	SQMTP2	SQMTP2	SQMTP2	SQMTP2	SQMTP2
			Sample ID	05C	11	12	03	13	04
			Depth	0.50	0.80	0.20	1.20	0.50	1.70
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	04/03/14	05/03/14	05/03/14	05/03/14	05/03/14	05/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.19	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	0.06	1.0	0.19	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y	Y	Y	Y	Y
SVOCs									
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	< 0.1	6.9	2.3	0.9	1.3	0.2
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	0.5	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

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Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

	Lab No	616321	616322	616323	616325	616328	616330
		SQMTT2	SQMTP2	SQMTP2	SQMTP2	SQMTP2	SQMTP2
	Sample ID	05C	11	12	03	13	04
	Depth	0.50	0.80	0.20	1.20	0.50	1.70
	Other ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date	04/03/14	05/03/14	05/03/14	05/03/14	05/03/14	05/03/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	< 0.1	0.8	0.5	0.3	0.5	< 0.1
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	< 0.1	1.6	2.0	0.9	1.0	1.9
Anthracene	DETS 071*	0.1	mg/kg	< 0.1	0.2	0.4	< 0.1	< 0.1	0.4
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.6	1.9	0.3	0.4	3.0
Pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.7	2.1	0.3	0.4	2.5
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	< 0.1	0.3	0.9	0.1	0.2	1.2
Chrysene	DETS 071*	0.1	mg/kg	< 0.1	0.6	1.1	0.2	0.4	1.5
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.4	1.1	0.2	0.4	1.7
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.1	0.3	< 0.1	0.1	0.6
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.2	0.7	< 0.1	0.2	1.1
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	< 0.1	0.2	0.4	< 0.1	0.2	0.8
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.3
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	< 0.1	0.2	0.5	< 0.1	0.2	0.9
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y	Y	Y	Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616331	616332	616333	616335
				SQMTP2	SQMTP2	SQMTP2	SQMTP2
			Sample ID	14	15	16	17
			Depth	1.50-1.60	1.20	0.90	0.30-0.40
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	05/03/14
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.09	1.2
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

				Lab No	616331	616332	616333	616335
					SQMTP2	SQMTP2	SQMTP2	SQMTP2
				Sample ID	14	15	16	17
				Depth	1.50-1.60	1.20	0.90	0.30-0.40
				Other ID				
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sampling Date	05/03/14	05/03/14	05/03/14	05/03/14
				Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.26
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y	Y	Y
SVOCs							
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616331	616332	616333	616335
				SQMTP2	SQMTP2	SQMTP2	SQMTP2
			Sample ID	14	15	16	17
			Depth	1.50-1.60	1.20	0.90	0.30-0.40
			Other ID				
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	05/03/14
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	0.2	< 0.1	0.5	0.5
Anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	0.3	0.2	1.0	0.5
Pyrene	DETS 071*	0.1	mg/kg	0.2	0.2	0.9	0.4
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	0.1	0.1	0.5	0.2
Chrysene	DETS 071*	0.1	mg/kg	0.2	0.2	0.7	0.4
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	0.3	0.2	0.8	0.4
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	0.3	0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	0.2	< 0.1	0.5	0.2
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	0.1	< 0.1	0.3	0.2
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	0.1	< 0.1	0.4	0.2
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y	Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616324	616327
				SQMTP20	SQMTP21
			Sample ID	3	3
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	05/03/14	05/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	2600
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	410	46000
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	1700	91000
Aliphatic C10-C12	DETSC 3072*	1	ug/l	350000	350000
Aliphatic C12-C16	DETSC 3072*	1	ug/l	270000	1600000
Aliphatic C16-C21	DETSC 3072*	1	ug/l	250000	1500000
Aliphatic C21-C35	DETSC 3072*	1	ug/l	73000	400000
Aliphatic C5-C35	DETSC 3072*	10	ug/l	940000	4000000
Aromatic C5-C7	DETSC 3322	0.1	ug/l	14	8400
Aromatic C7-C8	DETSC 3322	0.1	ug/l	83	2100
Aromatic C8-C10	DETSC 3322	0.1	ug/l	690	48000
Aromatic C10-C12	DETSC 3072*	1	ug/l	430000	280000
Aromatic C12-C16	DETSC 3072*	1	ug/l	260000	900000
Aromatic C16-C21	DETSC 3072*	1	ug/l	220000	82000
Aromatic C21-C35	DETSC 3072*	1	ug/l	48000	210000
Aromatic C5-C35	DETSC 3072*	10	ug/l	960000	1500000
TPH Ali/Aro	DETSC 3072*	10	ug/l	1900000	5500000

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616324	616327
				SQMTP20	SQMTP21
			Sample ID	3	3
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	05/03/14	05/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 100	< 100
Chloromethane	DETSC 3432	1	ug/l	< 100	< 100
Vinyl Chloride	DETSC 3432	1	ug/l	< 100	< 100
Bromomethane	DETSC 3432	1	ug/l	< 100	< 100
Chloroethane	DETSC 3432	1	ug/l	< 100	< 100
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 100	< 100
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,1-dichloroethane	DETSC 3432	1	ug/l	< 100	< 100
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
2,2-dichloropropane	DETSC 3432	2	ug/l	< 100	< 100
Bromochloromethane	DETSC 3432	4	ug/l	< 100	< 100
Chloroform	DETSC 3432	1	ug/l	< 100	< 100
1,1,1-trichloroethane	DETSC 3432*	1	ug/l	< 100	< 100
1,1-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
Carbon tetrachloride	DETSC 3432	1	ug/l	< 100	< 100
Benzene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dichloroethane	DETSC 3432	1	ug/l	< 100	< 100
Trichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dichloropropane	DETSC 3432	1	ug/l	< 100	< 100
Dibromomethane	DETSC 3432	1	ug/l	< 100	< 100
Bromodichloromethane	DETSC 3432	4	ug/l	< 100	< 100
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
Toluene	DETSC 3432	1	ug/l	< 100	< 100
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 100	< 100
Tetrachloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,3-dichloropropane	DETSC 3432	1	ug/l	< 100	< 100
Dibromochloromethane	DETSC 3432	1	ug/l	< 100	< 100
1,2-dibromoethane	DETSC 3432	1	ug/l	< 100	< 100
Chlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 100	< 100
Ethylbenzene	DETSC 3432	1	ug/l	13000	440
m+p-Xylene	DETSC 3432	2	ug/l	< 100	960
o-Xylene	DETSC 3432	1	ug/l	< 100	< 100
Styrene	DETSC 3432	1	ug/l	< 100	< 100
Bromoform	DETSC 3432	1	ug/l	< 100	< 100
Isopropylbenzene	DETSC 3432	1	ug/l	5300	4200
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 100	< 100
Bromobenzene	DETSC 3432	1	ug/l	< 100	< 100

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Summary of Chemical Analysis
Water Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616324	616327
				SQMTP20	SQMTP21
			Sample ID	3	3
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	05/03/14	05/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 100	< 100
n-propylbenzene	DETSC 3432	1	ug/l	4700	43000
2-chlorotoluene	DETSC 3432	1	ug/l	< 100	< 100
1,3,5-trimethylbenzene	DETSC 3432*	1	ug/l	< 100	< 100
4-chlorotoluene	DETSC 3432	1	ug/l	< 100	< 100
Tert-butylbenzene	DETSC 3432	1	ug/l	< 100	< 100
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	770	82000
sec-butylbenzene	DETSC 3432	1	ug/l	6000	43000
p-isopropyltoluene	DETSC 3432	1	ug/l	< 100	< 100
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 100	< 100
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
n-butylbenzene	DETSC 3432	1	ug/l	5800	41000
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 100	< 100
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 100	< 100
Naphthalene	DETSC 3432	1	ug/l	< 100	< 100
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
GCMS BroadScan (headspace)	DETSC 3442*			Y	Y
SVOCs					
Phenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Aniline	DETS 071*	1	ug/l	< 5.0	< 50.0
2-Chlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 5.0	< 50.0
2-Methylphenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 5.0	< 50.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 5.0	< 50.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 5.0	< 50.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 5.0	< 50.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	14	< 50.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 5.0	520
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 5.0	< 50.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 5.0	< 50.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 5.0	< 50.0
2-Nitroaniline	DETS 071*	1	ug/l	< 5.0	< 50.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 5.0	< 50.0
Acenaphthylene	DETS 071*	1	ug/l	< 5.0	< 50.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

			Lab No	616324	616327
				SQMTP20	SQMTP21
			Sample ID	3	3
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	05/03/14	05/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
3-Nitroaniline	DETS 071*	1	ug/l	< 5.0	< 50.0
Acenaphthene	DETS 071*	1	ug/l	9.1	< 50.0
4-Nitrophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Dibenzofuran	DETS 071*	1	ug/l	< 5.0	57
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 5.0	< 50.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Diethylphthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 5.0	< 50.0
Fluorene	DETS 071*	1	ug/l	14	130
4-Nitroaniline	DETS 071*	1	ug/l	< 5.0	< 50.0
Diphenylamine	DETS 071*	1	ug/l	< 5.0	< 50.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 5.0	< 50.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 5.0	< 50.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 5.0	< 50.0
Pentachlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Phenanthrene	DETS 071*	1	ug/l	22	220
Anthracene	DETS 071*	1	ug/l	< 5.0	< 50.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
Fluoranthene	DETS 071*	1	ug/l	< 5.0	< 50.0
Pyrene	DETS 071*	1	ug/l	< 5.0	< 50.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzo(a)anthracene	DETS 071*	1	ug/l	< 5.0	< 50.0
Chrysene	DETS 071*	1	ug/l	< 5.0	< 50.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzo(b)fluoranthene	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzo(k)fluoranthene	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzo(a)pyrene	DETS 071*	1	ug/l	< 5.0	< 50.0
Indeno(123cd)pyrene	DETS 071*	1	ug/l	< 5.0	< 50.0
Dibenzo(ah)anthracene	DETS 071*	1	ug/l	< 5.0	< 50.0
Benzo(ghi)perylene	DETS 071*	1	ug/l	< 5.0	< 50.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 5.0	< 50.0
Dimethylphthalate	DETS 071*	1	ug/l	< 5.0	< 50.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 5.0	< 50.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 5.0	< 50.0
Azobenzene	DETS 071*	1	ug/l	< 5.0	< 50.0
Carbazole	DETS 071*	1	ug/l	< 5.0	< 50.0

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 14-00581-1
Client Ref
Contract Title Barry - South Quay

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
616326	SQMTP203 0.20	SOIL	NAD	none	John Leeson
616329	SQMTP213 0.40	SOIL	NAD	none	John Leeson
616334	SQMTP216 0.20-0.40	SOIL	NAD	none	John Leeson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 14-00581-1
Client Ref
Contract Barry - South Quay

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
616321	SQMTT205 0.50 SOIL	04/03/14	GJ 250ml (250ml), GV (40ml), PT 1L (1kg)		
616322	SQMTP211 0.80 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616323	SQMTP212 0.20 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616324	SQMTP203 WATER	05/03/14	GB 1L (1L), GV (40ml) x2		
616325	SQMTP203 1.20 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616326	SQMTP203 0.20 SOIL	05/03/14	PT 1L (1kg)		
616327	SQMTP213 WATER	05/03/14	GB 1L (1L), GV (40ml) x2		
616328	SQMTP213 0.50 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616329	SQMTP213 0.40 SOIL	05/03/14	PT 1L (1kg)		
616330	SQMTP204 1.70 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616331	SQMTP214 1.50-1.60 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616332	SQMTP215 1.20 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616333	SQMTP216 0.90 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616334	SQMTP216 0.20-0.40 SOIL	05/03/14	GJ 250ml (250ml), GV (40ml)		
616335	SQMTP217 0.30-0.40 SOIL	05/03/14	PT 1L (1kg)		Aliphatics/Aromatics, BTEX, SVOC TICs &

Key: G-Glass P-Plastic J-Jar V-Vial T-Tub B-Bottle

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-00725-1

14-Mar-14

Client Merebrook Consulting Limited
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference 14-00725-1

Client Reference (not supplied)

Contract Title Barry South Quay and South Quay Parkide

Description 17 Soil samples, 2 Water samples.

Date Received 07-Mar-14

Date Started 07-Mar-14

Date Completed 14-Mar-14

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes This report supercedes 14-00725. Amendments to sample ID's.

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

MCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
SQMTP218		0.3	617422	14/03/2014	Dark grey gravelly silty sandy CLAY
SQMTT223A		0.9	617424	14/03/2014	Black gravelly sandy silty CLAY
SQMTT223C		0.8	617425	14/03/2014	Black gravelly sandy silty CLAY
SQPMTP316		1.7	617427	14/03/2014	Black gravelly sandy CLAY
SQPMTT302B		0.5	617431	14/03/2014	Black dark grey gravelly clayey SAND with odd rootlets
SQPMTT303A	A	0.4	617433	14/03/2014	Dark grey clayey gravelly SAND
SQPMTT303B	B	0.4	617434	14/03/2014	Dark grey clayey gravelly silty SAND with odd rootlets
SQPMTP312		0.6	617438	14/03/2014	Dark grey black clayey gravelly SAND (made ground includes slag)
SQPMTP313		0.3	617439	14/03/2014	Grey clayey gravelly SAND

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617422	617424	617425	617427	617431	617433	617434
				SQMTP2	SQMTT2	SQMTT2	SQPMTP	SQPMTT	SQPMTT	SQPMTT
			Sample ID	18	23A	23C	316	302B	303A	303B
			Depth	0.30	0.90	0.80	1.70	0.50	0.40	0.40
			Other ID						A	B
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	06/03/14	06/03/14	06/03/14	06/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	4.2	< 0.01	0.14	< 0.01	0.01	5.5	1.5
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	15	< 0.01	2.7	0.48	0.88	67	8.5
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	100	< 0.01	10	< 0.01	4.1	35	8.1
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	280	2.6	40	2.8	400	110	500
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	310	8.4	57	94	920	350	1800
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	130	6.2	22	150	1200	370	1800
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	22	7.0	47	76	1300	110	570
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	860	24	180	320	3800	1000	4600
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.17	< 0.01	0.01	0.15	0.01	1.0	0.94
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.48	< 0.01	0.12	0.04	0.02	3.8	0.98
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	40	< 0.01	4.4	1.2	1.3	16	3.8
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	78	< 0.9	12	< 0.9	67	38	190
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	130	< 0.5	21	35	500	170	940
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	110	< 0.6	18	160	1100	300	1400
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	27	< 1.4	24	110	2100	140	510
Aromatic C5-C35	DETSC 3072*	10	mg/kg	390	< 10	80	310	3800	670	3000
TPH Ali/Aro	DETSC 3072*	10	mg/kg	1300	24	260	630	7600	1700	7600

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617438	617439
				SQPMTP	SQPMTP
			Sample ID	312	313
			Depth	0.60	0.30
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	6.4	0.11
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	25	1.2
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	15	10
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	590	62
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	1300	370
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	1200	350
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	350	100
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	3500	890
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	5.4	0.05
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	4.7	0.02
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	6.6	2.5
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	310	16
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	840	230
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1000	330
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	350	120
Aromatic C5-C35	DETSC 3072*	10	mg/kg	2600	700
TPH Ali/Aro	DETSC 3072*	10	mg/kg	6100	1600

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617422	617424	617425	617427	617431	617433	617434
				SQMTP2	SQMTT2	SQMTT2	SQPMTP	SQPMTT	SQPMTT	SQPMTT
			Sample ID	18	23A	23C	316	302B	303A	303B
			Depth	0.30	0.90	0.80	1.70	0.50	0.40	0.40
			Other ID						A	B
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	06/03/14	06/03/14	06/03/14	06/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
VOCs										
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.06	< 0.01	0.22	0.28	0.26	0.23
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.19	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	0.11	< 0.01	0.04	0.06	0.02	0.09	0.05
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	2.0	0.20	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.26	0.04	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.06	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	6.8	0.18	0.09	< 0.01	< 0.01	0.08	0.08
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.09	< 0.01	< 0.01	0.15	0.09
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.17	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617422	617424	617425	617427	617431	617433	617434
				SQMTP2	SQMTT2	SQMTT2	SQPMTP	SQPMTT	SQPMTT	SQPMTT
			Sample ID	18	23A	23C	316	302B	303A	303B
			Depth	0.30	0.90	0.80	1.70	0.50	0.40	0.40
			Other ID						A	B
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	06/03/14	06/03/14	06/03/14	06/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.57	< 0.01	< 0.01	0.90	0.31
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	0.52	0.17	0.23	< 0.01	< 0.01	0.86	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y	Y	Y	Y	Y	Y
SVOCs										
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	2.4	< 0.1	< 0.1	1.5	3.3	0.8	8.1
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.9
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617422	617424	617425	617427	617431	617433	617434
				SQMTP2	SQMTT2	SQMTT2	SQPMTP	SQPMTT	SQPMTT	SQPMTT
			Sample ID	18	23A	23C	316	302B	303A	303B
			Depth	0.30	0.90	0.80	1.70	0.50	0.40	0.40
			Other ID						A	B
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	05/03/14	05/03/14	05/03/14	06/03/14	06/03/14	06/03/14	06/03/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	0.2	< 0.1	< 0.1	0.4	< 0.1	< 0.1	1.9
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	0.9	< 0.1	0.2	1.2	< 0.1	0.3	3.3
Anthracene	DETS 071*	0.1	mg/kg	0.1	< 0.1	< 0.1	0.4	< 0.1	0.1	< 0.1
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	0.9	0.2	0.3	1.4	0.5	< 0.1	0.6
Pyrene	DETS 071*	0.1	mg/kg	0.7	0.2	0.2	1.4	0.8	< 0.1	0.8
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	0.4	< 0.1	< 0.1	0.6	< 0.1	< 0.1	0.2
Chrysene	DETS 071*	0.1	mg/kg	0.6	< 0.1	< 0.1	1.0	0.8	< 0.1	0.4
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	0.7	0.2	0.3	1.0	0.4	< 0.1	0.2
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	0.2	< 0.1	0.1	0.4	0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	0.4	< 0.1	0.2	0.7	0.2	< 0.1	0.1
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	0.3	< 0.1	0.1	0.4	< 0.1	< 0.1	< 0.1
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	0.3	< 0.1	0.1	0.5	0.2	< 0.1	< 0.1
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y	Y	Y	Y	Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

Lab No	617438	617439
	SQPMTP	SQPMTP
Sample ID	312	313
Depth	0.60	0.30
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	06/03/14	06/03/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	0.97	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	0.24	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	0.14	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	0.27	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617438	617439
				SQPMTP	SQPMTP
			Sample ID	312	313
			Depth	0.60	0.30
			Other ID		
			Sample Type	SOIL	SOIL
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	0.64	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y	Y
SVOCs					
Phenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	5.3	< 0.1
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

Lab No	617438	617439
	SQPMTP	SQPMTP
Sample ID	312	313
Depth	0.60	0.30
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	06/03/14	06/03/14
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	1.1	< 0.1
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	1.5	0.3
Anthracene	DETS 071*	0.1	mg/kg	0.4	0.2
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	0.4	< 0.1
Pyrene	DETS 071*	0.1	mg/kg	0.4	< 0.1
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	0.1	< 0.1
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617432	617440
				SQPMTT3	SQPMTP3
			Sample ID	02	14
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	12	44
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	640	59
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	4000	1800
Aliphatic C10-C12	DETSC 3072*	1	ug/l	2400	2300
Aliphatic C12-C16	DETSC 3072*	1	ug/l	20000	39000
Aliphatic C16-C21	DETSC 3072*	1	ug/l	19000	39000
Aliphatic C21-C35	DETSC 3072*	1	ug/l	6900	9900
Aliphatic C5-C35	DETSC 3072*	10	ug/l	53000	92000
Aromatic C5-C7	DETSC 3322	0.1	ug/l	12	2.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	7.0	4.4
Aromatic C8-C10	DETSC 3322	0.1	ug/l	1400	550
Aromatic C10-C12	DETSC 3072*	1	ug/l	2.1	260
Aromatic C12-C16	DETSC 3072*	1	ug/l	3900	25000
Aromatic C16-C21	DETSC 3072*	1	ug/l	5000	35000
Aromatic C21-C35	DETSC 3072*	1	ug/l	780	4300
Aromatic C5-C35	DETSC 3072*	10	ug/l	11000	66000
TPH Ali/Aro	DETSC 3072*	10	ug/l	64000	160000

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617432	617440
				SQPMTT3	SQPMTP3
			Sample ID	02	14
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 100	< 100
Chloromethane	DETSC 3432	1	ug/l	< 100	< 100
Vinyl Chloride	DETSC 3432	1	ug/l	< 100	< 100
Bromomethane	DETSC 3432	1	ug/l	< 100	< 100
Chloroethane	DETSC 3432	1	ug/l	< 100	< 100
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 100	< 100
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,1-dichloroethane	DETSC 3432	1	ug/l	< 100	< 100
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
2,2-dichloropropane	DETSC 3432	2	ug/l	< 100	< 100
Bromochloromethane	DETSC 3432	4	ug/l	< 100	< 100
Chloroform	DETSC 3432	1	ug/l	< 100	< 100
1,1,1-trichloroethane	DETSC 3432*	1	ug/l	< 100	< 100
1,1-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
Carbon tetrachloride	DETSC 3432	1	ug/l	< 100	< 100
Benzene	DETSC 3432	1	ug/l	300	< 100
1,2-dichloroethane	DETSC 3432	1	ug/l	< 100	< 100
Trichloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dichloropropane	DETSC 3432	1	ug/l	< 100	< 100
Dibromomethane	DETSC 3432	1	ug/l	< 100	< 100
Bromodichloromethane	DETSC 3432	4	ug/l	< 100	< 100
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
Toluene	DETSC 3432	1	ug/l	< 100	< 100
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 100	< 100
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 100	< 100
Tetrachloroethylene	DETSC 3432	1	ug/l	< 100	< 100
1,3-dichloropropane	DETSC 3432	1	ug/l	< 100	< 100
Dibromochloromethane	DETSC 3432	1	ug/l	< 100	< 100
1,2-dibromoethane	DETSC 3432	1	ug/l	< 100	< 100
Chlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 100	< 100
Ethylbenzene	DETSC 3432	1	ug/l	< 100	< 100
m+p-Xylene	DETSC 3432	2	ug/l	< 100	< 100
o-Xylene	DETSC 3432	1	ug/l	< 100	< 100
Styrene	DETSC 3432	1	ug/l	< 100	< 100
Bromoform	DETSC 3432	1	ug/l	< 100	< 100
Isopropylbenzene	DETSC 3432	1	ug/l	< 100	< 100
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 100	< 100
Bromobenzene	DETSC 3432	1	ug/l	< 100	< 100

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617432	617440
				SQPMTT3	SQPMTP3
			Sample ID	02	14
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 100	< 100
n-propylbenzene	DETSC 3432	1	ug/l	< 100	< 100
2-chlorotoluene	DETSC 3432	1	ug/l	< 100	< 100
1,3,5-trimethylbenzene	DETSC 3432*	1	ug/l	< 100	< 100
4-chlorotoluene	DETSC 3432	1	ug/l	< 100	< 100
Tert-butylbenzene	DETSC 3432	1	ug/l	< 100	< 100
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 100	< 100
sec-butylbenzene	DETSC 3432	1	ug/l	< 100	< 100
p-isopropyltoluene	DETSC 3432	1	ug/l	< 100	< 100
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 100	< 100
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
n-butylbenzene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 100	< 100
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 100	< 100
Naphthalene	DETSC 3432	1	ug/l	< 100	< 100
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 100	< 100
GCMS BroadScan (headspace)	DETSC 3442*			Y	Y
SVOCs					
Phenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 10.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 10.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 10.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 10.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 10.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 10.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 10.0
2-Methylnaphthalene	DETS 071*	1	ug/l	2.8	< 10.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 10.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 10.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 10.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 10.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 10.0
Acenaphthylene	DETS 071*	1	ug/l	< 1.0	< 10.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

			Lab No	617432	617440
				SQPMTT3	SQPMTP3
			Sample ID	02	14
			Depth		
			Other ID		
			Sample Type	WATER	WATER
			Sampling Date	06/03/14	06/03/14
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 10.0
Acenaphthene	DETS 071*	1	ug/l	< 1.0	< 10.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 10.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 10.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 10.0
Fluorene	DETS 071*	1	ug/l	< 1.0	< 10.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 10.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 10.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 10.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 10.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 10.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Phenanthrene	DETS 071*	1	ug/l	< 1.0	30
Anthracene	DETS 071*	1	ug/l	< 1.0	13
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
Fluoranthene	DETS 071*	1	ug/l	< 1.0	< 10.0
Pyrene	DETS 071*	1	ug/l	< 1.0	< 10.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzo(a)anthracene	DETS 071*	1	ug/l	< 1.0	< 10.0
Chrysene	DETS 071*	1	ug/l	< 1.0	< 10.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzo(b)fluoranthene	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzo(k)fluoranthene	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzo(a)pyrene	DETS 071*	1	ug/l	< 1.0	< 10.0
Indeno(123cd)pyrene	DETS 071*	1	ug/l	< 1.0	< 10.0
Dibenzo(ah)anthracene	DETS 071*	1	ug/l	< 1.0	< 10.0
Benzo(ghi)perylene	DETS 071*	1	ug/l	< 1.0	< 10.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 10.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 10.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 10.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 10.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 10.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 10.0

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 14-00725-1
Client Ref
Contract Title Barry South Quay and South Quay Parkside

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
617423	SQMTP219 0.40	SOIL	NAD	none	John Leeson
617426	SQPMTP309 0.25	SOIL	NAD	none	John Leeson
617428	SQPMTP310 1.30	SOIL	NAD	none	John Leeson
617429	SQPMTP317 0.50	SOIL	NAD	none	John Leeson
617430	SQPMTP318 0.50	SOIL	NAD	none	John Leeson
617435	SQPMTT303 0.30	SOIL	NAD	none	John Leeson
617436	SQPMTP311 0.20	SOIL	NAD	none	John Leeson
617437	SQPMTP312 0.20	SOIL	NAD	none	John Leeson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 14-00725-1
Client Ref
Contract Barry South Quay and South Quay Parkside

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
617422	SQMTP218 0.30 SOIL	05/03/14	GJ 250ml, GJ 60ml		
617423	SQMTP219 0.40 SOIL	05/03/14	PT 1L		
617424	SQMTT223A 0.90 SOIL	05/03/14	GJ 250ml, GJ 60ml		
617425	SQMTT223C 0.80 SOIL	05/03/14	GJ 250ml, GJ 60ml		
617426	SQPMTT309 0.25 SOIL	06/03/14	PT 1L		
617427	SQPMTP316 1.70 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617428	SQPMTP310 1.30 SOIL	06/03/14	PT 1L		
617429	SQPMTP317 0.50 SOIL	06/03/14	PT 1L		
617430	SQPMTP318 0.50 SOIL	06/03/14	PT 1L		
617431	SQPMTT302B 0.50 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617432	SQPMTT302 WATER	06/03/14	GJ 1L, GJ 250ml, GJ 60ml		
617433	SQMTT303A 0.40 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617434	SQMTT303B 0.40 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617435	SQMTT303 0.30 SOIL	06/03/14	PT 1L		
617436	SQPMTP311 0.20 SOIL	06/03/14	PT 1L		
617437	SQPMTP312 0.20 SOIL	06/03/14	PT 1L		
617438	SQPMTP312 0.60 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617439	SQPMTP313 0.30 SOIL	06/03/14	GJ 250ml, GJ 60ml		
617440	SQPMTP314 WATER	06/03/14	GJ 1L, GJ 250ml, GJ 60ml		

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-00874-1

18-Mar-14

Client Merebrook Consulting Limited
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference	14-00874-1
Client Reference	(not supplied)
Contract Title	Barry - South Quay
Description	3 Soil samples.
Date Received	07-Mar-14
Date Started	11-Mar-14
Date Completed	18-Mar-14
Test Procedures	Identified by prefix DETSn (details on request).
Notes	This report supercedes 14-00874. Amendments to sample ID's

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 14-00874-1
Client Ref
Contract Title Barry - South Quay

Sample ID	Other ID	Depth	Lab No	Completed	Matrix Description
SQMTT202A	A	0.70-0.80	618217	18/03/2014	Dark grey gravelly SAND with hydrocarbon odour
SQMTT202B	B	0.70-0.80	618218	18/03/2014	Dark grey sandy GRAVEL with odd rootltes with hydrocarbon odour (sample matrix outside MCERTS scope of accreditation)
SQMTT202C	C	1	618219	18/03/2014	Dark grey sandy GRAVEL (sample matrix outside MCERTS scope of accreditation)

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00874-1
Client Ref
Contract Title Barry - South Quay

			Lab No	618217	618218	618219
				SQMTT2	SQMTT2	SQMTT2
			Sample ID	02A	02B	02C
			Depth	0.70-0.80	0.70-0.80	1.00
			Other ID	A	B	C
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	4.8	0.64	0.41
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	3.9	3.6	6.7
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	100	120	94
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	590	330	450
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	1900	1200	840
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	1800	1100	300
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	570	400	640
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	5000	3200	2300
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.05	0.28	0.14
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.23	0.05	0.12
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	21	12	23
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	1100	300	300
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1400	870	240
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1300	870	150
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	430	340	120
Aromatic C5-C35	DETSC 3072*	10	mg/kg	4300	2400	830
TPH Ali/Aro	DETSC 3072*	10	mg/kg	9200	5600	3200

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Summary of Chemical Analysis
Soil Samples

Our Ref 14-00874-1
Client Ref
Contract Title Barry - South Quay

			Lab No	618217	618218	618219
				SQMTT2	SQMTT2	SQMTT2
			Sample ID	02A	02B	02C
			Depth	0.70-0.80	0.70-0.80	1.00
			Other ID	A	B	C
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	04/03/14	04/03/14	04/03/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.35
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	0.18	0.12	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	35	7.0	2.3
m+p-Xylene	DETSC 3431*	0.01	mg/kg	0.38	< 0.01	0.23
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.27	0.46
Styrene	DETSC 3431*	0.01	mg/kg	6.4	0.23	0.37
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	0.40	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	0.84	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00874-1
Client Ref
Contract Title Barry - South Quay

				Lab No	618217	618218	618219
					SQMTT2	SQMTT2	SQMTT2
				Sample ID	02A	02B	02C
				Depth	0.70-0.80	0.70-0.80	1.00
				Other ID	A	B	C
				Sample Type	SOIL	SOIL	SOIL
				Sampling Date	04/03/14	04/03/14	04/03/14
				Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg		4.3	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg		0.99	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg		< 0.01	< 0.01	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*				Y	Y	Y
SVOCs							
Phenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Aniline	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg		24	11	19
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg		< 0.1	1.4	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	1.2
Dibenzofuran	DETS 071*	0.1	mg/kg		2.2	1.0	1.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg		< 0.1	< 0.1	< 0.1

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-00874-1
Client Ref
Contract Title Barry - South Quay

	Lab No	618217	618218	618219
	Sample ID	SQMTT2 02A	SQMTT2 02B	SQMTT2 02C
	Depth	0.70-0.80	0.70-0.80	1.00
	Other ID	A	B	C
	Sample Type	SOIL	SOIL	SOIL
	Sampling Date	04/03/14	04/03/14	04/03/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	4.4	1.9	2.2
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	14	6.0	4.6
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	7.9	4.7	4.4
Anthracene	DETS 071*	0.1	mg/kg	1.2	0.8	0.3
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	0.9	3.5	1.1
Pyrene	DETS 071*	0.1	mg/kg	1.2	2.9	1.1
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	0.2	1.7	0.6
Chrysene	DETS 071*	0.1	mg/kg	< 0.1	2.3	1.1
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	0.1	2.4	1.0
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1	0.8	0.3
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	< 0.1	1.6	0.5
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	< 0.1	1.0	0.3
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1	0.4	0.2
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	< 0.1	1.1	0.4
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	14	< 0.1	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
GCMS BroadScan	*			Y	Y	Y

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 14-00874-1
Client Ref
Contract Barry - South Quay

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
618217	SQMTT202A 0.70-0.80 SOIL	04/03/14	GJ 250ml (250ml), GJ 60ml (60ml)		
618218	SQMTT202B 0.70-0.80 SOIL	04/03/14	GJ 250ml (250ml), GJ 60ml (60ml)		
618219	SQMTT202C 1.00 SOIL	04/03/14	GJ 250ml (250ml), GJ 60ml (60ml)		
618220	SQMTT212 0.50 SOIL	05/03/14	GJ 250ml (250ml), GJ 60ml (60ml)		

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-01355-1

20-Mar-14

Client Merebrook Consulting Limited
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference	14-01355-1
Client Reference	(not supplied)
Contract Title	Barry South Quay Parkside
Description	One Soil sample.
Date Received	14-Mar-14
Date Started	17-Mar-14
Date Completed	20-Mar-14
Test Procedures	Identified by prefix DETSn (details on request).
Notes	This report supercedes 14-01355. Amendments to sample ID's

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 14-01355-1
Client Ref
Contract Title Barry South Quay Parkside

Sample ID	Depth	Lab No	Completed	Matrix Description
SQPMTT302A	0.5	620932		Dark grey very gravelly sandy CLAY (made ground includes brick)

Summary of Chemical Analysis
Soil Samples

Our Ref 14-01355-1
Client Ref
Contract Title Barry South Quay Parkside

			Lab No	620932
				SQPMTT
			Sample ID	302A
			Depth	0.50
			Other ID	
			Sample Type	SOIL
			Sampling Date	05/03/14
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	20
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	100
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	690
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	1300
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	1000
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	1000
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	4200
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.23
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	0.89
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	28
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	230
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	880
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	1200
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	2100
Aromatic C5-C35	DETSC 3072*	10	mg/kg	4500
TPH Ali/Aro	DETSC 3072*	10	mg/kg	8600

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-01355-1
Client Ref
Contract Title Barry South Quay Parkside

Lab No	620932
	SQPMTT
Sample ID	302A
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	05/03/14
Sampling Time	n/s

Test	Method	LOD	Units	
VOCs				
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	0.11
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	0.25
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 14-01355-1
Client Ref
Contract Title Barry South Quay Parkside

			Lab No	620932
				SQPMTT
			Sample ID	302A
			Depth	0.50
			Other ID	
			Sample Type	SOIL
			Sampling Date	05/03/14
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01
Naphthalene	DETSC 3431*	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01
GCMS BroadScan (headspace)	DETSC 3441*			Y
SVOCs				
Phenol	DETS 071*	0.1	mg/kg	< 0.1
Aniline	DETS 071*	0.1	mg/kg	< 0.1
2-Chlorophenol	DETS 071*	0.1	mg/kg	< 0.1
Benzyl Alcohol	DETS 071*	0.1	mg/kg	< 0.1
2-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1
Bis(2-chloroisopropyl)ether	DETS 071*	0.1	mg/kg	< 0.1
3&4-Methylphenol	DETS 071*	0.1	mg/kg	< 0.1
2,4-Dimethylphenol	DETS 071*	0.1	mg/kg	< 0.1
Bis-(dichloroethoxy)methane	DETS 071*	0.1	mg/kg	< 0.1
2,4-Dichlorophenol	DETS 071*	0.1	mg/kg	< 0.1
1,2,4-Trichlorobenzene	DETS 071*	0.1	mg/kg	< 0.1
4-Chloro-3-methylphenol	DETS 071*	0.1	mg/kg	< 0.1
2-Methylnaphthalene	DETS 071*	0.1	mg/kg	8.9
Hexachlorocyclopentadiene	DETS 071*	0.1	mg/kg	< 0.1
2,4,6-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1
2,4,5-Trichlorophenol	DETS 071*	0.1	mg/kg	< 0.1
2-Chloronaphthalene	DETS 071*	0.1	mg/kg	< 0.1
2-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1
2,4-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1
Acenaphthylene	DETS 071*	0.1	mg/kg	< 0.1
3-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1
Acenaphthene	DETS 071*	0.1	mg/kg	< 0.1
4-Nitrophenol	DETS 071*	0.1	mg/kg	< 0.1
Dibenzofuran	DETS 071*	0.1	mg/kg	< 0.1
2,6-Dinitrotoluene	DETS 071*	0.1	mg/kg	< 0.1
2,3,4,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1
Diethylphthalate	DETS 071*	0.1	mg/kg	< 0.1

Summary of Chemical Analysis
Soil Samples

Our Ref 14-01355-1
Client Ref
Contract Title Barry South Quay Parkside

Lab No	620932
	SQPMTT
Sample ID	302A
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	05/03/14
Sampling Time	n/s

Test	Method	LOD	Units	
4-Chlorophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1
Fluorene	DETS 071*	0.1	mg/kg	1.7
4-Nitroaniline	DETS 071*	0.1	mg/kg	< 0.1
2-Methyl-4,6-Dinitrophenol	DETS 071*	0.1	mg/kg	< 0.1
Diphenylamine	DETS 071*	0.1	mg/kg	5.0
4-Bromophenylphenylether	DETS 071*	0.1	mg/kg	< 0.1
Hexachlorobenzene	DETS 071*	0.1	mg/kg	< 0.1
Pentachlorophenol	DETS 071*	0.1	mg/kg	< 0.1
Phenanthrene	DETS 071*	0.1	mg/kg	2.2
Anthracene	DETS 071*	0.1	mg/kg	< 0.1
Di-n-butylphthalate	DETS 071*	0.1	mg/kg	< 0.1
Fluoranthene	DETS 071*	0.1	mg/kg	1.0
Pyrene	DETS 071*	0.1	mg/kg	1.0
Butylbenzylphthalate	DETS 071*	0.1	mg/kg	< 0.1
Benzo(a)anthracene	DETS 071*	0.1	mg/kg	< 0.1
Chrysene	DETS 071*	0.1	mg/kg	< 0.1
Bis(2-ethylhexyl)phthalate	DETS 071*	0.1	mg/kg	< 0.1
Di-n-octylphthalate	DETS 071*	0.1	mg/kg	< 0.1
Benzo(b)fluoranthene	DETS 071*	0.1	mg/kg	0.4
Benzo(k)fluoranthene	DETS 071*	0.1	mg/kg	< 0.1
Benzo(a)pyrene	DETS 071*	0.1	mg/kg	0.3
Indeno(123cd)pyrene	DETS 071*	0.1	mg/kg	0.1
Dibenzo(ah)anthracene	DETS 071*	0.1	mg/kg	< 0.1
Benzo(ghi)perylene	DETS 071*	0.1	mg/kg	0.2
1,4-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1
Dimethylphthalate	DETS 071*	0.1	mg/kg	< 0.1
1,3-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1
1,2-Dinitrobenzene	DETS 071*	0.1	mg/kg	< 0.1
2,3,5,6-Tetrachlorophenol	DETS 071*	0.1	mg/kg	< 0.1
Azobenzene	DETS 071*	0.1	mg/kg	< 0.1
Carbazole	DETS 071*	0.1	mg/kg	< 0.1
GCMS BroadScan	*			Y
VOC TICs				
Dodecanal (TIC)	DETSC 3431*		mg/kg	3.456

Key: * -not accredited. # -MCERTS (accreditation only implied if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 14-01355-1
Client Ref
Contract Barry South Quay Parkside

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
620932	SQPMTT302A 0.50 SOIL	05/03/14	GJ 250ml (250ml), GJ 60ml (60ml)		

Key: G-Glass J-Jar

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-07408

11-Jun-14

Client Idom Merebrook Ltd
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference	14-07408
Client Reference	17633G
Contract Title	Barry
Description	20 Water samples.
Date Received	04-Jun-14
Date Started	04-Jun-14
Date Completed	11-Jun-14
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.2	1.9	0.94
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.08	< 0.03	0.08
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.56	5.3	0.29
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.7	2.0	0.9
Iron, Dissolved	DETSC 2306	5.5	ug/l	17	900	17
Total Iron	DETSC 2306*	5.5	ug/l	240	2500	76
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	900	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.14	0.46	0.31
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	0.03	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.4	2.8	2.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.61	0.56	0.61
Zinc, Dissolved	DETSC 2306	1.25	ug/l	40.9	33.4	39.7
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	32900	1190	18800
pH	DETSC 2008			7.7	7.9	8.2
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	43	17	17
Hardness	DETSC 2303*	0.1	mg/l	3800	328	2470
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.59	0.20	0.58
Chloride	DETSC 2055	0.1	mg/l	13000	66	6500
Nitrate as NO3	DETSC 2055	0.1	mg/l	2.0	0.36	0.64
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	1800	27	970
Sulphide	DETSC 2208	10	ug/l	10	65	17
Total Organic Carbon	DETSC 2033	2	mg/l	48	22	23

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	1.1
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	14
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	11
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	26
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	0.5	1.1	7.9
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	14	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	42	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	10	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	67	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10	67	34
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	1.1	7.9
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	0.02	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.01
Fluorene	DETS 074*	0.01	ug/l	0.01	0.03	0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.04	0.04	0.04
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20	< 0.20
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	4	4	34
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653962	653963	653964
			Sample ID	SW01	SQBH02	SQBH03
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	03/06/14	03/06/14	02/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l			
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l			
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l			
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l			
2-Formylhistamine (TIC)	DETSC 3432*		ug/l			
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l			
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l			0.941
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653962	653963	653964
	Sample ID	SW01	SQBH02	SQBH03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l		0.56	
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l			
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l			
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l			
Cyclobutanol (TIC)	DETSC 3432*		ug/l	0.677		
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l			0.533
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l		0.564	
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l			
Fenchol, exo- (TIC)	DETSC 3432*		ug/l			
Hexane (TIC)	DETSC 3432*		ug/l			
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l			
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l	0.395		
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			0.258
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l			
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l			
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l			
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l			
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l			
Propanedioic acid (TIC)	DETSC 3432*		ug/l			
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l	0.63	2.19	
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l		0.566	0.371
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l			0.501
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l			
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			0.248

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.85	0.77	44
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.30	0.12	1.1
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.42	0.37	9.8
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.0	1.0	36
Iron, Dissolved	DETSC 2306	5.5	ug/l	52	25	1100
Total Iron	DETSC 2306*	5.5	ug/l	94	130	1700
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	280
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	830
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.37	0.21	40
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.4	2.7	24
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.47	0.42	2.4
Zinc, Dissolved	DETSC 2306	1.25	ug/l	70.3	40.5	260
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	20700	20700	2110
pH	DETSC 2008			8.1	8.1	10.7
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	33	20	190
Hardness	DETSC 2303*	0.1	mg/l	3820	2000	38.0
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.74	0.52	1.3
Chloride	DETSC 2055	0.1	mg/l	7500	6700	100
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.76	4.4	120
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	1100	1100	66
Sulphide	DETSC 2208	10	ug/l	14	< 10	1400
Total Organic Carbon	DETSC 2033	2	mg/l	41	29	210

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	3.8	19
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	31	4.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	110
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	180
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	810
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	14	800
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	1.9	260
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	52	2200
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	1.6	6.7
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	19
Aromatic C8-C10	DETSC 3322	0.1	ug/l	15	7.9	12000
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	180
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	430
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	460
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	180
Aromatic C5-C35	DETSC 3072*	10	ug/l	15	< 10	13000
TPH Ali/Aro	DETSC 3072*	10	ug/l	15	61	16000
Benzene	DETSC 3322	1	ug/l	< 1.0	1.6	6.7
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	19
Ethylbenzene	DETSC 3322	1	ug/l	15	7.9	12000
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	60
MTBE	DETSC 3322	1	ug/l	< 1.0	3.8	19

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.08
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.06
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.20
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.07
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.11
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.06
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.16
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	1.1
Fluorene	DETS 074*	0.01	ug/l	0.01	< 0.01	0.19
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	0.16
Phenanthrene	DETS 074*	0.01	ug/l	0.07	0.02	0.74
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	1.2
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20	4.2
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	63

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	28
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	7	7
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	29	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	22
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	64	39	10000
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	2	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	6
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653965	653966	653967
			Sample ID	SQBH04	SQBH05	SQBH06B
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	02/06/14	02/06/14	02/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	4
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	7
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	26
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	2
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	6
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	11
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	17
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	9.6
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 2.5
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			1.451
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l		0.656	
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l			
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l	0.371		
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l			
2-Formylhistamine (TIC)	DETSC 3432*		ug/l			
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			0.692
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l		0.901	
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l			2.235
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			0.522
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			1.873
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			1.473
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			1.215
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			0.4
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l			
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			1.73

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653965	653966	653967
	Sample ID	SQBH04	SQBH05	SQBH06B
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l			
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l			
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l			
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l			
Cyclobutanol (TIC)	DETSC 3432*		ug/l			
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l	0.661	0.506	
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l			
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l			
Fenchol, exo- (TIC)	DETSC 3432*		ug/l			
Hexane (TIC)	DETSC 3432*		ug/l			
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			0.663
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l			
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			0.631
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l			
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l		0.281	
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l			
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l			
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l	0.183		
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l		0.23	
Propanedioic acid (TIC)	DETSC 3432*		ug/l		0.816	
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l	0.699		
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l	0.835	0.23	
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l	0.582		
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l			
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653968	653969	653970
	Sample ID	SQBH07	SQBH08	SQBH09
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.1	0.53	1.2
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	0.32
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.71	0.28	0.42
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.8	0.4	4.2
Iron, Dissolved	DETSC 2306	5.5	ug/l	110	160	31
Total Iron	DETSC 2306*	5.5	ug/l	570	680	55
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	110	160	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.36	0.18	0.55
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.2	0.7	2.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.28	< 0.25	0.52
Zinc, Dissolved	DETSC 2306	1.25	ug/l	109	25.7	81.3
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	4830	6000	28500
pH	DETSC 2008			8.3	7.9	7.6
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	18	40	50
Hardness	DETSC 2303*	0.1	mg/l	691	870	3850
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.49	0.24	0.70
Chloride	DETSC 2055	0.1	mg/l	1300	1700	11000
Nitrate as NO3	DETSC 2055	0.1	mg/l	1.3	0.66	3.9
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	190	170	1500
Sulphide	DETSC 2208	10	ug/l	76	2200	47
Total Organic Carbon	DETSC 2033	2	mg/l	19	49	61

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653968	653969	653970
	Sample ID	SQBH07	SQBH08	SQBH09
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	280	51	22
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	34	33	36
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	5.1	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	8.7	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	310	97	58
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	2.5
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	9.7	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	44	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	14	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	3.8	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	71	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	310	170	60
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	2.5
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	280	51	22

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653968	653969	653970
	Sample ID	SQBH07	SQBH08	SQBH09
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	0.12	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	0.02	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	0.08	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.05	0.04	0.03
Pyrene	DETS 074*	0.01	ug/l	< 0.01	0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	0.29	< 0.20
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653968	653969	653970
			Sample ID	SQBH07	SQBH08	SQBH09
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	02/06/14	02/06/14	02/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	5
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	45
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	28	3	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653968	653969	653970
			Sample ID	SQBH07	SQBH08	SQBH09
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	02/06/14	02/06/14	02/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	2	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653968	653969	653970
	Sample ID	SQBH07	SQBH08	SQBH09
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l			
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l			
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l			
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l		0.428	
2-Formylhistamine (TIC)	DETSC 3432*		ug/l			
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			1.354
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l	1.002		
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l			
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l		1.049	
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653968	653969	653970
	Sample ID	SQBH07	SQBH08	SQBH09
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	02/06/14	02/06/14	02/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l			
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l			
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l			
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l			
Cyclobutanol (TIC)	DETSC 3432*		ug/l			
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l		0.519	0.384
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l			
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l		0.442	
Fenchol, exo- (TIC)	DETSC 3432*		ug/l			
Hexane (TIC)	DETSC 3432*		ug/l			
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l			
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l			
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			0.248
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l			
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l			
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l			
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l			
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l	0.256		
Propanedioic acid (TIC)	DETSC 3432*		ug/l			
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l			
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l			
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l			
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l			
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.7	1.5	1.9
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.11	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.31	0.30	0.38
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.3	4.3	3.0
Iron, Dissolved	DETSC 2306	5.5	ug/l	20	33	20
Total Iron	DETSC 2306*	5.5	ug/l	20	230	21
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.37	0.37	0.36
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.3	8.0	1.4
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.38	1.1	0.41
Zinc, Dissolved	DETSC 2306	1.25	ug/l	31.2	66.6	43.9
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	33400	2850	33200
pH	DETSC 2008			7.9	8.5	8.1
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	58	180	70
Hardness	DETSC 2303*	0.1	mg/l	4340	353	4110
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.67	< 0.015	0.70
Chloride	DETSC 2055	0.1	mg/l	13000	630	12000
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.64	2.1	0.62
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	1700	130	1800
Sulphide	DETSC 2208	10	ug/l	14	220	11
Total Organic Carbon	DETSC 2033	2	mg/l	66	210	81

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	1.8	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	19	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	20	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	0.9	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	20	< 10	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	1.8	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.02	< 0.01	0.02
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20	< 0.20
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	5	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	1	14	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	5	< 1	4
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653971	653972	653973
			Sample ID	SW02	SQBH11	SW03
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	03/06/14	02/06/14	03/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l			
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l			
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l			
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l			
2-Formylhistamine (TIC)	DETSC 3432*		ug/l			
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l	0.754		
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l			
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l			
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653971	653972	653973
	Sample ID	SW02	SQBH11	SW03
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	02/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l			
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l			
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l			
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l			
Cyclobutanol (TIC)	DETSC 3432*		ug/l			
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l			0.429
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l			
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l	0.285		
Fenchol, exo- (TIC)	DETSC 3432*		ug/l			
Hexane (TIC)	DETSC 3432*		ug/l		0.322	
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l			
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l			
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l			
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l	0.297		0.363
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l			
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l			
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l			
Propanedioic acid (TIC)	DETSC 3432*		ug/l			
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l			0.719
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l			
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l	0.91		0.737
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l		0.327	
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.53	2.1	1.8
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	0.05
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.36	< 0.25	0.40
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.5	< 0.4	1.6
Iron, Dissolved	DETSC 2306	5.5	ug/l	48	51	71
Total Iron	DETSC 2306*	5.5	ug/l	68	120	190
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.27	0.81	0.36
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.8	2.6	5.1
Selenium, Dissolved	DETSC 2306	0.25	ug/l	3.8	1.4	0.78
Zinc, Dissolved	DETSC 2306	1.25	ug/l	19.9	70.8	59.2
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	1420	11500	1700
pH	DETSC 2008			8.3	7.9	8.0
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	13	24	85
Hardness	DETSC 2303*	0.1	mg/l	259	949	259
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	< 0.015	3.5	0.23
Chloride	DETSC 2055	0.1	mg/l	74	4300	280
Nitrate as NO3	DETSC 2055	0.1	mg/l	17	0.40	0.59
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	55	200	16
Sulphide	DETSC 2208	10	ug/l	46	2400	320
Total Organic Carbon	DETSC 2033	2	mg/l	15	26	95

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	41
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	2.7	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	11	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	4.7	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	19	41
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	1.2	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	31
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	7.8
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	38
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10	19	79
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	1.2	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	41

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	0.79	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	0.02	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	0.11	0.02
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.05	0.13	0.03
Pyrene	DETS 074*	0.01	ug/l	< 0.01	0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	1.1	< 0.20
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	2	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	5	8	1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653974	653975	653976
			Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	03/06/14	03/06/14	03/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	3	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			0.171
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l			
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l			
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l	0.376		
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l			
2-Formylhistamine (TIC)	DETSC 3432*		ug/l		0.352	
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l		0.728	
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			0.097
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l	0.52		
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653974	653975	653976
	Sample ID	SQMBH02D	SQMBH03S	SQMBH04S
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l			
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l		0.659	
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l	0.389		
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l			
Cyclobutanol (TIC)	DETSC 3432*		ug/l			
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l	0.533	0.385	
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l			
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l			
Fenchol, exo- (TIC)	DETSC 3432*		ug/l		0.168	
Hexane (TIC)	DETSC 3432*		ug/l		0.422	
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l			
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l			
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l			
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l			0.416
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l		0.281	
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l			
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l			
Propanedioic acid (TIC)	DETSC 3432*		ug/l			
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l			
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l			
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l			
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l			
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	5.4	1.9	0.60
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.10	0.05	0.26
Chromium, Dissolved	DETSC 2306	0.25	ug/l	4.3	0.41	0.68
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	6.7	1.9	0.6
Iron, Dissolved	DETSC 2306	5.5	ug/l	5300	30	51
Total Iron	DETSC 2306*	5.5	ug/l	5300	30	120
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	5300	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.1	0.14	0.30
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	0.02	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	28	0.9	1.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.0	0.79	0.60
Zinc, Dissolved	DETSC 2306	1.25	ug/l	104	23.9	63.6
Inorganics						
Conductivity	DETSC 2009	1	uS/cm	2240	33100	15900
pH	DETSC 2008			7.5	7.9	7.4
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	240	62	12
Hardness	DETSC 2303*	0.1	mg/l	727	3410	3180
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.053	0.54	0.59
Chloride	DETSC 2055	0.1	mg/l	510	12000	5200
Nitrate as NO3	DETSC 2055	0.1	mg/l	29	0.71	5.6
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	43	1700	800
Sulphide	DETSC 2208	10	ug/l	260	15	55
Total Organic Carbon	DETSC 2033	2	mg/l	310	73	15

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	190	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	9.2	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	3.5	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	8.0	3.5	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	13	16	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	2.4	1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	230	20	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	160	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	9.4	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	34	0.8	1.4
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	210	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	440	21	< 10
Benzene	DETSC 3322	1	ug/l	160	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	9.4	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	31	< 1.0	1.4
Xylene	DETSC 3322	1	ug/l	3.2	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	190	< 1.0	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
PAHs						
Acenaphthene	DETS 074*	0.01	ug/l	0.01	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	0.02	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	0.04	< 0.01	< 0.01
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20	< 0.20
Phenols						
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
VOCs						
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	15	< 1	1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	3	< 1	4
Benzene	DETSC 3432	1	ug/l	240	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	3	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	16	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	92	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	110	4	5
m+p-Xylene	DETSC 3432	2	ug/l	8	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	14	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

			Lab No	653977	653978	653979
			Sample ID	SQMBH05S	SW04	SQMBH03D
			Depth			
			Other ID			
			Sample Type	WATER	WATER	WATER
			Sampling Date	03/06/14	03/06/14	03/06/14
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	7	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*			Y	Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0	< 1.0
VOC TICs						
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l			
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l			
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l			
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l	0.739		
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l			
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l			
2-Formylhistamine (TIC)	DETSC 3432*		ug/l			0.421
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l			
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l			
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l	0.565		
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l			
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l			
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l	0.368		
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l			
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l	0.236		
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l			
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l			
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l			
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653977	653978	653979
	Sample ID	SQMBH05S	SW04	SQMBH03D
	Depth			
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	03/06/14	03/06/14	03/06/14
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l			
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l			
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l			
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l	0.067		
Cyclobutanol (TIC)	DETSC 3432*		ug/l			
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l	0.757		
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l			
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l			
Fenchol, exo- (TIC)	DETSC 3432*		ug/l			
Hexane (TIC)	DETSC 3432*		ug/l			
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l	0.15		
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l			
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l		0.756	
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l			
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l			
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l			
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l			
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l			
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l			
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l			
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l			
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l			
Propanedioic acid (TIC)	DETSC 3432*		ug/l			
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l			
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l			
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l			
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l			
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l			

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.48	0.71
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.04	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.47	0.81
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.8	0.5
Iron, Dissolved	DETSC 2306	5.5	ug/l	39	52
Total Iron	DETSC 2306*	5.5	ug/l	70	200
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.31	0.20
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.3	0.6
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.1	1.6
Zinc, Dissolved	DETSC 2306	1.25	ug/l	32.4	147
Inorganics					
Conductivity	DETSC 2009	1	uS/cm	3790	2250
pH	DETSC 2008			7.8	7.9
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40
Dissolved Organic Carbon	*	2	mg/l	180	11
Hardness	DETSC 2303*	0.1	mg/l	879	558
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.037	0.14
Chloride	DETSC 2055	0.1	mg/l	1000	410
Nitrate as NO3	DETSC 2055	0.1	mg/l	14	19
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.040	< 0.040
Sulphate as SO4	DETSC 2055	0.1	mg/l	360	300
Sulphide	DETSC 2208	10	ug/l	1700	36
Total Organic Carbon	DETSC 2033	2	mg/l	190	13

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	2.6	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	40	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	1.6	5.2
Aliphatic C16-C21	DETSC 3072*	1	ug/l	13	16
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	1.6
Aliphatic C5-C35	DETSC 3072*	10	ug/l	58	24
Aromatic C5-C7	DETSC 3322	0.1	ug/l	7.3	10
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	1.1	0.8
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	11
TPH Ali/Aro	DETSC 3072*	10	ug/l	66	35
Benzene	DETSC 3322	1	ug/l	7.3	10
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	1.1	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	2.6	< 1.0

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
PAHs					
Acenaphthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Acenaphthylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(a)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(a)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(b)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(k)fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Chrysene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Fluoranthene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Fluorene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Naphthalene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Phenanthrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
Pyrene	DETS 074*	0.01	ug/l	< 0.01	< 0.01
PAH	DETS 074*	0.2	ug/l	< 0.20	< 0.20
Phenols					
Phenol	*	0.5	ug/l	< 0.50	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	18	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	120	170
Benzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	3	4
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

				Lab No	653980	653981
				Sample ID	SQMBH04D	SQMBH05D
				Depth		
				Other ID		
				Sample Type	WATER	WATER
				Sampling Date	03/06/14	03/06/14
				Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**			
1,2,3-trichloropropane	DETSC 3432	1	ug/l		< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l		< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l		< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l		< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l		< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l		< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l		< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l		< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l		< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l		< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l		< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l		< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l		< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l		< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l		< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l		< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l		< 1	< 1
GCMS BroadScan (headspace)	DETSC 3432*				Y	Y
SVOCs						
Phenol	DETS 071*	1	ug/l		< 1.0	< 1.0
Aniline	DETS 071*	1	ug/l		< 1.0	< 1.0
2-Chlorophenol	DETS 071*	1	ug/l		< 1.0	< 1.0
Benzyl Alcohol	DETS 071*	1	ug/l		< 1.0	< 1.0
2-Methylphenol	DETS 071*	1	ug/l		< 1.0	< 1.0
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l		< 1.0	< 1.0
3&4-Methylphenol	DETS 071*	1	ug/l		< 1.0	< 1.0
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l		< 1.0	< 1.0
2,4-Dimethylphenol	DETS 071*	1	ug/l		< 1.0	< 1.0
2,4-Dichlorophenol	DETS 071*	1	ug/l		< 1.0	< 1.0
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l		< 1.0	< 1.0
4-Chloro-3-methylphenol	DETS 071*	1	ug/l		< 1.0	< 1.0
2-Methylnaphthalene	DETS 071*	1	ug/l		< 1.0	< 1.0
1,2-Dinitrotoluene	DETS 071*	1	ug/l		< 1.0	< 1.0
Hexachlorocyclopentadiene	DETS 071*	1	ug/l		< 1.0	< 1.0
2,4,6-Trichlorophenol	DETS 071*	1	ug/l		< 1.0	< 1.0
2,4,5-Trichlorophenol	DETS 071*	1	ug/l		< 1.0	< 1.0
2-Chloronaphthalene	DETS 071*	1	ug/l		< 1.0	< 1.0
2-Nitroaniline	DETS 071*	1	ug/l		< 1.0	< 1.0
2,4-Dinitrotoluene	DETS 071*	1	ug/l		< 1.0	< 1.0
3-Nitroaniline	DETS 071*	1	ug/l		< 1.0	< 1.0
4-Nitrophenol	DETS 071*	1	ug/l		< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied.

Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Dibenzofuran	DETS 071*	1	ug/l	< 1.0	< 1.0
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 1.0
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 1.0
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 1.0
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 1.0
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 1.0
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 1.0
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 1.0
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 1.0
Carbazole	DETS 071*	1	ug/l	< 1.0	< 1.0
VOC TICs					
1H-Indene, 1-ethylidene- (TIC)	DETSC 3432*		ug/l		
1H-Indene, 2,3-dihydro-1,1-d (TIC)	DETSC 3432*		ug/l		
1-Propanamine, N,2-dimethyl- (TIC)	DETSC 3432*		ug/l	0.364	
1-Propanesulfonyl chloride, (TIC)	DETSC 3432*		ug/l		
2,4-Pentanediol (TIC)	DETSC 3432*		ug/l		
2,7-Methanonaphth[2,3-b]oxir (TIC)	DETSC 3432*		ug/l		
2-Formylhistamine (TIC)	DETSC 3432*		ug/l		
3,4,5-Trimethyldihydrofuran- (TIC)	DETSC 3432*		ug/l		
3-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l		
4-Hydroxymandelic acid, ethy (TIC)	DETSC 3432*		ug/l		
Benzaldehyde, 2,5-bis[(trime (TIC)	DETSC 3432*		ug/l		
Benzene, [3-(methoxymethoxy) (TIC)	DETSC 3432*		ug/l		
Benzene, 1,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l		
Benzene, 1,2,4,5-tetramethyl (TIC)	DETSC 3432*		ug/l		
Benzene, 1-ethyl-3-methyl- (TIC)	DETSC 3432*		ug/l		
Benzene, 1-ethyl-4-methyl- (TIC)	DETSC 3432*		ug/l		
Benzene, 2-ethyl-1,4-dimethy (TIC)	DETSC 3432*		ug/l		
Benzeneethanamine, N-[(penta (TIC)	DETSC 3432*		ug/l		
Benzocycloheptatriene (TIC)	DETSC 3432*		ug/l		

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Summary of Chemical Analysis
Water Samples

Our Ref 14-07408
Client Ref 17633G
Contract Title Barry

	Lab No	653980	653981
	Sample ID	SQMBH04D	SQMBH05D
	Depth		
	Other ID		
	Sample Type	WATER	WATER
	Sampling Date	03/06/14	03/06/14
	Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Benzoic acid, 3-methyl-2-tri (TIC)	DETSC 3432*		ug/l		
Bicyclo[2.2.1]heptan-2-one, (TIC)	DETSC 3432*		ug/l		
Butane, 2-azido-2,3,3-trimet (TIC)	DETSC 3432*		ug/l		
Butane, 2-methyl- (TIC)	DETSC 3432*		ug/l		
Cyclobutanol (TIC)	DETSC 3432*		ug/l		
Cyclotetrasiloxane, octameth (TIC)	DETSC 3432*		ug/l		
Cyclotrisiloxane, hexamethyl (TIC)	DETSC 3432*		ug/l		
Ethylphosphonic acid, bis(te (TIC)	DETSC 3432*		ug/l		
Fenchol, exo- (TIC)	DETSC 3432*		ug/l		
Hexane (TIC)	DETSC 3432*		ug/l		
Hexane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l		
Hydroxylamine, O-decyl- (TIC)	DETSC 3432*		ug/l		
l-Guanidinosuccinimide (TIC)	DETSC 3432*		ug/l		
Naphthalene, 1,2,3,4-tetrahy (TIC)	DETSC 3432*		ug/l		
o-Methylisourea hydrogen sul (TIC)	DETSC 3432*		ug/l		
Oxirane, 2-methyl-3-(1-methy (TIC)	DETSC 3432*		ug/l		
Pentane, 2,2,3-trimethyl- (TIC)	DETSC 3432*		ug/l		
Pentasiloxane, dodecamethyl- (TIC)	DETSC 3432*		ug/l		
Peroxide, dibutyl (TIC)	DETSC 3432*		ug/l		
Phenol, 4-(2-aminopropyl)- (TIC)	DETSC 3432*		ug/l		
Propane, 1-chloro-2-methyl- (TIC)	DETSC 3432*		ug/l		
Propane, 2-methyl-1-nitro- (TIC)	DETSC 3432*		ug/l	0.099	0.131
Propanedioic acid (TIC)	DETSC 3432*		ug/l		
p-Trimethylsilyloxyphenyl-(t (TIC)	DETSC 3432*		ug/l		
Pyrimidine, 4-chloro-2-metho (TIC)	DETSC 3432*		ug/l		
Pyrimidine-2,4(1H,3H)-dione, (TIC)	DETSC 3432*		ug/l		
Silanol, trimethyl- (TIC)	DETSC 3432*		ug/l		
Trisiloxane, 1,1,1,5,5,5-hex (TIC)	DETSC 3432*		ug/l		

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 14-07408
Client Ref 17633G
Contract Barry

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
653962	SW01 WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653963	SQBH02 WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653964	SQBH03 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653965	SQBH04 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653966	SQBH05 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653967	SQBH06B WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653968	SQBH07 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653969	SQBH08 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653970	SQBH09 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653971	SW02 WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653972	SQBH11 WATER	02/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653973	SW03 WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653974	SQMBH02D WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653975	SQMBH03S WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653976	SQMBH04S WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653977	SQMBH05S WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653978	SW04 WATER	03/06/14	GJ 1L, GJ 60ml x5, GB 1L, GV x2		
653979	SQMBH03D WATER	03/06/14	GJ 1L, GB 1L		
653980	SQMBH04D WATER	03/06/14	GJ 1L, GB 1L		
653981	SQMBH05D WATER	03/06/14	GJ 1L, GB 1L		

Key: G-Glass J-Jar B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Derwentside Environmental Testing Services

Certificate of Analysis

Certificate Number 14-11847

07-Aug-14

Client Idom Merebrook Ltd
Suite 2B
East Mill
Belper
DE56 2UA

Our Reference	14-11847
Client Reference	17633G
Contract Title	Barry
Description	19 Water samples.
Date Received	31-Jul-14
Date Started	31-Jul-14
Date Completed	07-Aug-14
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Rob Brown
Business Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678992	678993	678994	678995	678996	678997
	Sample ID	SQBH02	SQBH03	SQBH04	SQBH05	SQBH07	SQBH08
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	10	2.5	0.86	2.1	0.67	1.6
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	0.37	0.14	0.09	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	2.8	1.4	2.4	< 0.25	< 0.25	< 0.25
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.0	13	1.6	0.9	< 0.4	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	45	< 5.5	57	79	54	430
Total Iron	DETSC 2306*	5.5	ug/l	8900	53	410	760	1300	6700
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	220	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100	< 100	< 100	430
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.86	28	0.27	0.48	< 0.09	0.50
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	7.2	1.9	2.7	4.0	0.8	2.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.33	1.2	0.32	0.30	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.25	ug/l	26.4	78.5	26.9	8.23	9.19	19.9
Inorganics									
Conductivity	DETSC 2009	1	uS/cm	1080	18600	19200	26900	8090	6550
pH	DETSC 2008			6.9	7.1	7.1	7.2	7.2	7.2
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Dissolved Organic Carbon	DETSC 2033*	2	mg/l	28	9.4	20	30	7.7	61
Hardness	DETSC 2303	0.1	mg/l	453	2030	900	2490	977	890
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.50	0.61	1.1	1.8	0.74	0.33
Chloride	DETSC 2055	0.1	mg/l	68	6800	6800	9700	2500	1900
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.14	0.61	0.13	0.17	< 0.10	< 0.10
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	5.7	1000	1000	1400	300	140
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Total Organic Carbon	DETSC 2033	2	mg/l	110	21	29	63	17	65
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	44	< 0.1	< 0.1	6.0	300	63
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	2700	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	1400	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	2400	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	1100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	7900	< 10	< 10	< 10	300	63
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	960	< 0.1	< 0.1	< 0.1	3.7	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	1300	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

			Lab No	678992	678993	678994	678995	678996	678997
			Sample ID	SQBH02	SQBH03	SQBH04	SQBH05	SQBH07	SQBH08
			Depth						
			Other ID						
			Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
			Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic C12-C16	DETSC 3072*	1	ug/l	1400	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	1100	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	350	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	5000	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	13000	< 10	< 10	< 10	300	63
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	12	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	43	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	5.0	< 1.0	< 1.0	6.0	300	63
PAHs									
Naphthalene	DETSC 3304	0.06	ug/l	U/S	0.13	0.17	0.14	0.12	0.06
Acenaphthylene	DETSC 3304	0.04	ug/l	U/S	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Acenaphthene	DETSC 3304	0.03	ug/l	U/S	0.11	< 0.03	0.06	< 0.03	< 0.03
Fluorene	DETSC 3304	0.04	ug/l	U/S	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Phenanthrene	DETSC 3304	0.085	ug/l	U/S	< 0.085	< 0.085	< 0.085	< 0.085	< 0.085
Anthracene	DETSC 3304	0.02	ug/l	U/S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fluoranthene	DETSC 3304	0.07	ug/l	U/S	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07
Pyrene	DETSC 3304	0.06	ug/l	U/S	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Benzo(a)anthracene	DETSC 3304	0.04	ug/l	U/S	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Chrysene	DETSC 3304	0.03	ug/l	U/S	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3304	0.02	ug/l	U/S	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(k)fluoranthene	DETSC 3304	0.03	ug/l	U/S	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3304	0.05	ug/l	U/S	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(g,h,i)perylene	DETSC 3304*	0.08	ug/l	U/S	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Dibenzo(a,h)anthracene	DETSC 3304	0.06	ug/l	U/S	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.05	ug/l	U/S	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
PAH	DETSC 3304	0.2	ug/l	U/S	0.25	< 0.20	0.20	< 0.20	< 0.20
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678992	678993	678994	678995	678996	678997
	Sample ID	SQBH02	SQBH03	SQBH04	SQBH05	SQBH07	SQBH08
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Chloromethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Vinyl Chloride	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Bromomethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Chloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1-dichloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
2,2-dichloropropane	DETSC 3432	2	ug/l	< 10	< 2	< 2	< 2	< 2	< 10
Bromochloromethane	DETSC 3432	4	ug/l	< 10	< 4	< 4	< 4	< 4	< 10
Chloroform	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1-dichloropropene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Carbon tetrachloride	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Benzene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,2-dichloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Trichloroethylene	DETSC 3432*	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,2-dichloropropane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Dibromomethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Bromodichloromethane	DETSC 3432	4	ug/l	< 10	< 4	< 4	< 4	< 4	< 10
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Toluene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Tetrachloroethylene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,3-dichloropropane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Dibromochloromethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,2-dibromoethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Chlorobenzene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Ethylbenzene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
m+p-Xylene	DETSC 3432	2	ug/l	< 10	< 2	< 2	< 2	< 2	< 10
o-Xylene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Styrene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Bromoform	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Isopropylbenzene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10
Bromobenzene	DETSC 3432	1	ug/l	< 10	< 1	< 1	< 1	< 1	< 10

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

				Lab No	678992	678993	678994	678995	678996	678997
				Sample ID	SQBH02	SQBH03	SQBH04	SQBH05	SQBH07	SQBH08
				Depth						
				Other ID						
				Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
				Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
1,2,3-trichloropropane	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
n-propylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
2-chlorotoluene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
4-chlorotoluene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
Tert-butylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	2	< 10
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
sec-butylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
p-isopropyltoluene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,3-dichlorobenzene	DETSC 3432	2	ug/l		< 10	< 2	< 2	< 2	< 2	< 10
1,4-dichlorobenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
n-butylbenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,2-dichlorobenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
Hexachlorobutadiene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l		< 10	< 1	< 1	< 1	< 1	< 10
SVOCs										
Phenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Aniline	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2-Chlorophenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Benzyl Alcohol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylphenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
3&4-Methylphenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dimethylphenol	DETS 071*	1	ug/l		6.2	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dichlorophenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
4-Chloro-3-methylphenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylnaphthalene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
1,2-Dinitrotoluene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorocyclopentadiene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,4,6-Trichlorophenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,4,5-Trichlorophenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2-Chloronaphthalene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2-Nitroaniline	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dinitrotoluene	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
3-Nitroaniline	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitrophenol	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Dibenzofuran	DETS 071*	1	ug/l		< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678992	678993	678994	678995	678996	678997
	Sample ID	SQBH02	SQBH03	SQBH04	SQBH05	SQBH07	SQBH08
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Diethylphthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitroaniline	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Diphenylamine	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Pentachlorophenol	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Dimethylphthalate	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Azobenzene	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2
Carbazole	DETS 071*	1	ug/l	< 1.0	< 2.0	< 1.2	< 1.2	< 1.2	< 1.2

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678998	678999	679000	679001	679002	679003
	Sample ID	SQBH09	SQBH11	SQMBH02	SQMBH03 S	SQMBH03 D	SQMBH04 S
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.5	2.7	0.27	2.3	0.71	2.6
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.37	0.55	< 0.03	< 0.03	0.37	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.54	0.60	< 0.25	0.33	< 0.25	0.30
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	2.3	5.3	1.4	< 0.4	0.4	0.8
Iron, Dissolved	DETSC 2306	5.5	ug/l	30	13	15	17	19	24
Total Iron	DETSC 2306*	5.5	ug/l	52	64	53	330	44	840
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	< 100	< 100	< 100	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.44	0.42	< 0.09	< 0.09	0.23	0.25
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Nickel, Dissolved	DETSC 2306	0.5	ug/l	2.6	2.6	1.0	0.9	1.2	4.0
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.26	1.9	2.0	< 0.25	< 0.25	4.8
Zinc, Dissolved	DETSC 2306	1.25	ug/l	8.47	56.7	14.9	19.7	30.5	19.0
Inorganics									
Conductivity	DETSC 2009	1	uS/cm	28800	10400	970	7030	18800	2780
pH	DETSC 2008			7.3	7.2	7.4	7.5	7.1	7.6
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Dissolved Organic Carbon	DETSC 2033*	2	mg/l	26	5.6	2.8	5.8	10	8.0
Hardness	DETSC 2303	0.1	mg/l	2350	1060	321	637	2730	296
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.76	0.035	0.016	1.8	0.69	0.14
Chloride	DETSC 2055	0.1	mg/l	11000	3200	93	2300	6900	570
Nitrate as NO3	DETSC 2055	0.1	mg/l	2.8	6.9	19	< 0.10	4.6	< 0.10
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	1500	530	60	220	990	15
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Total Organic Carbon	DETSC 2033	2	mg/l	28	6.3	4.0	6.9	32	28
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	4.7	< 0.1	< 0.1	< 0.1	< 0.1	53
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	1.8	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	53
Aromatic C5-C7	DETSC 3322	0.1	ug/l	4.8	3.0	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	5.3	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

			Lab No	678998	678999	679000	679001	679002	679003
			Sample ID	SQBH09	SQBH11	SQMBH02	SQMBH03 S	SQMBH03 D	SQMBH04 S
			Depth						
			Other ID						
			Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
			Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10	< 10	< 10	< 10	< 10	53
Benzene	DETSC 3322	1	ug/l	4.8	3.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	4.7	< 1.0	< 1.0	< 1.0	< 1.0	53
PAHs									
Naphthalene	DETSC 3304	0.06	ug/l	0.12	< 0.06	0.13	< 0.06	< 0.06	< 0.06
Acenaphthylene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Acenaphthene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	1.5	< 0.03	< 0.03
Fluorene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	0.15	< 0.04	< 0.04
Phenanthrene	DETSC 3304	0.085	ug/l	< 0.085	< 0.085	< 0.085	0.11	< 0.085	< 0.085
Anthracene	DETSC 3304	0.02	ug/l	< 0.02	< 0.02	< 0.02	0.04	< 0.02	< 0.02
Fluoranthene	DETSC 3304	0.07	ug/l	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07
Pyrene	DETSC 3304	0.06	ug/l	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Benzo(a)anthracene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Chrysene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3304	0.02	ug/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(k)fluoranthene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(g,h,i)perylene	DETSC 3304*	0.08	ug/l	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Dibenzo(a,h)anthracene	DETSC 3304	0.06	ug/l	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
PAH	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	1.8	< 0.20	< 0.20
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678998	678999	679000	679001	679002	679003
	Sample ID	SQBH09	SQBH11	SQMBH02	SQMBH03 S	SQMBH03 D	SQMBH04 S
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	4	6	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678998	678999	679000	679001	679002	679003
	Sample ID	SQBH09	SQBH11	SQMBH02	SQMBH03 S	SQMBH03 D	SQMBH04 S
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
SVOCs									
Phenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Chlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
3-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitrophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Dibenzofuran	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	678998	678999	679000	679001	679002	679003
	Sample ID	SQBH09	SQBH11	SQMBH02	SQMBH03 S	SQMBH03 D	SQMBH04 S
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Diethylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Diphenylamine	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Pentachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Dimethylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Azobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Carbazole	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2

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Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	679004	679005	679006	679007	679008	679009
	Sample ID	SQMBH04 D	SQMBH05 S	SQMBH05 D	SW01	SW02	SW03
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.56	6.4	1.0	2.3	2.3	2.5
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.08	< 0.03	< 0.03	0.03	0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	0.39	0.28	< 0.25	0.29
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	< 0.4	1.2	1.8	1.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	28	2700	43	15	20	14
Total Iron	DETSC 2306*	5.5	ug/l	350	4300	210	57	46	35
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	670	< 100	< 100	< 100	< 100
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100	2100	< 100	< 100	< 100	< 100
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.30	0.12	0.14	0.28	0.12	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	1.0	38	1.3	0.6	0.7	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	3.4	2.0	2.5	1.3	1.0	0.86
Zinc, Dissolved	DETSC 2306	1.25	ug/l	17.4	14.2	19.4	10.3	5.17	8.60
Inorganics									
Conductivity	DETSC 2009	1	uS/cm	5560	2850	3250	33900	34400	34400
pH	DETSC 2008			7.2	6.9	7.2	8.1	8.3	8.4
Cyanide total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40	< 40	< 40
Dissolved Organic Carbon	DETSC 2033*	2	mg/l	2.0	30	2.3	86	31	40
Hardness	DETSC 2303	0.1	mg/l	1140	836	828	2980	2960	2880
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.026	0.029	< 0.015	0.65	0.59	0.60
Chloride	DETSC 2055	0.1	mg/l	1700	630	780	13000	13000	13000
Nitrate as NO3	DETSC 2055	0.1	mg/l	14	< 0.10	18	0.25	0.22	0.36
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
Sulphate as SO4	DETSC 2055	0.1	mg/l	430	25	340	1900	1900	2000
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10	< 10	< 10
Total Organic Carbon	DETSC 2033	2	mg/l	7.2	300	2.8	110	120	160
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1	420	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10	410	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	14	230	18	< 0.1	< 0.1	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1	35	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	280	0.6	< 0.1	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	679004	679005	679006	679007	679008	679009
	Sample ID	SQMBH04 D	SQMBH05 S	SQMBH05 D	SW01	SW02	SW03
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	14	550	18	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	14	960	18	< 10	< 10	< 10
Benzene	DETSC 3322	1	ug/l	14	230	18	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	35	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	200	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	47	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	190	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.06	ug/l	< 0.06	0.09	< 0.06	< 0.06	< 0.06	< 0.06
Acenaphthylene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Acenaphthene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Phenanthrene	DETSC 3304	0.085	ug/l	< 0.085	< 0.085	< 0.085	< 0.085	< 0.085	< 0.085
Anthracene	DETSC 3304	0.02	ug/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fluoranthene	DETSC 3304	0.07	ug/l	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	0.07
Pyrene	DETSC 3304	0.06	ug/l	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Benzo(a)anthracene	DETSC 3304	0.04	ug/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Chrysene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3304	0.02	ug/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo(k)fluoranthene	DETSC 3304	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(g,h,i)perylene	DETSC 3304*	0.08	ug/l	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Dibenzo(a,h)anthracene	DETSC 3304	0.06	ug/l	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
PAH	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phenols									
Phenol	*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	679004	679005	679006	679007	679008	679009
	Sample ID	SQMBH04 D	SQMBH05 S	SQMBH05 D	SW01	SW02	SW03
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	15	65	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	200	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	42	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	240	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	29	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	33	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	5	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	679004	679005	679006	679007	679008	679009
	Sample ID	SQMBH04 D	SQMBH05 S	SQMBH05 D	SW01	SW02	SW03
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	9	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
SVOCs									
Phenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Chlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
3-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitrophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Dibenzofuran	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

	Lab No	679004	679005	679006	679007	679008	679009
	Sample ID	SQMBH04 D	SQMBH05 S	SQMBH05 D	SW01	SW02	SW03
	Depth						
	Other ID						
	Sample Type	WATER	WATER	WATER	WATER	WATER	WATER
	Sampling Date	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14	30/07/14
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Diethylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Nitroaniline	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Diphenylamine	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Pentachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Dimethylphthalate	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Azobenzene	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Carbazole	DETS 071*	1	ug/l	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

Test	Method	LOD	Units	Lab No 679010	Sample ID SW04	Depth	Other ID	Sample Type WATER	Sampling Date 30/07/14	Sampling Time n/s
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.4						
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03						
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25						
Hexavalent Chromium	DETSC 2203	10	ug/l	< 10						
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.3						
Iron, Dissolved	DETSC 2306	5.5	ug/l	9.5						
Total Iron	DETSC 2306*	5.5	ug/l	32						
Ferrous Iron (Filtered)	DETSC 2210*	100	ug/l	< 100						
Ferric Iron (Filtered)	DETSC 2210*	100	ug/l	< 100						
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09						
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01						
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5						
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.68						
Zinc, Dissolved	DETSC 2306	1.25	ug/l	5.06						
Inorganics										
Conductivity	DETSC 2009	1	uS/cm	34300						
pH	DETSC 2008			8.5						
Cyanide total	DETSC 2130	40	ug/l	< 40						
Dissolved Organic Carbon	DETSC 2033*	2	mg/l	86						
Hardness	DETSC 2303	0.1	mg/l	2120						
Ammoniacal Nitrogen as N	DETSC 2207	0.015	mg/l	0.58						
Chloride	DETSC 2055	0.1	mg/l	14000						
Nitrate as NO3	DETSC 2055	0.1	mg/l	0.22						
Nitrite as N	DETSC 2201	0.035	mg/l	< 0.035						
Sulphate as SO4	DETSC 2055	0.1	mg/l	2000						
Sulphide	DETSC 2208	10	ug/l	< 10						
Total Organic Carbon	DETSC 2033	2	mg/l	110						
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	< 0.1						
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	< 0.1						
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1						
Aliphatic C10-C12	DETSC 3072*	1	ug/l	< 1.0						
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0						
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0						
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0						
Aliphatic C5-C35	DETSC 3072*	10	ug/l	< 10						
Aromatic C5-C7	DETSC 3322	0.1	ug/l	< 0.1						
Aromatic C7-C8	DETSC 3322	0.1	ug/l	< 0.1						
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1						
Aromatic C10-C12	DETSC 3072*	1	ug/l	< 1.0						

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

			Lab No	679010
			Sample ID	SW04
			Depth	
			Other ID	
			Sample Type	WATER
			Sampling Date	30/07/14
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Aromatic C12-C16	DETSC 3072*	1	ug/l	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	< 10
TPH Ali/Aro	DETSC 3072*	10	ug/l	< 10
Benzene	DETSC 3322	1	ug/l	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0
PAHs				
Naphthalene	DETSC 3304	0.06	ug/l	< 0.06
Acenaphthylene	DETSC 3304	0.04	ug/l	< 0.04
Acenaphthene	DETSC 3304	0.03	ug/l	< 0.03
Fluorene	DETSC 3304	0.04	ug/l	< 0.04
Phenanthrene	DETSC 3304	0.085	ug/l	< 0.085
Anthracene	DETSC 3304	0.02	ug/l	< 0.02
Fluoranthene	DETSC 3304	0.07	ug/l	0.07
Pyrene	DETSC 3304	0.06	ug/l	< 0.06
Benzo(a)anthracene	DETSC 3304	0.04	ug/l	< 0.04
Chrysene	DETSC 3304	0.03	ug/l	< 0.03
Benzo(b)fluoranthene	DETSC 3304	0.02	ug/l	< 0.02
Benzo(k)fluoranthene	DETSC 3304	0.03	ug/l	< 0.03
Benzo(a)pyrene	DETSC 3304	0.05	ug/l	< 0.05
Benzo(g,h,i)perylene	DETSC 3304*	0.08	ug/l	< 0.08
Dibenzo(a,h)anthracene	DETSC 3304	0.06	ug/l	< 0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3304*	0.05	ug/l	< 0.05
PAH	DETSC 3304	0.2	ug/l	< 0.20
Phenols				
Phenol	*	0.5	ug/l	< 0.50

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Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

Lab No	679010
Sample ID	SW04
Depth	
Other ID	
Sample Type	WATER
Sampling Date	30/07/14
Sampling Time	n/s

Test	Method	LOD	Units	
VOCs				
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1
cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1
2,2-dichloropropane	DETSC 3432	2	ug/l	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4
Chloroform	DETSC 3432	1	ug/l	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1
Benzene	DETSC 3432	1	ug/l	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
Toluene	DETSC 3432	1	ug/l	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1
Styrene	DETSC 3432	1	ug/l	< 1
Bromoform	DETSC 3432	1	ug/l	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

			Lab No	679010
			Sample ID	SW04
			Depth	
			Other ID	
			Sample Type	WATER
			Sampling Date	30/07/14
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1
SVOCs				
Phenol	DETS 071*	1	ug/l	< 1.2
Aniline	DETS 071*	1	ug/l	< 1.2
2-Chlorophenol	DETS 071*	1	ug/l	< 1.2
Benzyl Alcohol	DETS 071*	1	ug/l	< 1.2
2-Methylphenol	DETS 071*	1	ug/l	< 1.2
Bis(2-chloroisopropyl)ether	DETS 071*	1	ug/l	< 1.2
3&4-Methylphenol	DETS 071*	1	ug/l	< 1.2
Bis(2-chloroethoxy)methane	DETS 071*	1	ug/l	< 1.2
2,4-Dimethylphenol	DETS 071*	1	ug/l	< 1.2
2,4-Dichlorophenol	DETS 071*	1	ug/l	< 1.2
1,2,4-Trichlorobenzene	DETS 071*	1	ug/l	< 1.2
4-Chloro-3-methylphenol	DETS 071*	1	ug/l	< 1.2
2-Methylnaphthalene	DETS 071*	1	ug/l	< 1.2
1,2-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2
Hexachlorocyclopentadiene	DETS 071*	1	ug/l	< 1.2
2,4,6-Trichlorophenol	DETS 071*	1	ug/l	< 1.2
2,4,5-Trichlorophenol	DETS 071*	1	ug/l	< 1.2
2-Chloronaphthalene	DETS 071*	1	ug/l	< 1.2
2-Nitroaniline	DETS 071*	1	ug/l	< 1.2
2,4-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2
3-Nitroaniline	DETS 071*	1	ug/l	< 1.2
4-Nitrophenol	DETS 071*	1	ug/l	< 1.2
Dibenzofuran	DETS 071*	1	ug/l	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Summary of Chemical Analysis
Water Samples

Our Ref 14-11847
Client Ref 17633G
Contract Title Barry

Lab No	679010
Sample ID	SW04
Depth	
Other ID	
Sample Type	WATER
Sampling Date	30/07/14
Sampling Time	n/s

Test	Method	LOD	Units	
2,6-Dinitrotoluene	DETS 071*	1	ug/l	< 1.2
2,3,4,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2
Diethylphthalate	DETS 071*	1	ug/l	< 1.2
4-Chlorophenylphenylether	DETS 071*	1	ug/l	< 1.2
4-Nitroaniline	DETS 071*	1	ug/l	< 1.2
Diphenylamine	DETS 071*	1	ug/l	< 1.2
4-Bromophenylphenylether	DETS 071*	1	ug/l	< 1.2
Hexachlorobenzene	DETS 071*	1	ug/l	< 1.2
Bis(2-ethylhexyl)ether	DETS 071*	1	ug/l	< 1.2
Pentachlorophenol	DETS 071*	1	ug/l	< 1.2
Di-n-butylphthalate	DETS 071*	1	ug/l	< 1.2
Butylbenzylphthalate	DETS 071*	1	ug/l	< 1.2
Bis(2-ethylhexyl)phthalate	DETS 071*	1	ug/l	< 1.2
Di-n-octylphthalate	DETS 071*	1	ug/l	< 1.2
1,4-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2
Dimethylphthalate	DETS 071*	1	ug/l	< 1.2
1,3-Dinitrobenzene	DETS 071*	1	ug/l	< 1.2
2,3,5,6-Tetrachlorophenol	DETS 071*	1	ug/l	< 1.2
Azobenzene	DETS 071*	1	ug/l	< 1.2
Carbazole	DETS 071*	1	ug/l	< 1.2

Key: * -not accredited. n/s -not supplied. U/S -unsuitable sample.

Information in Support of the Analytical Results

Our Ref 14-11847
Client Ref 17633G
Contract Barry

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
678992	SQBH02 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678993	SQBH03 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678994	SQBH04 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678995	SQBH05 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678996	SQBH07 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678997	SQBH08 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678998	SQBH09 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
678999	SQBH11 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679000	SQMBH02 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679001	SQMBH03 S WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679002	SQMBH03 D WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679003	SQMBH04 S WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679004	SQMBH04 D WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679005	SQMBH05 S WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679006	SQMBH05 D WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679007	SW01 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679008	SW02 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679009	SW03 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		
679010	SW04 WATER	30/07/14	GJ 1L (1L), GJ 60ml (50ml) x4, GV (40ml) x2, PB 1L (1L)		

Key: G-Glass P-Plastic J-Jar B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX 4 ▪ Soil Chemistry Summary Spreadsheets and Analysis

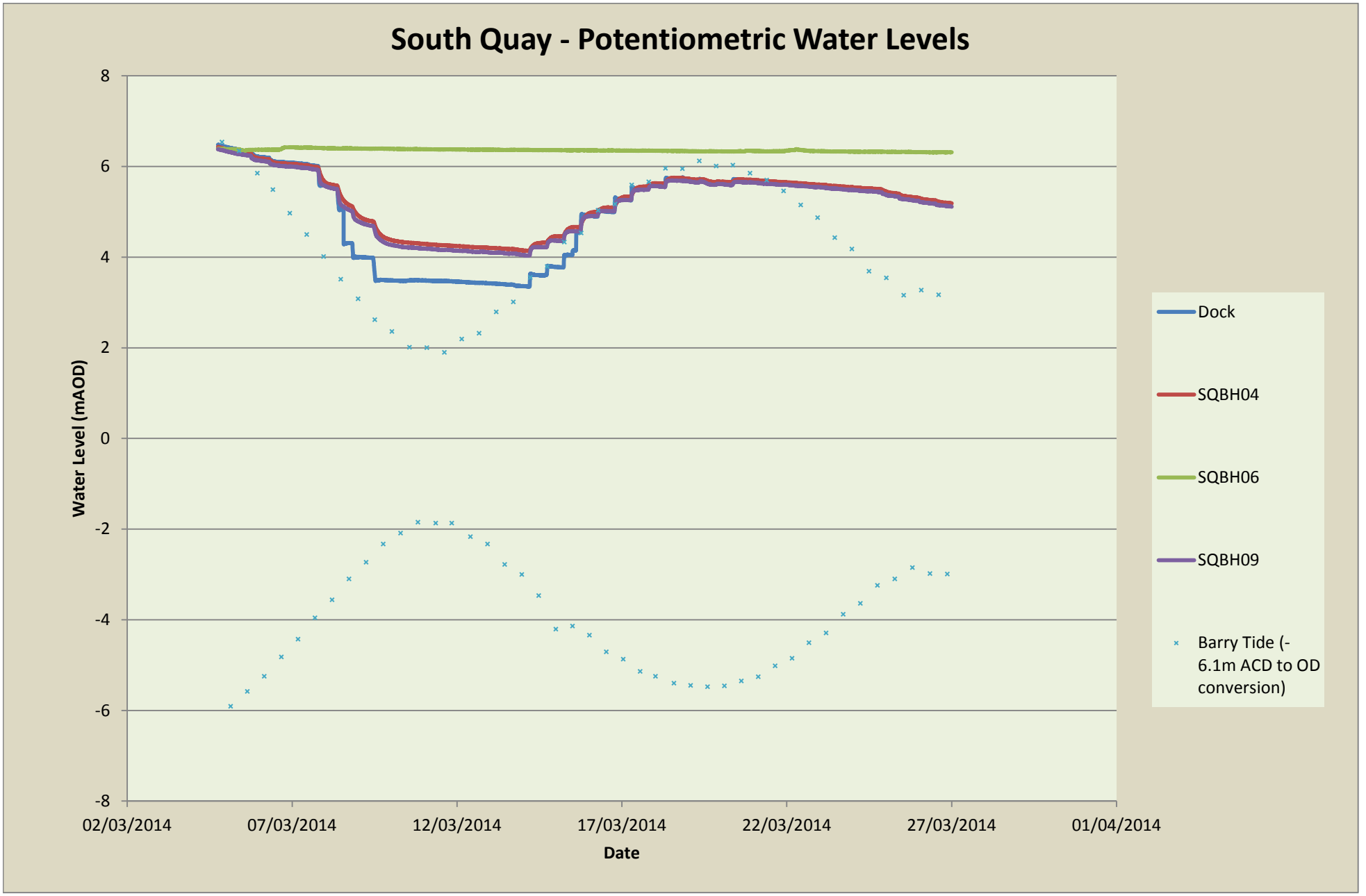
Location		SQPMTT302A	SQPMTT302B	SQPMTT303A	SQPMTT303B	SQPMTP312	SQPMTP313	SQPMTP316	Number of Tests	Maximum	Mean	Screening Level	No. > SL
Depth (m)		0.50	0.50	0.40	0.40	0.60	0.30	1.70					
TPH ($mg.kg^{-1}$)	Aliphatic C5-C6	0.01	0.01	5.5	1.5	6.4	0.11	0.01	7	6.4	1.93	30	0
	Aliphatic C6-C8	20	0.88	67	8.5	25	1.2	0.48	7	67	17.58	73	0
	Aliphatic C8-C10	100	4.1	35	8.1	15	10	0.01	7	100	24.60	19	2
	Aliphatic C10-C12	690	400	110	500	590	62	2.8	7	690	336.40	93	5
	Aliphatic C12-C16	1300	920	350	1800	1300	370	94	7	1800	876.29	740	4
	Aliphatic C16-C21	1000	1200	370	1800	1200	350	150	7	1800	867.14	45000	0
	Aliphatic C21-C35	1000	1300	110	570	350	100	76	7	1300	500.86	45000	0
	Aromatic C5-C7	0.23	0.01	1	0.94	5.4	0.05	0.15	7	5.4	1.11	65	0
	Aromatic C7-C8	0.89	0.02	3.8	0.98	4.7	0.02	0.04	7	4.7	1.49	120	0
	Aromatic C8-C10	28	1.3	16	3.8	6.6	2.5	1.2	7	28	8.49	27	1
	Aromatic C10-C12	230	67	38	190	310	16	0.9	7	310	121.70	69	3
	Aromatic C12-C16	880	500	170	940	840	230	35	7	940	513.57	140	6
	Aromatic C16-C21	1200	1100	300	1400	1000	330	160	7	1400	784.29	250	6
	Aromatic C21-C35	2100	2100	140	510	350	120	110	7	2100	775.71	890	2
BTEX ($mg.kg^{-1}$)	Benzene	0.11	0.28	0.26	0.23	0.97	0.01	0.22	7	0.97	0.30	0.33	1
	Ethylbenzene	0.01	0.01	0.08	0.08	0.14	0.01	0.01	7	0.14	0.05	350	0
	Toluene	0.01	0.02	0.09	0.05	0.24	0.01	0.06	7	0.24	0.07	610	0
	Xylene	0.01	0.01	0.15	0.09	0.27	0.01	0.01	7	0.27	0.08	230	0
PAH ($mg.kg^{-1}$)	Acenaphthene	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7	0.1	0.10	210	0
	Acenaphthylene	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7	0.1	0.10	170	0
	Anthracene	0.1	0.1	0.1	0.1	0.4	0.2	0.4	7	0.4	0.20	2300	0
	Benzo(a)anthracene	0.1	0.1	0.1	0.2	0.1	0.1	0.6	7	0.6	0.19	3.1	0
	Benzo(a)pyrene	0.3	0.2	0.1	0.1	0.1	0.1	0.7	7	0.7	0.23	0.83	0
	Benzo(b)fluoranthene	0.4	0.4	0.1	0.2	0.1	0.1	1	7	1	0.33	5.6	0
	Benzo(k)fluoranthene	0.1	0.1	0.1	0.1	0.1	0.1	0.4	7	0.4	0.14	8.5	0
	Benzo(g,h,i)perylene	0.2	0.2	0.1	0.1	0.1	0.1	0.5	7	0.5	0.19	44	0
	Chrysene	0.1	0.8	0.1	0.4	0.1	0.1	1	7	1	0.37	6	0
	Dibenzo(a,h)anthracene	0.1	0.1	0.1	0.1	0.1	0.1	0.2	7	0.2	0.11	0.76	0
	Fluoranthene	1	0.5	0.1	0.6	0.4	0.1	1.4	7	1.4	0.59	260	0
	Fluorene	1.7	0.1	0.1	1.9	1.1	0.1	0.4	7	1.9	0.77	160	0
	Indeno(1,2,3-c,d)pyrene	0.1	0.1	0.1	0.1	0.1	0.1	0.4	7	0.4	0.14	3.2	0
	Naphthalene	0.01	0.01	0.86	0.01	0.01	0.01	0.01	7	0.86	0.13	1.5	0
	Phenanthrene	2.2	0.1	0.3	3.3	1.5	0.3	1.2	7	3.3	1.27	92	0
	Pyrene	1	0.8	0.1	0.8	0.4	0.1	1.4	7	1.4	0.66	560	0
Phenol - Monohydric ($mg.kg^{-1}$)		0.1	0.1	0.1	0.1	0.1	0.1	0.1	7	0.1	0.10	420	0
VOC ($mg.kg^{-1}$)	1,2-dichloroethane	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.01	7
	Carbon tetrachloride	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.02	0
	Trichloroethene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.11	0
	1,1,2-trichloroethane	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.60	0
	1,2,4-trimethylbenzene	0.01	0.01	0.90	0.31	0.64	0.01	0.01	7	0.9	0.27	0.35	2
	Cis-1,2-dichloroethene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.11	0
	Trans-1,2-dichloroethene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.19	0
	Styrene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	8.10	0
	Vinyl Chloride	0.01	0.01	0.01	0.01	0.01	0.01	0.01	7	0.01	0.01	0.00047	7

Location		WPTP82	WPTP84	WPTP87	WPTP87	WPTP89	WPTP89	WPTP90	WPTP90	WPTP92	WPTP93	WPTP96	WPTP99	WPTP101	WPTP105	WPTP107	WPTP108	WPTP109
Depth (m)		0.3	0.4	0.3	1.3	0.3	1.8	0.3	1	0.5	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3
TPH ($mg.kg^{-1}$)	Aliphatic C5-C6													0.01				
	Aliphatic C6-C8													0.01				
	Aliphatic C8-C10													0.01				
	Aliphatic C10-C12													0.1				
	Aliphatic C12-C16													0.1				
	Aliphatic C16-C21													0.1				
	Aliphatic C21-C35													0.1				
	Aromatic C5-C7													0.01				
	Aromatic C7-C8													0.01				
	Aromatic C8-C10													0.01				
	Aromatic C10-C12													0.1				
	Aromatic C12-C16													0.1				
	Aromatic C16-C21													12.9				
	Aromatic C21-C35													0.1				
BTEX ($mg.kg^{-1}$)	Benzene																	
	Ethylbenzene																	
	Toluene																	
	Xylene																	
PAH ($mg.kg^{-1}$)	Acenaphthene	0.010	0.040	0.750	0.040	0.160	0.010	0.060	0.010	0.010	0.160	0.180	0.010		0.080	0.150	0.240	0.560
	Acenaphthylene	0.010	0.020	0.130	0.020	0.150	0.010	0.020	0.010	0.010	0.050	0.080	0.010		0.030	0.050	0.150	0.180
	Anthracene	0.010	0.020	0.540	0.010	0.400	0.010	0.150	0.010	0.440	0.320	0.350	0.040		0.130	0.210	0.610	0.880
	Benzo(a)anthracene	0.080	0.010	4.210	0.130	3.190	0.270	1.150	0.010	1.760	1.980	0.590	0.910		0.330	0.470	2.070	3.080
	Benzo(a)pyrene	0.100	0.010	7.140	0.090	6.140	0.300	1.840	0.030	1.750	4.180	0.300	1.500		0.210	0.340	1.370	2.110
	Benzo(b)fluoranthene	0.080	0.010	4.870	0.110	5.400	0.360	1.910	0.050	1.250	4.040	1.310	1.270		0.620	0.990	3.490	5.640
	Benzo(k)fluoranthene	0.030	0.010	2.760	0.050	2.580	0.140	0.890	0.030	0.690	1.100	0.300	0.540		0.210	0.320	1.180	1.880
	Benzo(g,h,i)perylene	0.080	0.010	4.870	0.110	5.400	0.360	1.910	0.050	1.250	4.040	1.310	1.270		0.620	0.990	3.490	5.640
	Chrysene	0.070	0.070	4.350	0.180	5.000	0.330	1.970	0.020	2.100	2.790	1.490	1.960		0.540	0.910	3.390	5.870
	Dibenzo(a,h)anthracene	0.010	0.010	0.600	0.020	0.770	0.090	0.320	0.010	0.130	0.620	0.030	0.010		0.010	0.040	0.350	0.500
	Fluoranthene	0.060	0.060	7.060	0.100	5.380	0.260	1.820	0.010	4.100	4.060	1.980	2.370		0.730	1.060	4.400	6.200
	Fluorene	0.010	0.040	0.380	0.010	0.170	0.020	0.010	0.010	0.060	0.130	0.200	0.010		0.060	0.200	0.250	0.550
	Indeno(1,2,3-c,d)pyrene	0.040	0.010	4.950	0.040	4.230	0.300	1.590	0.040	1.240	3.470	0.240	0.890		0.160	0.210	1.060	1.370
	Naphthalene	0.030	0.030	0.480	0.300	0.590	0.050	0.200	0.010	0.010	0.730	0.820	0.190		0.430	0.290	0.780	1.670
	Phenanthrene	0.080	0.040	4.310	0.110	2.370	0.130	1.010	0.010	2.490	2.490	1.630	1.240		0.510	1.030	2.500	3.970
	Pyrene	0.010	0.050	6.120	0.090	4.900	0.180	1.430	0.020	2.630	3.290	1.670	1.960		0.590	0.870	3.580	5.830
Phenol - Monohydric ($mg.kg^{-1}$)																		
VOC ($mg.kg^{-1}$)	1,2-dichloroethane																	
	Carbon tetrachloride																	
	Trichloroethene																	
	1,1,2-trichloroethane																	
	1,2,4-trimethylbenzene																	
	Cis-1,2-dichloroethene																	
	Trans-1,2-dichloroethene																	
	Styrene																	
	Vinyl Chloride																	

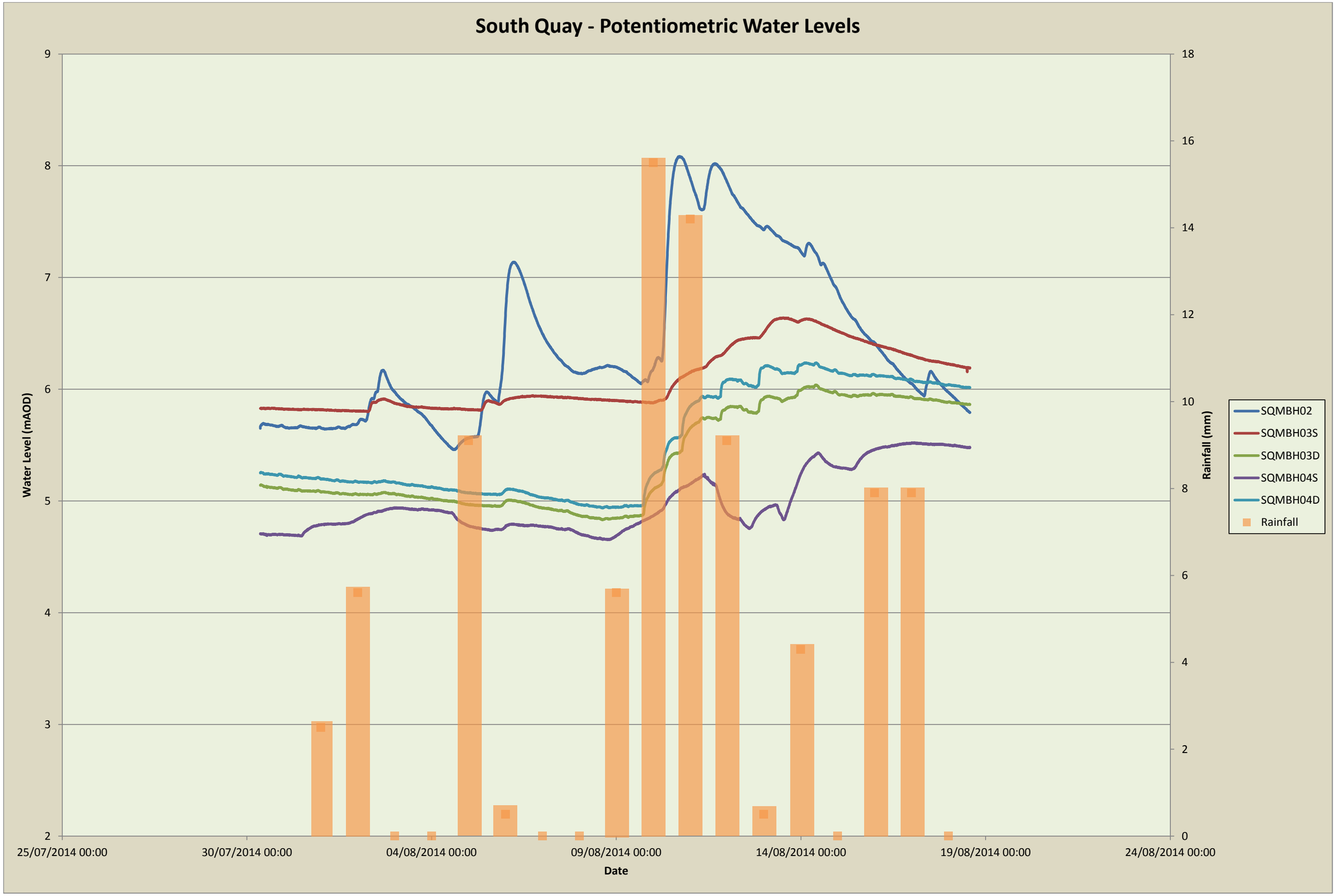
Location		WPTP112	WPTP112	WPTP113	WPTP113	WPTP114	WPTP115	WPTP115	SQBH01	SQTP01	SQTP02	SQTP02	SQTP03	SQTP04	SQTP04	SQTP05	SQTP05	SQTP06
Depth (m)		0.3	0.8	0.3	0.3	0.3	0.3	1.3	1.5	0.3	0.1	0.4	0.3	0.1	0.4	0.5	2.5	0.4
TPH ($mg.kg^{-1}$)	Aliphatic C5-C6			0.01						0.01	0.01		0.01	0.05	2.29		0.05	0.06
	Aliphatic C6-C8			0.01						0.01	0.01		0.01	0.05	61.2		0.05	0.31
	Aliphatic C8-C10			0.01						0.01	0.01		0.01	0.05	40.1		0.05	0.33
	Aliphatic C10-C12			0.1						0.1	0.1		0.1	181	1770		1090	305
	Aliphatic C12-C16			0.1						0.1	0.1		0.1	433	3200		959	425
	Aliphatic C16-C21			0.1						0.1	0.1		26.6	446	2490		90.5	510
	Aliphatic C21-C35			0.1						0.1	0.1		3.7	217	976		4.4	164
	Aromatic C5-C7			0.01						0.01	0.01		0.2	1.66	49		0.05	0.11
	Aromatic C7-C8			0.01						0.01	0.01		0.01	0.42	26.5		0.05	0.06
	Aromatic C8-C10			0.01						0.01	0.01		0.01	1.78	60.93		0.1	1.62
	Aromatic C10-C12			0.1						0.1	0.1		0.1	67.6	547		169	292
	Aromatic C12-C16			0.1						0.1	0.1		0.1	107	623		387	233
	Aromatic C16-C21			0.1						0.1	0.1		0.1	180	639		182	168
	Aromatic C21-C35			0.1						0.1	0.1		0.1	117	270		441	102
BTEX ($mg.kg^{-1}$)	Benzene		0.009	0.009						0.025	0.01		0.32	2.6	460		0.05	0.48
	Ethylbenzene		0.004	0.004						0.063	0.010		0.061	0.240	69.000		0.050	0.700
	Toluene		0.005	0.005						0.016	0.005		0.058	0.490	90.000		0.050	0.320
	Xylene		0.020	0.024						0.375	0.024		0.074	1.940	200.000		0.100	7.400
PAH ($mg.kg^{-1}$)	Acenaphthene	0.030		0.100	0.010	0.150	0.010	0.010	0.190	0.100	0.100	0.010	0.100	0.100	0.500	0.020	0.260	0.330
	Acenaphthylene	0.010		0.100	0.010	0.080	0.010	0.010	0.070	0.100	0.100	0.010	0.100	0.100	0.500	0.020	0.100	0.140
	Anthracene	0.030		0.100	0.010	0.190	0.010	0.010	0.440	0.100	0.100	0.020	0.100	0.100	0.500	0.050	0.100	0.600
	Benzo(a)anthracene	0.090		0.200	0.020	0.590	0.010	0.010	1.090	0.170	0.100	0.030	0.150	0.100	0.500	0.250	0.100	0.910
	Benzo(a)pyrene	0.120		0.170	0.090	0.900	0.020	0.010	2.750	0.150	0.100	0.160	0.200	0.100	0.500	0.450	0.100	0.630
	Benzo(b)fluoranthene	0.190		0.260	0.140	1.340	0.020	0.010	2.580	0.140	0.100	0.130	0.220	0.100	0.500	0.620	0.100	1.100
	Benzo(k)fluoranthene	0.070		0.100	0.040	0.450	0.010	0.010	2.580	0.140	0.100	0.130	0.230	0.100	0.500	0.620	0.100	0.810
	Benzo(g,h,i)perylene	0.190		0.200	0.140	1.340	0.020	0.010	1.730	0.100	0.100	0.030	0.100	0.100	0.500	0.190	0.100	0.400
	Chrysene	0.190		0.350	0.090	0.860	0.010	0.010	2.530	0.200	0.100	0.210	0.270	0.150	0.500	0.680	0.240	1.600
	Dibenzo(a,h)anthracene	0.010		0.100	0.010	0.160	0.010	0.010	0.470	0.100	0.100	0.010	0.100	0.100	0.500	0.080	0.100	0.200
	Fluoranthene	0.090		0.240	0.080	1.070	0.010	0.010	4.420	0.290	0.100	0.170	0.360	0.100	0.500	0.640	0.170	1.600
	Fluorene	0.010		0.100	0.010	0.090	0.010	0.010	0.130	0.100	0.100	0.040	0.100	0.100	0.990	0.060	0.420	0.950
	Indeno(1,2,3-c,d)pyrene	0.220		0.180	0.160	1.410	0.010	0.050	2.830	0.100	0.100	0.030	0.100	0.100	0.500	0.540	0.100	0.410
	Naphthalene	0.050		0.160	3.000	0.580	0.010	0.010	0.260	0.270	0.100	0.160	0.230	9.000	120.000	0.240	1.400	13.000
	Phenanthrene	0.100		0.310	0.020	1.180	0.010	0.010	2.080	0.230	0.110	0.160	0.310	0.170	1.500	0.540	0.950	2.400
	Pyrene	0.090		0.260	0.130	0.870	0.010	0.010	3.630	0.260	0.100	0.200	0.380	0.130	0.500	0.500	0.320	1.800
Phenol - Monohydric ($mg.kg^{-1}$)										0.100	0.100		0.100	0.100	1.200		0.100	0.100
VOC ($mg.kg^{-1}$)	1,2-dichloroethane		0.005	0.005						0.005	0.005		0.005	0.005	0.005		0.005	0.005
	Carbon tetrachloride		0.014	0.014						0.014	0.014		0.014	0.014	0.014		0.014	0.014
	Trichloroethene		0.009	0.009						0.009	0.009		0.009	0.009	0.009		0.009	0.009
	1,1,2-trichloroethane		0.010	0.010						0.010	0.010		0.010	0.010	0.010		0.010	0.010
	1,2,4-trimethylbenzene		0.009	0.009						0.230	0.009		0.009	0.480	200.000		1.800	18.000
	Cis-1,2-dichloroethene		0.005	0.005						0.005	0.005		0.005	0.005	0.005		0.005	0.005
	Trans-1,2-dichloroethene		0.011	0.011						0.011	0.011		0.011	0.011	0.011		0.011	0.011
	Styrene		0.010	0.010						0.010	0.010		0.010	0.010	0.010		0.010	0.010
	Vinyl Chloride		0.010	0.010						0.010	0.010		0.010	0.010	0.010		0.010	0.010

Location		SQTP07	SQTP08	SQTP43	SQTP44	SQTP45	SQTP45	Number of Tests	Maximum	Mean	Screening Level	No. > SL
Depth (m)		0.2	2.5	0.3	0.3	0.2	0.4					
TPH ($mg.kg^{-1}$)	Aliphatic C5-C6	0.05	0.01		0.17	0.05	0.01	14	2.29	0.20	30	0
	Aliphatic C6-C8	0.05	0.01		0.09	0.05	0.01	14	61.2	4.42	73	0
	Aliphatic C8-C10	0.05	0.01		0.33	0.05	0.01	14	40.1	2.93	19	1
	Aliphatic C10-C12	240	0.1		718	133	0.1	14	1770	316.98	93	7
	Aliphatic C12-C16	639	0.1		1480	317	31.4	14	3200	534.64	740	3
	Aliphatic C16-C21	532	0.1		1260	325	155	14	2490	416.83	45000	0
	Aliphatic C21-C35	204	0.1		310	149	92.9	14	976	151.54	45000	0
	Aromatic C5-C7	0.2	0.18		1.31	0.64	0.08	14	49	3.82	65	0
	Aromatic C7-C8	0.05	0.01		0.07	0.05	0.01	14	26.5	1.95	120	0
	Aromatic C8-C10	0.1	0.03		3.14	0.25	0.01	14	60.93	4.86	27	1
	Aromatic C10-C12	13.2	0.1		440	53.4	0.1	14	547	113.06	69	4
	Aromatic C12-C16	62.2	0.1		588	19.5	4.6	14	623	144.64	140	4
	Aromatic C16-C21	247	0.1		495	9.2	118	14	639	146.54	250	2
	Aromatic C21-C35	174	0.1		138	0.1	100	14	441	95.91	890	0
BTEX ($mg.kg^{-1}$)	Benzene	0.36	0.32		2.6	10	0.15	14	460	34.07	0.33	6
	Ethylbenzene	0.035	0.010		1.500	3.600	0.019	14	69	5.38	350	0
	Toluene	0.064	0.064		0.390	1.100	0.036	14	90	6.61	610	0
	Xylene	0.134	0.024		13.600	0.690	0.097	14	200	16.04	230	0
PAH ($mg.kg^{-1}$)	Acenaphthene	0.100	0.130	0.040	0.170	0.100	0.100	38	0.75	0.14	210	0
	Acenaphthylene	0.100	0.100	0.010	0.100	0.100	0.100	38	0.5	0.08	170	0
	Anthracene	0.100	0.220	0.030	0.210	0.100	0.100	38	0.88	0.19	2300	0
	Benzo(a)anthracene	0.100	0.650	0.370	0.610	0.200	0.120	38	4.21	0.70	3.1	2
	Benzo(a)pyrene	0.100	0.560	0.540	0.540	0.120	0.100	38	7.14	0.94	0.83	10
	Benzo(b)fluoranthene	0.100	0.530	0.620	1.300	0.210	0.100	38	5.64	1.10	5.6	1
	Benzo(k)fluoranthene	0.100	0.600	0.620	0.740	0.160	0.100	38	2.76	0.55	8.5	0
	Benzo(g,h,i)perylene	0.100	0.370	0.230	0.350	0.100	0.100	38	5.64	1.00	44	0
	Chrysene	0.100	0.790	0.660	1.200	0.320	0.150	38	5.87	1.11	6	0
	Dibenzo(a,h)anthracene	0.100	0.130	0.020	0.150	0.100	0.100	38	0.77	0.16	0.76	1
	Fluoranthene	0.100	1.400	0.890	1.100	0.380	0.210	38	7.06	1.41	260	0
	Fluorene	0.100	0.100	0.020	0.410	0.310	0.100	38	0.99	0.17	160	0
	Indeno(1,2,3-c,d)pyrene	0.100	0.310	0.440	0.390	0.100	0.100	38	4.95	0.74	3.2	3
	Naphthalene	0.930	0.550	0.620	5.500	2.200	0.300	38	120	4.35	1.5	7
	Phenanthrene	0.140	1.300	0.500	1.400	0.750	0.180	38	4.31	1.01	92	0
	Pyrene	0.100	1.200	0.680	1.400	0.340	0.220	38	6.12	1.22	560	0
Phenol - Monohydric ($mg.kg^{-1}$)		0.100	0.100		0.100	0.100	0.100	12	1.2	0.19	420	0
VOC ($mg.kg^{-1}$)	1,2-dichloroethane	0.005	0.005		0.005	0.005	0.005	14	0.005	0.01	0.01	0
	Carbon tetrachloride	0.014	0.014		0.014	0.014	0.014	14	0.014	0.01	0.02	0
	Trichloroethene	0.009	0.009		0.009	0.009	0.009	14	0.009	0.01	0.11	0
	1,1,2-trichloroethane	0.010	0.010		0.010	0.010	0.010	14	0.01	0.01	0.60	0
	1,2,4-trimethylbenzene	0.009	0.009		19.000	17.000	0.016	14	200	18.33	0.35	6
	Cis-1,2-dichloroethene	0.005	0.005		0.005	0.005	0.005	14	0.005	0.01	0.11	0
	Trans-1,2-dichloroethene	0.011	0.011		0.011	0.011	0.011	14	0.011	0.01	0.19	0
	Styrene	0.010	0.010		0.010	0.010	0.010	14	0.01	0.01	8.10	0
	Vinyl Chloride	0.010	0.010		0.010	0.010	0.010	14	0.01	0.01	0.00047	14

APPENDIX 5 ▪ Diver Data


South Quay - Potentiometric Water Levels
Water Level (mAOD)
8
6
4
2
0
-2
-4
-6
-8
02/03/2014
07/03/2014
12/03/2014
17/03/2014
22/03/2014
27/03/2014
01/04/2014
Date
Dock
SQBH04
SQBH06
SQBH09
Barry Tide (-6.1m ACD to OD conversion)

South Quay - Potentiometric Water Levels



APPENDIX 6 ▪ Groundwater Monitoring Field Records

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQBH02					
Date		03/06/14					
Time		08:48					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (℃)	ORP (mV)	pH
1.96	6.78	25	0.82	0.92	12.6	-105	8.18
		50	0.43	0.91	12.5	-116	8.07
		75	0.25	0.91	12.5	-125	8.03
		100	0.25	0.90	12.5	-127	8.00

Purge Equipment:	whale mega purger
Sample Equiment:	whale mega purger
Visual Observations of Purge Water:	clear with a slight oily sheen on surface
Odour:	slight hydrocarbon
Other Comments:	dip to LNAPL 1.95m

Borehole Reference		SQBH03					
Date		02/06/14					
Time		16:44					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (℃)	ORP (mV)	pH
2.78	10.64	50	0.47	>20	13.5	23	7.24
		100	0.39	19.55	13.1	23	7.20
		150	0.39	19.12	13.0	22	7.20
		200	0.28	19.34	13.0	22	7.20

Purge Equipment:	whale mega purger
Sample Equiment:	whale mega purger
Visual Observations of Purge Water:	light orange brown turbid dispersion becoming clear
Odour:	none
Other Comments:	-

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQBH04					
Date		02/06/14					
Time		16:02					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.74	12.00	50	0.54	>20	13.8	-29	7.09
		100	0.31	>20	13.4	-29	7.14
		150	0.24	>20	13.3	-29	7.15
		200	0.39	>20	13.4	-29	7.17
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				light orange brown turbid dispersion becoming clear			
Odour:				none			
Other Comments:				-			

Borehole Reference		SQBH05					
Date		02/06/14					
Time		16:25					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.77	8.87	40	0.78	>20	13.8	10	7.18
		80	0.91	>20	13.5	10	7.17
		120	0.84	>20	13.5	9	7.16
		160	0.56	>20	13.5	8	7.15
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				slightly turbid grey dispersion becoming clear			
Odour:				none			
Other Comments:				obstruction in standpipe - dip ok but pump not fully lowered			

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQBH06b					
Date		02/06/14					
Time		15:34					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
1.64	3.78	25	0.05	1.74	14.7	-157	7.07
		50	1.46	2.39	13.9	-184	6.95
		75	1.36	2.07	14.2	-196	7.05
		100	0.41	1.96	14.2	-200	7.11
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				orange brown turbid dispersion			
Odour:				hydrocarbon			
Other Comments:				-			

Borehole Reference		SQBH07					
Date		02/06/14					
Time		15:10					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
1.64	3.78	25	0.35	5.05	13.3	-54	6.76
		50	0.26	5.14	13.0	-86	6.73
		75	0.26	5.23	12.9	-97	6.73
		100	0.19	5.25	12.9	-102	6.73
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				dark grey turbid dispersion becoming clear			
Odour:				hydrogen sulphide			
Other Comments:				-			

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQBH08					
Date		02/06/14					
Time		15:30					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.20	4.80	20	0.95	2.12	13.9	-114	7.05
		40	0.63	4.47	13.3	-145	6.72
		60	0.93	5.72	13.2	-155	6.64
		80	0.96	6.24	13.2	-158	6.61
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid orange brown dispersion					
Odour:		hydrogen sulphide					
Other Comments:		-					

Borehole Reference		SQBH09					
Date		02/06/14					
Time		14:30					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.81	13.65	50	0.94	>20	12.6	133	6.07
		100	0.83	>20	12.3	127	6.10
		150	0.92	>20	12.0	124	6.14
		200	0.87	>20	12.0	120	6.16
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey dispersion becoming clear					
Odour:		none					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQBH11					
Date		02/06/14					
Time		13:45					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.14	3.89	20	3.38	2.53	14.0	133	6.61
Purge Equipment:		bailer					
Sample Equiment:		bailer					
Visual Observations of Purge Water:		turbid orange brown dispersion					
Odour:		slight hydrogen sulphide					
Other Comments:		-					

Borehole Reference		SQBH12					
Date		02/06/14					
Time		13:15					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.19	3.26						
Purge Equipment:		-					
Sample Equiment:		-					
Visual Observations of Purge Water:		-					
Odour:		-					
Other Comments:		no recovery using bailer					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQMBH02					
Date		03/06/14					
Time		10:55					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
17.08	20.25	20	3.22	0.93	14.0	-13	7.47
		40	3.21	0.89	13.5	-12	7.46
		60	2.99	0.87	13.4	-12	7.48
		80	3.02	0.87	13.4	-16	7.52
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey dispersion becoming clear					
Odour:		none					
Other Comments:		none					

Borehole Reference		SQMBH03 S					
Date		03/06/14					
Time		08:00					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.48	5.45	20	1.00	12.42	12.0	-156	7.29
		40	0.83	12.31	11.9	-168	7.25
		60	0.86	12.17	11.9	-185	7.25
		80	0.80	12.13	11.8	-187	7.26
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		grey brown turbid dispersion becoming clear					
Odour:		strong hydrogen sulphide					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQMBH03 D					
Date		03/06/14					
Time		08:00					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.27	16.88	75	0.70	13.85	13.1	-179	7.36
		150	0.80	15.30	13.2	-149	7.38
		225	0.37	15.70	13.2	-124	7.40
		300	0.69	15.92	13.2	-118	7.40
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				turbid orange brown dispersion becoming clear			
Odour:				none			
Other Comments:				-			

Borehole Reference		SQMBH04 S					
Date		03/06/14					
Time		10:05					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.80	5.60	20	0.41	2.12	13.9	-37	7.07
		40	0.89	2.04	13.7	-55	7.10
		60	0.89	1.36	13.1	-61	7.12
		80	1.03	1.31	12.9	-67	7.12
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				turbid orange brown dispersion becoming clearer			
Odour:				slight hydrocarbon			
Other Comments:				-			

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQMBH04 D					
Date		03/06/14					
Time		10:20					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.67	16.64	75	1.19	2.90	13.8	-65	7.18
		150	0.78	3.31	13.9	-58	7.13
		225	0.54	3.69	13.8	-54	7.09
		300	0.54	3.79	13.8	-52	7.08
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				turbid orange brown dispersion becoming clearer			
Odour:				none			
Other Comments:				-			

Borehole Reference		SQMBH05 S					
Date		03/06/14					
Time		08:48					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.07	5.43	20	0.39	1.50	13.1	-31	7.59
		40	2.25	2.15	12.8	-31	7.43
		60	0.48	2.47	12.2	-47	7.37
		80	0.51	2.63	12.5	-60	7.41
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				dark grey brown turbid dispersion			
Odour:				hydrocarbon			
Other Comments:				-			

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SQMBH05 D					
Date		03/06/14					
Time		09:05					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.57	16.68	75	2.15	2.72	13.7	-63	7.29
		150	1.98	2.49	13.8	-59	7.33
		225	2.30	2.35	13.7	-52	7.36
		300	2.16	2.27	13.8	-46	7.36
Purge Equipment:				whale mega purger			
Sample Equiment:				whale mega purger			
Visual Observations of Purge Water:				turbid grey brown dispersion becoming clear			
Odour:				none			
Other Comments:				-			

Borehole Reference							
Date							
Time							
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
Purge Equipment:							
Sample Equiment:							
Visual Observations of Purge Water:							
Odour:							
Other Comments:							

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SW01					
Date		03/06/14					
Time		10:15					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (℃)	ORP (mV)	pH
-	-	-	9.44	>20	17.2	23	6.88
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

Borehole Reference		SW02					
Date		03/06/14					
Time		10:32					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (℃)	ORP (mV)	pH
-	-	-	9.65	>20	17.2	25	6.81
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	06/06/14
REFERENCE	FN-17633g-20140606-LS		

Borehole Reference		SW03					
Date		03/06/14					
Time		10:48					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	10.01	>20	17.1	25	6.74
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

Borehole Reference		SW04					
Date		03/06/14					
Time		11:08					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	9.89	>20	17.2	44	6.42
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQBH02					
Date		30/07/14					
Time		09:40					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.53	6.94	40					
Purge Equipment:		bailer					
Sample Equiment:		bailer					
Visual Observations of Purge Water:		turbid grey dispersion with clear oily globules					
Odour:		strong hydrocarbon					
Other Comments:		dip to lnapl: 2.52m no field readings taken due to free product					

Borehole Reference		SQBH03					
Date		30/07/14					
Time		08:50					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.62	10.60	50	1.44	19.48	14.4	78	6.74
		100	1.26	19.20	13.3	67	6.85
		150	1.41	19.12	13.1	64	6.87
		200	1.94	19.11	13.0	63	6.89
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		clear					
Odour:		none					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQBH04					
Date		30/07/14					
Time		09:55					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.58	11.96	50	1.52	>20	14.6	52	7.07
		100	1.59	19.70	13.5	42	7.11
		150	1.66	19.60	13.3	34	7.12
		200	0.99	19.54	13.2	30	7.12
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		clear					
Odour:		none					
Other Comments:		-					

Borehole Reference		SQBH05					
Date		30/07/14					
Time		10:33					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.62	8.87	50	1.31	>20	15.9	50	6.98
		100	1.38	>20	14.7	33	7.05
		150	1.97	>20	14.7	25	7.06
		200	1.05	>20	14.6	20	7.07
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		clear					
Odour:		none					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQBH06b					
Date		30/07/14					
Time		09:00					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-						
Purge Equipment:		-					
Sample Equiment:		-					
Visual Observations of Purge Water:		-					
Odour:		-					
Other Comments:		borehole buried under Cuddy stockpile					

Borehole Reference		SQBH07					
Date		30/07/14					
Time		10:58					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.55	4.17	50	2.12	8.10	15.9	-41	7.54
		100	1.93	8.01	14.6	-76	7.52
		150	1.93	7.95	14.3	-84	7.50
		200	2.00	7.86	14.5	-87	7.48
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey dispersion					
Odour:		slight hydrogen sulphide					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQBH08					
Date		30/07/14					
Time		11:18					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.40	4.81	20	1.34	4.73	16.9	-117	7.64
		40	1.14	6.16	16.2	-138	7.50
		60	1.10	6.46	15.9	-139	7.47
		80	0.84	6.51	15.9	-135	7.47
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		dark grey turbid dispersion					
Odour:		strong hydrogen sulphide					
Other Comments:		-					

Borehole Reference		SQBH09					
Date		29/07/14					
Time		16:11					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.61	13.36	50	1.90	>20	16.9	18	6.68
		100	1.56	>20	16.4	9	6.76
		150	1.54	>20	16.3	5	6.78
		200	1.36	>20	16.4	2	6.75
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		clear					
Odour:		slight tarry					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQBH11					
Date		29/07/14					
Time		16:00					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.95	3.92	20	2.00	10.37	17.2	-7	6.87
		40	1.95	10.20	15.4	-14	6.94
		60	1.86	10.18	15.1	-12	6.93
		80	1.82	10.19	15.1	-12	6.94
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey dispersion					
Odour:		tarry and hydrogen sulphide					
Other Comments:		-					

Borehole Reference		SQBH12					
Date		29/07/14					
Time		15:38					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.16	3.25						
Purge Equipment:		-					
Sample Equiment:		-					
Visual Observations of Purge Water:		-					
Odour:		-					
Other Comments:		no recovery using bailer					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQMBH02					
Date		30/07/14					
Time		07:50					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
16.78	20.23	30	3.60	0.89	13.1	7	8.17
		60	2.89	0.83	13.0	11	8.16
		90	2.63	0.82	13.0	18	8.08
		120	2.60	0.83	13.0	21	8.02
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey dispersion becoming clear					
Odour:		none					
Other Comments:		none					

Borehole Reference		SQMBH03 S					
Date		29/07/14					
Time		12:45					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
2.58	5.58	20	0.98	6.91	15.6	-92	7.15
		40	0.90	7.29	14.7	-122	7.18
		60	1.30	7.28	14.7	-133	7.18
		80	1.27	7.32	14.5	-140	7.19
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		grey brown turbid dispersion becoming clear					
Odour:		strong hydrogen sulphide					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQMBH03 D					
Date		29/07/14					
Time		13:21					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.19	16.86	50	1.62	18.54	14.3	-122	7.05
		100	1.05	19.05	13.8	-104	7.10
		150	0.94	19.24	13.9	-94	7.13
		200	1.06	19.55	13.9	-90	7.14
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid orange brown dispersion becoming clear					
Odour:		none					
Other Comments:		-					

Borehole Reference		SQMBH04 S					
Date		29/07/14					
Time		14:30					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
4.15	5.61	20	0.50	3.15	17.0	-83	7.62
		40	1.26	2.92	15.0	-97	7.58
		60	1.42	2.76	14.0	-95	7.56
		80	0.99	2.59	13.6	-98	7.57
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid orange brown dispersion becoming clearer					
Odour:		none					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQMBH04 D					
Date		29/07/14					
Time		14:36					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.55	16.58	50	1.60	5.33	13.9	-78	7.36
		100	1.40	5.38	13.8	-72	7.37
		150	1.23	5.39	13.9	-67	7.38
		200	1.76	5.46	13.9	-63	7.37
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid orange brown dispersion becoming clearer					
Odour:		none					
Other Comments:		-					

Borehole Reference		SQMBH05 S					
Date		29/07/14					
Time		14:56					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.37	5.52	20	1.62	2.74	15.6	-50	7.64
		40	1.44	2.92	14.5	-52	7.54
		60	1.17	2.84	14.6	-59	7.45
		80	1.20	2.82	14.6	-64	7.42
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		dark grey brown turbid dispersion					
Odour:		slight tarry					
Other Comments:		-					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SQMBH05 D					
Date		29/07/14					
Time		15:15					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
3.40	16.58	50	1.62	3.51	14.5	-60	7.29
		100	2.44	3.42	14.2	-53	7.30
		150	1.95	3.38	14.1	-49	7.30
		200	1.98	3.38	14.1	-48	7.30
Purge Equipment:		whale mega purger					
Sample Equiment:		whale mega purger					
Visual Observations of Purge Water:		turbid grey brown dispersion becoming clear					
Odour:		none					
Other Comments:		-					

Borehole Reference							
Date							
Time							
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
Purge Equipment:							
Sample Equiment:							
Visual Observations of Purge Water:							
Odour:							
Other Comments:							

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SW01					
Date		30/07/14					
Time		11:45					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	7.84	>20	22.4	-4	6.91
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

Borehole Reference		SW02					
Date		30/07/14					
Time		11:59					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	8.22	>20	23.3	-14	7.12
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

FILE NOTE

PROJECT	Barry Quays	JOB NUMBER	17633g
RECORDED BY	Linford Shacklady	DATE	30/07/14
REFERENCE	FN-17633g-20140730-LS		

Borehole Reference		SW03					
Date		30/07/14					
Time		12:25					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	9.01	>20	21.6	-11	7.28
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

Borehole Reference		SW04					
Date		30/07/14					
Time		13:00					
Depth to water (mbgl)	Depth to base (mbgl)	Litres purged	DO (mg/l)	EC (mS)	Temp (°C)	ORP (mV)	pH
-	-	-	9.40	>20	21.4	-10	7.37
Purge Equipment:		n/a					
Sample Equiment:		whale megapurger					
Visual Observations of Purge Water:		no purge - water clear					
Odour:		none					
Other Comments:		surface water sample from dock					

APPENDIX 7 ▪ CLEA Model Output

STEP 5: RESULTS

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		Ratio of ADE to relevant Health Criteria Value			Soil Assessment Criteria			Soil Saturation Limit	Pathway Contributions (%)										
		oral HCV	inhal HCV	Combined	oral HCV	inhal HCV	Combined		direct soil ingestion	sum of consumption of homegrown produce and attached soil	dermal contact (indoor)	dermal contact (outdoor)	inhalation of dust (indoor)	inhalation of dust (outdoor)	inhalation of vapour (indoor)	inhalation of vapour (outdoor)	oral background	inhalation background	Total
Number	Chemical	(dimensionless)	(dimensionless)	(dimensionless)	mg kg^{-1}	mg kg^{-1}	mg kg^{-1}	mg kg^{-1}	%	%	%	%	%	%	%	%	%	%	%
1	Aliphatics (>C6-C8)	0.00	1.00	1.00	NR	8.70E+06	8.70E+06	7.36E+02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
2	Aliphatics (>C8-C10)	0.00	1.00	1.00	NR	1.14E+06	1.14E+06	4.51E+02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
3	Aliphatics (>C10-C12)	0.00	1.00	1.00	NR	2.57E+06	2.57E+06	2.83E+02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
4	Aliphatics (>C12-C16)	0.00	1.00	1.00	NR	7.45E+06	7.45E+06	1.42E+02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
5	Aromatics (>EC10-EC12)	0.00	1.00	1.00	NR	1.62E+06	1.62E+06	2.15E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
6	Aromatics (>EC12-EC16)	0.00	1.00	1.00	NR	5.38E+06	5.38E+06	1.00E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
7	Benzo[a]pyrene	0.00	1.00	1.00	NR	5.21E+02	5.21E+02	5.46E+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
8	Naphthalene	0.00	1.00	1.00	NR	7.55E+04	7.55E+04	4.32E+02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.26	0.00	19.74	100.00
9	Benzene	0.00	1.00	1.00	NR	1.11E+04	1.11E+04	4.71E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
10	1,2-Dichloroethane	0.00	1.00	1.00	NR	1.27E+03	1.27E+03	8.42E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
11	Tetrachloromethane	0.00	1.00	1.00	NR	1.13E+04	1.13E+04	7.54E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100.00
12	Trichloroethene	0.00	1.00	1.00	NR	4.79E+04	4.79E+04	7.14E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
13	1,1,2 Trichloroethane	0.00	1.00	1.00	NR	1.28E+05	1.28E+05	1.80E+04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	98.75	0.00	1.25	100.00
14	1,2,4-Trimethylbenzene	0.00	1.00	1.00	NR	4.52E+03	4.52E+03	1.82E+01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
15	Cis 1,2 Dichloroethene	1.00	NR	NR	4.22E+04	NR	NR	1.29E+04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.19	9.81	0.00	100.00
16	Trans 1,2 Dichloroethene	0.00	1.00	1.00	NR	9.97E+04	9.97E+04	1.26E+04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	97.86	0.00	2.14	100.00
17	Styrene	0.00	1.00	1.00	NR	6.44E+06	6.44E+06	3.35E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.86	0.00	0.14	100.00
18	Chloroethene	0.00	1.00	1.00	NR	5.05E+02	5.05E+02	2.69E+03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100.00
19																			
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CLEA Software Version 1.06

Report generated	04-Sep-14
Report title	Barry South Quay - HHDQRA - outdoor vapour
Created by	Dr Lisa Horsley at IDOM Merebrook

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?	
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal
1	Aliphatics (>C6-C8)	NR	8.70E+06	8.70E+06	0.00	1.00	1.00	7.36E+02 (sol)	Yes	Yes
2	Aliphatics (>C8-C10)	NR	1.14E+06	1.14E+06	0.00	1.00	1.00	4.51E+02 (vap)	Yes	Yes
3	Aliphatics (>C10-C12)	NR	2.57E+06	2.57E+06	0.00	1.00	1.00	2.83E+02 (vap)	Yes	Yes
4	Aliphatics (>C12-C16)	NR	7.45E+06	7.45E+06	0.00	1.00	1.00	1.42E+02 (sol)	Yes	Yes
5	Aromatics (>EC10-EC12)	NR	1.62E+06	1.62E+06	0.00	1.00	1.00	2.15E+03 (sol)	Yes	Yes
6	Aromatics (>EC12-EC16)	NR	5.38E+06	5.38E+06	0.00	1.00	1.00	1.00E+03 (sol)	Yes	Yes
7	Benzo[a]pyrene	NR	5.21E+02	5.21E+02	0.00	1.00	1.00	5.46E+00 (vap)	No	No
8	Naphthalene	NR	7.55E+04	7.55E+04	0.00	1.00	1.00	4.32E+02 (sol)	No	No
9	Benzene	NR	1.11E+04	1.11E+04	0.00	1.00	1.00	4.71E+03 (sol)	No	No
10	1,2-Dichloroethane	NR	1.27E+03	1.27E+03	0.00	1.00	1.00	8.42E+03 (vap)	No	No
11	Tetrachloromethane	NR	1.13E+04	1.13E+04	0.00	1.00	1.00	7.54E+03 (vap)	No	Yes
12	Trichloroethene	NR	4.79E+04	4.79E+04	0.00	1.00	1.00	7.14E+03 (vap)	No	No
13	1,1,2 Trichloroethane	NR	1.28E+05	1.28E+05	0.00	1.00	1.00	1.80E+04 (vap)	No	No
14	1,2,4-Trimethylbenzene	NR	4.52E+03	4.52E+03	0.00	1.00	1.00	1.82E+01 (vap)	No	No
15	Cis 1,2 Dichloroethene	4.22E+04	NR	NR	1.00	NR	NR	1.29E+04 (sol)	No	No
16	Trans 1,2 Dichloroethene	NR	9.97E+04	9.97E+04	0.00	1.00	1.00	1.26E+04 (sol)	No	No
17	Styrene	NR	6.44E+06	6.44E+06	0.00	1.00	1.00	3.35E+03 (sol)	No	No
18	Chloroethene	NR	5.05E+02	5.05E+02	0.00	1.00	1.00	2.69E+03 (sol)	No	No
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Environment Agency

	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?	
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal
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Environment Agency

		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	Aliphatics (>C6-C8)	96.5	0.2	3.3	100.0	8.70E+06	1.73E+09	NA	NA	NA	NA	5.98E+01	0.00E+00	NA	NA	NA	NA	NA	NA
2	Aliphatics (>C8-C10)	99.3	0.0	0.6	100.0	1.14E+06	4.46E+07	NA	NA	NA	NA	3.47E+00	0.00E+00	NA	NA	NA	NA	NA	NA
3	Aliphatics (>C10-C12)	99.9	0.0	0.1	100.0	2.57E+06	1.98E+07	NA	NA	NA	NA	3.47E+00	0.00E+00	NA	NA	NA	NA	NA	NA
4	Aliphatics (>C12-C16)	100.0	0.0	0.0	100.0	7.45E+06	6.81E+06	NA	NA	NA	NA	3.47E+00	0.00E+00	NA	NA	NA	NA	NA	NA
5	Aromatics (>EC10-EC12)	99.7	0.3	0.0	100.0	1.62E+06	1.33E+06	NA	NA	NA	NA	7.17E-01	0.00E+00	NA	NA	NA	NA	NA	NA
6	Aromatics (>EC12-EC16)	99.8	0.2	0.0	100.0	5.38E+06	3.88E+05	NA	NA	NA	NA	7.17E-01	0.00E+00	NA	NA	NA	NA	NA	NA
7	Benzo[a]pyrene	100.0	0.0	0.0	100.0	5.21E+02	2.05E-04	NA	NA	NA	NA	1.67E-06	0.00E+00	NA	NA	NA	NA	NA	NA
8	Naphthalene	98.8	1.2	0.0	100.0	7.55E+04	2.20E+04	NA	NA	NA	NA	1.65E-02	0.00E+00	NA	NA	NA	NA	NA	NA
9	Benzene	89.0	10.3	0.7	100.0	1.11E+04	4.86E+05	NA	NA	NA	NA	3.35E-02	0.00E+00	NA	NA	NA	NA	NA	NA
10	1,2-Dichloroethane	71.5	28.1	0.4	100.0	1.27E+03	3.12E+04	NA	NA	NA	NA	2.87E-03	0.00E+00	NA	NA	NA	NA	NA	NA
11	Tetrachloromethane	95.9	3.1	1.1	100.0	1.13E+04	7.38E+05	NA	NA	NA	NA	3.90E-02	0.00E+00	NA	NA	NA	NA	NA	NA
12	Trichloroethene	94.2	5.2	0.6	100.0	4.79E+04	1.72E+06	NA	NA	NA	NA	1.24E-01	0.00E+00	NA	NA	NA	NA	NA	NA
13	1,1,2 Trichloroethane	93.1	6.8	0.1	100.0	1.28E+05	5.58E+05	NA	NA	NA	NA	1.14E-01	0.00E+00	NA	NA	NA	NA	NA	NA
14	1,2,4-Trimethylbenzene	86.3	0.9	12.9	100.0	4.52E+03	3.52E+06	NA	NA	NA	NA	4.78E-02	0.00E+00	NA	NA	NA	NA	NA	NA
15	Cis 1,2 Dichloroethene	83.3	16.0	0.7	100.0	4.22E+04	1.85E+06	NA	NA	NA	NA	1.29E-01	0.00E+00	NA	NA	NA	NA	NA	NA
16	Trans 1,2 Dichloroethene	87.4	11.4	1.2	100.0	9.97E+04	7.35E+06	NA	NA	NA	NA	3.98E-01	0.00E+00	NA	NA	NA	NA	NA	NA
17	Styrene	97.6	2.4	0.1	100.0	6.44E+06	2.97E+07	NA	NA	NA	NA	5.73E+00	0.00E+00	NA	NA	NA	NA	NA	NA
18	Chloroethene	59.3	28.0	12.7	100.0	5.05E+02	3.87E+05	NA	NA	NA	NA	7.17E-03	0.00E+00	NA	NA	NA	NA	NA	NA
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	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	Aliphatics (>C6-C8)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.50E+00	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
2	Aliphatics (>C8-C10)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-01	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
3	Aliphatics (>C10-C12)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-01	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
4	Aliphatics (>C12-C16)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-01	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
5	Aromatics (>EC10-EC12)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-02	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
6	Aromatics (>EC12-EC16)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-02	5.62E+95	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
7	Benzo[a]pyrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.00E-08	6.19E-06	3.64E-07	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
8	Naphthalene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.90E-04	3.94E-04	1.70E-04	0.00	0.00	0.00	0.00	0.00	80.26	0.00	19.74
9	Benzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-03	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
10	1,2-Dichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.20E-04	3.38E-05	1.21E-03	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
11	Tetrachloromethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.63E-03	1.13E-05	3.03E-03	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
12	Trichloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-03	5.63E-04	1.21E-02	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
13	1,1,2 Trichloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.79E-03	1.35E-05	6.06E-05	0.00	0.00	0.00	0.00	0.00	98.75	0.00	1.25
14	1,2,4-Trimethylbenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-03	0.00E+00	0.00E+00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
15	Cis 1,2 Dichloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.41E-03	2.25E-04	3.64E-04	0.00	0.00	0.00	0.00	0.00	90.19	9.81	0.00
16	Trans 1,2 Dichloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.66E-02	2.25E-04	3.64E-04	0.00	0.00	0.00	0.00	0.00	97.86	0.00	2.14
17	Styrene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.40E-01	5.63E-05	3.39E-04	0.00	0.00	0.00	0.00	0.00	99.86	0.00	0.14
18	Chloroethene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-04	5.63E-05	3.64E-03	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
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	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})		Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	Aliphatics (>C6-C8)	TDI	5000	TDI	5000	9.99E+99	9.99E+99	2.73E+01	1.00E-05	1.00E-09	3.58	4.13	0.1	0.5	10	1	1
2	Aliphatics (>C8-C10)	TDI	100	TDI	290	9.99E+99	9.99E+99	4.15E+01	1.00E-05	1.00E-09	4.48	5.22	0.1	0.5	10	1	1
3	Aliphatics (>C10-C12)	TDI	100	TDI	290	9.99E+99	9.99E+99	6.44E+01	1.00E-05	1.00E-09	5.38	6.3	0.1	0.5	10	1	1
4	Aliphatics (>C12-C16)	TDI	100	TDI	290	9.99E+99	9.99E+99	1.71E+02	1.00E-05	1.00E-09	6.73	7.94	0.1	0.5	10	1	1
5	Aromatics (>EC10-EC12)	TDI	40	TDI	60	9.99E+99	9.99E+99	7.22E-02	1.00E-05	1.00E-09	3.4	3.93	0.1	0.5	10	1	1
6	Aromatics (>EC12-EC16)	TDI	40	TDI	60	9.99E+99	9.99E+99	1.26E-02	1.00E-05	1.00E-09	3.7	4.29	0.1	0.5	10	1	1
7	Benzo[a]pyrene	ID	0.02	ID	0.00007	0.11	0.006	1.76E-06	4.38E-06	3.67E-10	5.11	6.18	0.13	0.5	1	1	1
8	Naphthalene	TDI	20	TDI	0.86	7	2.8	6.62E-03	6.52E-06	5.16E-10	2.81	3.34	0.13	0.5	1	1	1
9	Benzene	ID	0.29	ID	1.4	NR	NR	1.16E-01	8.77E-06	6.64E-10	1.83	2.13	0.1	0.5	10	1	1
10	1,2-Dichloroethane	ID	0.12	ID	0.12	0.6	20	2.38E-02	8.60E-06	6.74E-10	1.3	1.48	0.1	0.5	1	1	1
11	Tetrachloromethane	TDI	1.42	TDI	3.26	0.2	50	5.82E-01	7.69E-06	6.03E-10	2.39	2.83	0.1	0.5	1	1	1
12	Trichloroethene	ID	5.2	ID	5.2	10	200	1.87E-01	7.91E-06	6.23E-10	2.15	2.53	0.1	0.5	1	1	1
13	1,1,2 Trichloroethane	TDI	4	TDI	4.85	0.24	1	1.75E-02	7.58E-06	5.99E-10	2.03	2.38	0.1	0.5	1	1	1
14	1,2,4-Trimethylbenzene	TDI	500	TDI	2	0	0	2.50E+01	6.07E-06	7.92E-10	2.9	3.63	0.1	0.5	1	1	1
15	Cis 1,2 Dichloroethene	TDI	6	NR	0	4	6	7.46E-02	9.02E-06	7.08E-10	1.61	1.86	0.1	0.5	1	1	1
16	Trans 1,2 Dichloroethene	TDI	17	TDI	17	4	6	1.77E-01	9.09E-06	7.08E-10	1.78	2.08	0.1	0.5	1	1	1
17	Styrene	TDI	12	TDI	240	1	5.6	5.33E-02	7.19E-06	5.48E-10	2.51	2.98	0.1	0.5	1	1	1
18	Chloroethene	ID	0.014	ID	0.3	1	60	7.47E-01	1.11E-05	8.34E-10	1.22	1.38	0.1	0.5	1	1	1
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	Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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		Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility (mg L^{-1})	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
1	Aliphatics (>C6-C8)	1.32E+02	3.45E+03	5.37E+00	model	model	model	model	model	model
2	Aliphatics (>C8-C10)	1.05E+03	3.20E+02	4.27E-01	model	model	model	model	model	model
3	Aliphatics (>C10-C12)	8.35E+03	3.21E+01	3.39E-02	model	model	model	model	model	model
4	Aliphatics (>C12-C16)	1.87E+05	1.53E+00	7.59E-04	model	model	model	model	model	model
5	Aromatics (>EC10-EC12)	8.74E+01	3.21E+01	2.45E+01	model	model	model	model	model	model
6	Aromatics (>EC12-EC16)	1.74E+02	1.14E+00	5.75E+00	model	model	model	model	model	model
7	Benzo[a]pyrene	4.48E+03	2.00E-08	3.80E-03	model	model	model	model	model	model
8	Naphthalene	2.25E+01	2.31E+00	1.90E+01	model	model	model	model	model	model
9	Benzene	2.35E+00	6.24E+03	1.78E+03	model	model	model	0.00E+00	0.00E+00	model
10	1,2-Dichloroethane	6.94E-01	4.92E+03	8.68E+03	model	model	model	model	model	model
11	Tetrachloromethane	8.54E+00	7.53E+03	8.46E+02	model	model	model	model	model	model
12	Trichloroethene	4.92E+00	4.58E+03	1.37E+03	model	model	model	model	model	model
13	1,1,2 Trichloroethane	3.73E+00	1.39E+03	4.49E+03	Model	Model	Model	Model	Model	Model
14	1,2,4-Trimethylbenzene	2.76E+01	2.79E+02	5.70E+01	model	model	model	model	model	model
15	Cis 1,2 Dichloroethene	1.42E+00	1.37E+04	7.55E+03	Model	Model	Model	Model	Model	Model
16	Trans 1,2 Dichloroethene	2.10E+00	2.26E+04	5.25E+03	Model	Model	Model	Model	Model	Model
17	Styrene	1.13E+01	3.50E+02	2.90E+02	Model	Model	Model	Model	Model	Model
18	Chloroethene	5.78E-01	2.20E+05	2.76E+03	model	model	model	model	model	model
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	Soil-to-water partition coefficient ($cm^3\ g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg\ L^{-1}$)	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
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CLEA Software Version 1.06

Report generated 04/09/2014

Report title Barry South Quay - HHDQRA - outdoor vapour

Created by Dr Lisa Horsley at IDOM Merebrook

BASIC SETTINGS

Land Use Residential with homegrown produce

Building Small terraced house
Receptor Female (res) Start age class 1 End age class 6 Exposure Duration 6 years
Soil Sandy loam

Exposure Pathways

Direct soil and dust ingestion	✖	Dermal contact with indoor dust	✖	Inhalation of indoor dust	✖
Consumption of homegrown produce	✖	Dermal contact with soil	✖	Inhalation of soil dust	✖
Soil attached to homegrown produce	✖			Inhalation of indoor vapour	✖
				Inhalation of outdoor vapour	✓

Land Use Residential with homegrown produce

Age Class	Exposure Frequencies (days yr^{-1})						Occupation Periods (hr day^{-1})		Soil to skin adherence factors (mg cm^{2})		Direct soil ingestion rate (g day^{-1})
	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Indoors	Outdoors	Indoor	Outdoor	
1	180	180	180	180	365	365	23.0	1.0	0.06	1.00	0.10
2	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10
3	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10
4	365	365	365	365	365	365	23.0	1.0	0.06	1.00	0.10
5	365	365	365	365	365	365	19.0	1.0	0.06	1.00	0.10
6	365	365	365	365	365	365	19.0	1.0	0.06	1.00	0.10
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00

Receptor Female (res)

Age Class	Body weight (kg)	Body height (m)	Inhalation rate (m^3 day^{-1})	Max exposed skin factor: Indoor (m^2 m^{-2})	Max exposed skin factor: Outdoor (m^2 m^{-2})	Total skin area (m^2)	Consumption rates (g FW kg^{-1} BW day^{-1}): Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	5.60	0.7	8.5	0.32	0.26	3.43E-01	7.12	10.69	16.03	1.83	2.23	3.82
2	9.80	0.8	13.3	0.33	0.26	4.84E-01	6.85	3.30	5.46	3.96	0.54	11.96
3	12.70	0.9	12.7	0.32	0.25	5.82E-01	6.85	3.30	5.46	3.96	0.54	11.96
4	15.10	0.9	12.2	0.35	0.28	6.36E-01	6.85	3.30	5.46	3.96	0.54	11.96
5	16.90	1.0	12.2	0.35	0.28	7.04E-01	3.74	1.77	3.38	1.85	0.16	4.26
6	19.70	1.1	12.2	0.33	0.26	7.94E-01	3.74	1.77	3.38	1.85	0.16	4.26
7	22.10	1.2	12.4	0.22	0.15	8.73E-01	3.74	1.77	3.38	1.85	0.16	4.26
8	25.30	1.2	12.4	0.22	0.15	9.36E-01	3.74	1.77	3.38	1.85	0.16	4.26
9	27.50	1.3	12.4	0.22	0.15	1.01E+00	3.74	1.77	3.38	1.85	0.16	4.26
10	31.40	1.3	12.4	0.22	0.15	1.08E+00	3.74	1.77	3.38	1.85	0.16	4.26
11	35.70	1.4	12.4	0.22	0.14	1.19E+00	3.74	1.77	3.38	1.85	0.16	4.26
12	41.30	1.4	13.4	0.22	0.14	1.29E+00	3.74	1.77	3.38	1.85	0.16	4.26
13	47.20	1.5	13.4	0.22	0.14	1.42E+00	3.74	1.77	3.38	1.85	0.16	4.26
14	51.20	1.6	13.4	0.22	0.14	1.52E+00	3.74	1.77	3.38	1.85	0.16	4.26
15	56.70	1.6	13.4	0.21	0.14	1.60E+00	3.74	1.77	3.38	1.85	0.16	4.26
16	59.00	1.6	13.4	0.21	0.14	1.63E+00	3.74	1.77	3.38	1.85	0.16	4.26
17	70.00	1.6	14.8	0.33	0.27	1.78E+00	2.94	1.40	1.79	1.61	0.22	2.97
18	70.90	1.6	12.0	0.33	0.27	1.80E+00	2.94	1.40	1.79	1.61	0.22	2.97

Building Small terraced house

Soil Sandy loam

Building footprint (m^2)	2.80E+01
Living space air exchange rate (hr^{-1})	5.00E-01
Living space height (above ground, m)	4.80E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm^2)	4.23E+02
Dust loading factor (µg m^{-3})	5.00E+01

Porosity, Total (cm^3 cm^{-3})	5.30E-01
Porosity, Air-Filled (cm^3 cm^{-3})	2.00E-01
Porosity, Water-Filled (cm^3 cm^{-3})	3.30E-01
Residual soil water content (cm^3 cm^{-3})	1.20E-01
Saturated hydraulic conductivity (cm s^{-1})	3.56E-03
van Genuchten shape parameter *m* (dimensionless)	3.20E-01
Bulk density (g cm^{-3})	1.21E+00
Threshold value of wind speed at 10m (m s^{-1})	7.20E+00
Empirical function (F_x) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02
Soil pH	7.00E+00
Soil Organic Matter content (%)	6.00E+00
Fraction of organic carbon (g g^{-1})	3.48E-02
Effective total fluid saturation (unitless)	5.12E-01
Intrinsic soil permeability (cm^2)	4.75E-08
Relative soil air permeability (unitless)	6.42E-01
Effective air permeability (cm^2)	3.05E-08

Soil - Vapour Model

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($cm^3\ s^{-1}$)	2.50E+01
Building ventilation rate ($cm^3\ s^{-1}$)	1.87E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m ($m\ s^{-1}$)	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($m^2\ m^{-2}$)	0.75

* Air dispersion factor in $g\ m^{-2}\ s^{-1}$ per $kg\ m^{-3}$

Soil - Plant Model

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
		Average	High		
	$g\ DW\ g^{-1}\ FW$	dimensionless		$g\ g^{-1}\ DW$	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type Average

AN idom GROUP COMPANY

Idom Merebrook Ltd East Mill, Bridgefoot, Belper, Derbyshire, DE56 2UA
t +44 (0)1773 829 988 **f** +44 (0)1773 829 393 **e** consulting@merebrook.co.uk **merebrook.co.uk** **idom.com**
Registered in England No. 02740216 Registered office: Belper
offices London Kent Derby Cardiff Manchester Moray