Client Name: Waterman Infrastructure & Environment Limited **VOC Report :** **Solid**
Reference: WIE 13235
Location: Phoenix St
Contact: Ben Greenfield
JE Job No.: 16/15353

J E Sample No.	709-711	727-729	736-738	754-756	763-765	792-794	813-815	825-827	831-833				
Sample ID	BH14	BH14	BH14	BH19	BH19	BH19	BH21	BH21	BH21				
Depth	1.5	4.5	7	0.50	2.00	4.5	1.5	3.5	5.0	Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	21/11/2016	21/11/2016	21/11/2016	23/11/2016	23/11/2016	30/11/2016	25/11/2016 10:00	29/11/2016 09:00	29/11/2016 10:00				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	22	22	22	24	24	25	25	25	25				
Date of Receipt	23/11/2016	23/11/2016	23/11/2016	25/11/2016	25/11/2016	01/12/2016	01/12/2016	01/12/2016	01/12/2016				
VOC MS													
Dichlorodifluoromethane	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
Chloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Vinyl Chloride	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15_A/PM10
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	mg/kg	TM15/PM10
Chloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
Trichlorofluoromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006		<0.006	mg/kg	TM15/PM10
Dichloromethane (DCM) #	-	-	-	-	-	-	-	-	-		<0.007	mg/kg	TM15/PM10
Dichloromethane (DCM) #	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	<0.03		<0.03	mg/kg	TM15/PM10
trans-1-2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1-Dichloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
cis-1-2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
2,2-Dichloropropane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
Bromochloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Chloroform #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1,1-Trichloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1-Dichloropropene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Carbon tetrachloride #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,2-Dichloroethane #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
Benzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Trichloroethene (TCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,2-Dichloropropane #	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006		<0.006	mg/kg	TM15/PM10
Dibromomethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Bromodichloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
cis-1-3-Dichloropropene	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
Toluene #	0.008	0.010	<0.003	<0.003	0.004	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
trans-1-3-Dichloropropene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1,2-Trichloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Tetrachloroethene (PCE) #	0.007	<0.003	<0.003	<0.003	0.007	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,3-Dichloropropane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Dibromochloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,2-Dibromoethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Chlorobenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1,1,2-Tetrachloroethane	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Ethylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
p/m-Xylene #	0.007	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM15/PM10
o-Xylene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Styrene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15_A/PM10
Bromoform	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Isopropylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
Bromobenzene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/kg	TM15/PM10
1,2,3-Trichloropropane #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
Propylbenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
2-Chlorotoluene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
4-Chlorotoluene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/kg	TM15/PM10
tert-Butylbenzene #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006		<0.006	mg/kg	TM15/PM10
sec-Butylbenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
4-Isopropyltoluene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,3-Dichlorobenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,4-Dichlorobenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
n-Butylbenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,2-Dichlorobenzene #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007		<0.007	mg/kg	TM15/PM10
Hexachlorobutadiene	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/kg	TM15/PM10
Naphthalene	0.052	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027		<0.027	mg/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007		<0.007	mg/kg	TM15/PM10
Surrogate Recovery Toluene D8	93	91	97	105	101	102	97	94	98		<0	%	TM15/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: WIE 13235
Location: Phoenix St
Contact: Ben Greenfield
JE Job No.: 16/15353

VOC Report : **Solid**

J E Sample No.	709-711	727-729	736-738	754-756	763-765	792-794	813-815	825-827	831-833				
Sample ID	BH14	BH14	BH14	BH19	BH19	BH19	BH21	BH21	BH21				
Depth	1.5	4.5	7	0.50	2.00	4.5	1.5	3.5	5.0		Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	21/11/2016	21/11/2016	21/11/2016	23/11/2016	23/11/2016	30/11/2016	25/11/2016 10:00	29/11/2016 09:00	29/11/2016 10:00				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	22	22	22	24	24	25	25	25	25				
Date of Receipt	23/11/2016	23/11/2016	23/11/2016	25/11/2016	25/11/2016	01/12/2016	01/12/2016	01/12/2016	01/12/2016		LOD/LOR	Units	Method No.
VOC MS Continued													
Surrogate Recovery 4-Bromofluorobenzene	77	76	97	92	84	119	77	87	109		<0	%	TM15/PM10

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	23.1
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	81.2
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**54**			
Client Sample No	**BH12**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.80**			
Sample Date	**12/10/2016**			
Batch No	**3**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.62	3	5	6
Loss on Ignition (%)	4.9	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	1.33	100	-	-
pH (pH Units)	9.34	-	>6	-
ANC to pH 7 (mol/kg)	0.13	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.38	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0291	0.291	0.5	2	25
Barium	0.004	0.04	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0045	0.045	0.5	10	70
Copper	0.011	0.11	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.004	0.04	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	0.005	<0.05	0.5	10	50
Antimony	0.010	0.10	0.06	0.7	5
Selenium	0.006	0.06	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	1.7	17	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	17.03	170.3	1000	20000	50000
Total Dissolved Solids	115	1150	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	4	40	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	34.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	74.7
Particle Size <4mm =	>95%		

JEFL Job No	**16/15353**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**81**			
Client Sample No	**TP10**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**2.50**			
Sample Date	**12/10/2016**			
Batch No	**3**			
Solid Waste Analysis				
Total Organic Carbon (%)	12.08	3	5	6
Loss on Ignition (%)	16.4	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	7.51	-	>6	-
ANC to pH 7 (mol/kg)	0.04	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	1.80	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0182	0.182	0.5	2	25
Barium	0.037	0.37	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.182	1.82	0.5	10	30
Nickel	0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.121	1.21	0.06	0.7	5
Selenium	0.005	0.05	0.1	0.5	7
Zinc	0.004	0.04	4	50	200
Chloride	25.3	253	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	29.59	295.8	1000	20000	50000
Total Dissolved Solids	193	1929	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	8	80	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	27.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	78.3
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**186**			
Client Sample No	**TP02**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**			
Sample Date	**13/10/2016**			
Batch No	**5**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.14	3	5	6
Loss on Ignition (%)	3.3	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	8.88	-	>6	-
ANC to pH 7 (mol/kg)	0.18	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.28	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0086	0.086	0.5	2	25
Barium	<0.003	<0.03	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0016	0.016	0.5	10	70
Copper	0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.007	0.07	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	0.005	<0.05	0.5	10	50
Antimony	0.057	0.57	0.06	0.7	5
Selenium	0.005	0.05	0.1	0.5	7
Zinc	0.003	<0.03	4	50	200
Chloride	1.1	11	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	82.49	824.8	1000	20000	50000
Total Dissolved Solids	205	2050	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	19.6
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	83.6
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**243**			
Client Sample No	**TP01**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**			
Sample Date	**14/10/2016**			
Batch No	**7**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.79	3	5	6
Loss on Ignition (%)	4.1	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	0.042	1	-	-
Mineral Oil (mg/kg)	97	500	-	-
PAH Sum of 17(mg/kg)	2.73	100	-	-
pH (pH Units)	11.81	-	>6	-
ANC to pH 7 (mol/kg)	0.62	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.69	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.078	0.78	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0160	0.160	0.5	10	70
Copper	0.008	0.08	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.003	<0.03	4	50	200
Chloride	4.8	48	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	24.18	241.7	1000	20000	50000
Total Dissolved Solids	289	2889	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	4	40	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	10.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	90.3
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**294**			
Client Sample No	**TP18**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.60**			
Sample Date	**19/10/2016**			
Batch No	**9**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.93	3	5	6
Loss on Ignition (%)	4.0	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	152	500	-	-
PAH Sum of 17(mg/kg)	394.26	100	-	-
pH (pH Units)	8.26	-	>6	-
ANC to pH 7 (mol/kg)	0.05	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	1.33	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0102	0.102	0.5	2	25
Barium	0.004	0.04	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0036	0.036	0.5	10	70
Copper	0.015	0.15	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.005	0.05	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.006	0.06	4	50	200
Chloride	0.7	7	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	5.92	59.2	1000	20000	50000
Total Dissolved Solids	88	880	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	27.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	78.8
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**559**			
Client Sample No	**BH15B**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**1.50**			
Sample Date	**16/11/2016**			
Batch No	**18**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.60	3	5	6
Loss on Ignition (%)	5.3	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	14.83	100	-	-
pH (pH Units)	7.94	-	>6	-
ANC to pH 7 (mol/kg)	0.04	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.28	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0032	0.032	0.5	2	25
Barium	0.010	0.10	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.004	0.04	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.005	0.05	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.004	0.04	4	50	200
Chloride	<0.3	<3	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	752.13	7523.8	1000	20000	50000
Total Dissolved Solids	586	5862	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	2	20	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	28.1
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	78.1
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**571**			
Client Sample No	**BH15B**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**3.50**			
Sample Date	**16/11/2016**			
Batch No	**18**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.87	3	5	6
Loss on Ignition (%)	8.1	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	7.88	-	>6	-
ANC to pH 7 (mol/kg)	<0.03	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.53	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.014	0.14	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.043	0.43	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.003	0.03	4	50	200
Chloride	0.6	6	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	140.52	1405.7	1000	20000	50000
Total Dissolved Solids	214	2141	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	7	70	500	800	1000

All solid results are expressed on a dry weight basis unless stated otherwise.

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	20.2
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	83.2
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**656**			
Client Sample No	**BH12**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**1.50**			
Sample Date	**18/11/2016**			
Batch No	**20**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.17	3	5	6
Loss on Ignition (%)	2.4	-	-	10
Sum of BTEX (mg/kg)	0.034	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	1.05	100	-	-
pH (pH Units)	9.61	-	>6	-
ANC to pH 7 (mol/kg)	0.11	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.13	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0271	0.271	0.5	2	25
Barium	<0.003	<0.03	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0042	0.042	0.5	10	70
Copper	0.011	0.11	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.003	0.03	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	0.007	0.07	0.5	10	50
Antimony	0.021	0.21	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.003	0.03	4	50	200
Chloride	0.9	9	800	15000	25000
Fluoride	<0.6	<6	10	150	500
Sulphate as SO4	7.00	70.0	1000	20000	50000
Total Dissolved Solids	118	1180	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	31.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	76.3
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**674**			
Client Sample No	**BH12**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**4.50**			
Sample Date	**18/11/2016**			
Batch No	**20**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.01	3	5	6
Loss on Ignition (%)	4.3	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	<0.64	100	-	-
pH (pH Units)	8.54	-	>6	-
ANC to pH 7 (mol/kg)	0.09	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.97	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0051	0.051	0.5	2	25
Barium	0.008	0.08	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	0.008	0.08	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.008	0.08	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	0.007	0.07	0.5	10	50
Antimony	0.007	0.07	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.003	<0.03	4	50	200
Chloride	1.1	11	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	6.37	63.7	1000	20000	50000
Total Dissolved Solids	169	1690	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	4	40	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	31.8
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	75.9
Particle Size <4mm =	>95%		

JEFL Job No	**16/15353**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**711**			
Client Sample No	**BH14**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**1.5**			
Sample Date	**21/11/2016**			
Batch No	**22**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.64	3	5	6
Loss on Ignition (%)	5.2	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	75	500	-	-
PAH Sum of 17(mg/kg)	295.35	100	-	-
pH (pH Units)	8.44	-	>6	-
ANC to pH 7 (mol/kg)	0.10	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.28	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.102	1.02	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	0.083	0.83	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.108	1.08	4	50	200
Chloride	2.2	22	800	15000	25000
Fluoride	0.8	8	10	150	500
Sulphate as SO4	161.82	1617.5	1000	20000	50000
Total Dissolved Solids	420	4198	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	2	<20	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	33.4
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	75.0
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**729**			
Client Sample No	**BH14**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**4.5**			
Sample Date	**21/11/2016**			
Batch No	**22**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.98	3	5	6
Loss on Ignition (%)	2.6	-	-	10
Sum of BTEX (mg/kg)	0.018	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	112	500	-	-
PAH Sum of 17(mg/kg)	8.64	100	-	-
pH (pH Units)	9.08	-	>6	-
ANC to pH 7 (mol/kg)	0.04	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.08	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.012	0.12	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.097	0.97	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.007	0.07	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.006	0.06	4	50	200
Chloride	3.9	39	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	40.30	403.0	1000	20000	50000
Total Dissolved Solids	153	1530	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	11	110	500	800	1000

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	22.8
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	81.4
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/15353**			
Sample No	**756**			
Client Sample No	**BH19**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**			
Sample Date	**23/11/2016**			
Batch No	**24**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.86	3	5	6
Loss on Ignition (%)	3.2	-	-	10
Sum of BTEX (mg/kg)	<0.017	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	59	500	-	-
PAH Sum of 17(mg/kg)	4.81	100	-	-
pH (pH Units)	10.39	-	>6	-
ANC to pH 7 (mol/kg)	0.23	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.09	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0029	0.029	0.5	2	25
Barium	<0.003	<0.03	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0281	0.281	0.5	10	70
Copper	0.017	0.17	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.006	0.06	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.015	0.15	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	0.8	8	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	124.48	1244.1	1000	20000	50000
Total Dissolved Solids	378	3778	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

Client Name: Waterman Infrastructure & Environment Limited **Matrix : Solid**

Reference: WIE 13235

Location: Phoenix St

Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
16/15353	2	TP04	0.50	28-30	PAH's, lube oil and tarmac/bitumen
16/15353	3	BH21	0.00-0.50	55-56	PAHs/tarmac-bitumen
16/15353	3	TP7	0.50	88-90	PAHs/lube oil/possible tarmac/bitumen
16/15353	3	TP8	0.40	100-102	PAHs/tarmac-bitumen
16/15353	9	TP21	0.60	310-312	PAH's and possible tarmac/bitumen

Client Name: Waterman Infrastructure & Environment Limited
Reference: WIE 13235
Location: Phoenix St
Contact: Ben Greenfield

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/15353	1	WS18	0.5	5	12/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					12/10/2016	**Asbestos Fibres**	NAD
					12/10/2016	**Asbestos Fibres (2)**	NAD
					12/10/2016	**Asbestos ACM**	NAD
					12/10/2016	**Asbestos ACM (2)**	NAD
					12/10/2016	**Asbestos Type**	NAD
					12/10/2016	**Asbestos Type (2)**	NAD
					12/10/2016	**Asbestos Level Screen**	NAD
16/15353	1	WS18	1.4	11	12/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					12/10/2016	**Asbestos Fibres**	NAD
					12/10/2016	**Asbestos Fibres (2)**	NAD
					12/10/2016	**Asbestos ACM**	NAD
					12/10/2016	**Asbestos ACM (2)**	NAD
					12/10/2016	**Asbestos Type**	NAD
					12/10/2016	**Asbestos Type (2)**	NAD
					12/10/2016	**Asbestos Level Screen**	NAD
16/15353	2	TP04	0.50	29	26/10/2016	**General Description (Bulk Analysis)**	soil/stones
					26/10/2016	**Asbestos Fibres**	Fibre Bundles
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos Type**	Chrysotile
					26/10/2016	**Asbestos Level Screen**	<0.1%
					31/10/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	2	TP04	1.00	32	26/10/2016	**General Description (Bulk Analysis)**	soil/stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	BH12	0.80	53	20/10/2016	**Mass of Dry Sample**	52.0 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	NAD

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16/15353	3	BH12	0.80	53	25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	BH21	0.00-0.50	56	20/10/2016	**Mass of Dry Sample**	52.7 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Amosite
					25/10/2016	**Asbestos Level Screen**	<0.1%
					31/10/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	3	BH15	0.00-0.50	62	20/10/2016	**Mass of Dry Sample**	52.4 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Amosite
					25/10/2016	**Asbestos Level Screen**	<0.1%
					31/10/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	3	TP10	0.50	68	25/10/2016	**General Description (Bulk Analysis)**	soil-stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	Asbestos Cement Debris
					25/10/2016	**Asbestos Type**	Chrysotile
					25/10/2016	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					31/10/2016	**Asbestos Gravimetric Quantification**	0.005 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	0.005 (mass %)
16/15353	3	TP10	1.50	74	25/10/2016	**General Description (Bulk Analysis)**	soil-stones
					25/10/2016	**Asbestos Fibres**	NAD
					25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	TP10	2.50	80	25/10/2016	**General Description (Bulk Analysis)**	soil-stones
					25/10/2016	**Asbestos Fibres**	NAD
					25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD

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16/15353	3	TP7	0.50	89	25/10/2016	**General Description (Bulk Analysis)**	soil-stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Chrysotile
					25/10/2016	**Asbestos Level Screen**	<0.1%
					31/10/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	3	TP7	2.00	98	20/10/2016	**Mass of Dry Sample**	42.5 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	NAD
					25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	TP8	0.40	101	27/10/2016	**General Description (Bulk Analysis)**	soil/stones
					27/10/2016	**Asbestos Fibres**	Fibre Bundles
					27/10/2016	**Asbestos ACM**	NAD
					27/10/2016	**Asbestos Type**	Chrysotile
					27/10/2016	**Asbestos Level Screen**	<0.1%
					31/10/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					31/10/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					31/10/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	3	WS16	0.20	119	20/10/2016	**Mass of Dry Sample**	51.9 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	NAD
					25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	WS16	1.70	125	27/10/2016	**General Description (Bulk Analysis)**	soil/stones
					27/10/2016	**Asbestos Fibres**	NAD
					27/10/2016	**Asbestos Fibres (2)**	NAD
					27/10/2016	**Asbestos ACM**	NAD
					27/10/2016	**Asbestos ACM (2)**	NAD
					27/10/2016	**Asbestos Type**	NAD
					27/10/2016	**Asbestos Type (2)**	NAD
					27/10/2016	**Asbestos Level Screen**	NAD
16/15353	3	WS16	2.80	131	27/10/2016	**General Description (Bulk Analysis)**	soil/stones
					27/10/2016	**Asbestos Fibres**	NAD
					27/10/2016	**Asbestos Fibres (2)**	NAD
					27/10/2016	**Asbestos ACM**	NAD
					27/10/2016	**Asbestos ACM (2)**	NAD
					27/10/2016	**Asbestos Type**	NAD

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16/15353	3	WS16	2.80	131	27/10/2016	**Asbestos Type (2)**	NAD
					27/10/2016	**Asbestos Level Screen**	NAD
16/15353	4	TP5	0.50	143	26/10/2016	**General Description (Bulk Analysis)**	soil/stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	4	TP6	1.00	167	26/10/2016	**General Description (Bulk Analysis)**	soil/stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	4	TP6	2.50	176	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	5	TP02	0.50	185	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	5	TP02	2.00	194	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	6	BH22	3.00	221	21/10/2016	**Mass of Dry Sample**	47.1 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil-stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Chrysotile

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16/15353	6	BH22	3.00	221	25/10/2016	**Asbestos Level Screen**	<0.1%
					02/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					02/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					02/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	7	TP01	0.50	242	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	7	TP03	0.50	263	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones/Tile
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	7	TP03	1.50	269	26/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					26/10/2016	**Asbestos Fibres**	NAD
					26/10/2016	**Asbestos Fibres (2)**	NAD
					26/10/2016	**Asbestos ACM**	NAD
					26/10/2016	**Asbestos ACM (2)**	NAD
					26/10/2016	**Asbestos Type**	NAD
					26/10/2016	**Asbestos Type (2)**	NAD
					26/10/2016	**Asbestos Level Screen**	NAD
16/15353	9	TP18	0.60	293	21/10/2016	**Mass of Dry Sample**	46.9 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Chrysotile
					25/10/2016	**Asbestos Level Screen**	<0.1%
					03/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					03/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					03/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	9	TP19	0.40	299	21/10/2016	**Mass of Dry Sample**	51.1 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Chrysotile
					25/10/2016	**Asbestos Level Screen**	<0.1%
					03/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					03/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					03/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)

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16/15353	9	TP20	0.80	305	21/10/2016	**Mass of Dry Sample**	49.3 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Amosite
					25/10/2016	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					03/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					03/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					03/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	9	TP21	0.60	311	21/10/2016	**Mass of Dry Sample**	49.2 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Amosite
					25/10/2016	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					03/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					03/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					03/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	9	TP9	0.50	338	21/10/2016	**Mass of Dry Sample**	49.0 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	Fibre Bundles
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos Type**	Amosite
					25/10/2016	**Asbestos Level Screen**	<0.1%
					03/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					03/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					03/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	9	TP9	3.00	353	21/10/2016	**Mass of Dry Sample**	45.2 (g)
					25/10/2016	**General Description (Bulk Analysis)**	soil/stones
					25/10/2016	**Asbestos Fibres**	NAD
					25/10/2016	**Asbestos Fibres (2)**	NAD
					25/10/2016	**Asbestos ACM**	NAD
					25/10/2016	**Asbestos ACM (2)**	NAD
					25/10/2016	**Asbestos Type**	NAD
					25/10/2016	**Asbestos Type (2)**	NAD
					25/10/2016	**Asbestos Level Screen**	NAD
16/15353	11	BH13	4.50	386	31/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					31/10/2016	**Asbestos Fibres**	NAD
					31/10/2016	**Asbestos Fibres (2)**	NAD
					31/10/2016	**Asbestos ACM**	NAD
					31/10/2016	**Asbestos ACM (2)**	NAD
					31/10/2016	**Asbestos Type**	NAD
					31/10/2016	**Asbestos Type (2)**	NAD
					31/10/2016	**Asbestos Level Screen**	NAD
16/15353	11	BH13	0.50	401	31/10/2016	**General Description (Bulk Analysis)**	Soil/Stones
					31/10/2016	**Asbestos Fibres**	NAD
					31/10/2016	**Asbestos Fibres (2)**	NAD
					31/10/2016	**Asbestos ACM**	NAD

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16/15353	11	BH13	0.50	401	31/10/2016	**Asbestos ACM (2)**	NAD
					31/10/2016	**Asbestos Type**	NAD
					31/10/2016	**Asbestos Type (2)**	NAD
					31/10/2016	**Asbestos Level Screen**	NAD
16/15353	14	BH23	1.5	433	15/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					15/11/2016	**Asbestos Fibres**	NAD
					15/11/2016	**Asbestos Fibres (2)**	NAD
					15/11/2016	**Asbestos ACM**	NAD
					15/11/2016	**Asbestos ACM (2)**	NAD
					15/11/2016	**Asbestos Type**	NAD
					15/11/2016	**Asbestos Type (2)**	NAD
					15/11/2016	**Asbestos Level Screen**	NAD
16/15353	14	BH23	4.0	448	15/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					15/11/2016	**Asbestos Fibres**	Fibre Bundles
					15/11/2016	**Asbestos ACM**	NAD
					15/11/2016	**Asbestos Type**	Chrysotile
					15/11/2016	**Asbestos Level Screen**	<0.1%
					17/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					17/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					17/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	15	BH20	4.50	480	15/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					15/11/2016	**Asbestos Fibres**	NAD
					15/11/2016	**Asbestos Fibres (2)**	NAD
					15/11/2016	**Asbestos ACM**	NAD
					15/11/2016	**Asbestos ACM (2)**	NAD
					15/11/2016	**Asbestos Type**	NAD
					15/11/2016	**Asbestos Type (2)**	NAD
					15/11/2016	**Asbestos Level Screen**	NAD
16/15353	16	BH15	2.0	498	21/11/2016	**General Description (Bulk Analysis)**	soil-stones
					21/11/2016	**Asbestos Fibres**	Fibre Bundles
					21/11/2016	**Asbestos ACM**	NAD
					21/11/2016	**Asbestos Type**	Chrysotile
					21/11/2016	**Asbestos Level Screen**	<0.1%
					26/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					26/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					26/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	17	BH11	2.0	525	25/11/2016	**General Description (Bulk Analysis)**	Soil/Stone/Brick
					25/11/2016	**Asbestos Fibres**	Fibre Bundles
					25/11/2016	**Asbestos ACM**	NAD
					25/11/2016	**Asbestos Type**	Chrysotile
					25/11/2016	**Asbestos Level Screen**	<0.1%
					26/11/2016	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					26/11/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					26/11/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	18	BH15B	1.50	558	29/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					29/11/2016	**Asbestos Fibres**	NAD
					29/11/2016	**Asbestos Fibres (2)**	NAD

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J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/15353	18	BH15B	1.50	558	29/11/2016	**Asbestos ACM**	NAD
					29/11/2016	**Asbestos ACM (2)**	NAD
					29/11/2016	**Asbestos Type**	NAD
					29/11/2016	**Asbestos Type (2)**	NAD
					29/11/2016	**Asbestos Level Screen**	NAD
16/15353	18	BH15B	3.50	570	29/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					29/11/2016	**Asbestos Fibres**	NAD
					29/11/2016	**Asbestos Fibres (2)**	NAD
					29/11/2016	**Asbestos ACM**	NAD
					29/11/2016	**Asbestos ACM (2)**	NAD
					29/11/2016	**Asbestos Type**	NAD
					29/11/2016	**Asbestos Type (2)**	NAD
					29/11/2016	**Asbestos Level Screen**	NAD
16/15353	18	BH15B	6.00	582	29/11/2016	**General Description (Bulk Analysis)**	Soil/Stones
					29/11/2016	**Asbestos Fibres**	NAD
					29/11/2016	**Asbestos Fibres (2)**	NAD
					29/11/2016	**Asbestos ACM**	NAD
					29/11/2016	**Asbestos ACM (2)**	NAD
					29/11/2016	**Asbestos Type**	NAD
					29/11/2016	**Asbestos Type (2)**	NAD
					29/11/2016	**Asbestos Level Screen**	NAD
16/15353	20	BH12	1.50	655	01/12/2016	**General Description (Bulk Analysis)**	soil/stones
					01/12/2016	**Asbestos Fibres**	NAD
					01/12/2016	**Asbestos Fibres (2)**	NAD
					01/12/2016	**Asbestos ACM**	NAD
					01/12/2016	**Asbestos ACM (2)**	NAD
					01/12/2016	**Asbestos Type**	NAD
					01/12/2016	**Asbestos Type (2)**	NAD
					01/12/2016	**Asbestos Level Screen**	NAD
16/15353	20	BH12	4.50	673	01/12/2016	**General Description (Bulk Analysis)**	soil/stones
					01/12/2016	**Asbestos Fibres**	NAD
					01/12/2016	**Asbestos Fibres (2)**	NAD
					01/12/2016	**Asbestos ACM**	NAD
					01/12/2016	**Asbestos ACM (2)**	NAD
					01/12/2016	**Asbestos Type**	NAD
					01/12/2016	**Asbestos Type (2)**	NAD
					01/12/2016	**Asbestos Level Screen**	NAD
16/15353	20	BH12	8.00	685	01/12/2016	**General Description (Bulk Analysis)**	soil/stones
					01/12/2016	**Asbestos Fibres**	NAD
					01/12/2016	**Asbestos Fibres (2)**	NAD
					01/12/2016	**Asbestos ACM**	NAD
					01/12/2016	**Asbestos ACM (2)**	NAD
					01/12/2016	**Asbestos Type**	NAD
					01/12/2016	**Asbestos Type (2)**	NAD
					01/12/2016	**Asbestos Level Screen**	NAD
16/15353	22	BH14	1.5	710	05/12/2016	**General Description (Bulk Analysis)**	soil-stones
					05/12/2016	**Asbestos Fibres**	Fibre Bundles

Client Name: Waterman Infrastructure & Environment Limited
Reference: WIE 13235
Location: Phoenix St
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/15353	22	BH14	1.5	710	05/12/2016	**Asbestos ACM**	NAD
					05/12/2016	**Asbestos Type**	Chrysotile
					05/12/2016	**Asbestos Level Screen**	<0.1%
					06/12/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					06/12/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	22	BH14	4.5	728	01/12/2016	**General Description (Bulk Analysis)**	soil/stones
					01/12/2016	**Asbestos Fibres**	NAD
					01/12/2016	**Asbestos Fibres (2)**	NAD
					01/12/2016	**Asbestos ACM**	NAD
					01/12/2016	**Asbestos ACM (2)**	NAD
					01/12/2016	**Asbestos Type**	NAD
					01/12/2016	**Asbestos Type (2)**	NAD
					01/12/2016	**Asbestos Level Screen**	NAD
16/15353	24	BH19	0.50	755	06/12/2016	**General Description (Bulk Analysis)**	soil/stones
					06/12/2016	**Asbestos Fibres**	Fibre Bundles
					06/12/2016	**Asbestos ACM**	NAD
					06/12/2016	**Asbestos Type**	Chrysotile
					06/12/2016	**Asbestos Level Screen**	<0.1%
					08/12/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					08/12/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	24	BH19	2.00	764	06/12/2016	**General Description (Bulk Analysis)**	soil/stones
					06/12/2016	**Asbestos Fibres**	NAD
					06/12/2016	**Asbestos Fibres (2)**	NAD
					06/12/2016	**Asbestos ACM**	NAD
					06/12/2016	**Asbestos ACM (2)**	NAD
					06/12/2016	**Asbestos Type**	NAD
					06/12/2016	**Asbestos Type (2)**	NAD
					06/12/2016	**Asbestos Level Screen**	NAD
16/15353	25	BH21	1.5	814	06/12/2016	**General Description (Bulk Analysis)**	soil-stones
					06/12/2016	**Asbestos Fibres**	Fibre Bundles
					06/12/2016	**Asbestos ACM**	NAD
					06/12/2016	**Asbestos Type**	Chrysotile
					06/12/2016	**Asbestos Level Screen**	<0.1%
					08/12/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					08/12/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	25	BH21	3.5	826	06/12/2016	**General Description (Bulk Analysis)**	soil-stones
					06/12/2016	**Asbestos Fibres**	Fibre Bundles
					06/12/2016	**Asbestos ACM**	NAD
					06/12/2016	**Asbestos Type**	Chrysotile
					06/12/2016	**Asbestos Level Screen**	<0.1%
					08/12/2016	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					08/12/2016	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
16/15353	25	BH21	5.0	832	06/12/2016	**General Description (Bulk Analysis)**	soil-stones
					06/12/2016	**Asbestos Fibres**	NAD
					06/12/2016	**Asbestos Fibres (2)**	NAD
					06/12/2016	**Asbestos ACM**	NAD
					06/12/2016	**Asbestos ACM (2)**	NAD

Client Name: Waterman Infrastructure & Environment Limited
Reference: WIE 13235
Location: Phoenix St
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/15353	25	BH21	5.0	832	06/12/2016	**Asbestos Type**	NAD
					06/12/2016	**Asbestos Type (2)**	NAD
					06/12/2016	**Asbestos Level Screen**	NAD

Client Name: Waterman Infrastructure & Environment Limited **Matrix : Solid**

Reference: WIE 13235

Location: Phoenix St

Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
16/15353	2	TP04	0.50	28-30	Asbestos detected in sample
16/15353	3	BH21	0.00-0.50	55-56	Asbestos detected in sample
16/15353	3	BH15	0.00-0.50	61-63	Asbestos detected in sample
16/15353	3	TP10	0.50	67-69	Asbestos detected in sample
16/15353	3	TP7	0.50	88-90	Asbestos detected in sample
16/15353	3	TP8	0.40	100-102	Asbestos detected in sample
16/15353	6	BH22	3.00	220-222	Asbestos detected in sample
16/15353	9	TP18	0.60	292-294	Asbestos detected in sample
16/15353	9	TP19	0.40	298-300	Asbestos detected in sample
16/15353	9	TP20	0.80	304-306	Asbestos detected in sample
16/15353	9	TP21	0.60	310-312	Asbestos detected in sample
16/15353	9	TP9	0.50	337-339	Asbestos detected in sample
16/15353	14	BH23	4.0	447-449	Asbestos detected in sample
16/15353	16	BH15	2.0	497-499	Asbestos detected in sample
16/15353	17	BH11	2.0	524-526	Asbestos detected in sample
16/15353	22	BH14	1.5	709-711	Asbestos detected in sample
16/15353	24	BH19	0.50	754-756	Asbestos detected in sample
16/15353	25	BH21	1.5	813-815	Asbestos detected in sample
16/15353	25	BH21	3.5	825-827	Asbestos detected in sample

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/15353

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution
AC	x10 Dilution
AD	x20 Dilution
AE	x100 Dilution

JE Job No: 16/15353

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5/TM36	TM005: Modified USEPA 8015B. Determination of Solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of Solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM7	Modified USEPA 3540 and 9071 for oily wastes. In house method for the gravimetric determination of a sample following solvent extraction.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.			AR	Yes
TM7	Modified USEPA 3540 and 9071 for oily wastes. In house method for the gravimetric determination of a sample following solvent extraction.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.	Yes		AR	Yes
TM13	Determination of Saturates, Aromatics, Resins and Asphaltenes by Thin Layer Chromatography with Flame Ionisation Detection.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM6	Solid samples are extracted using Soxhlet apparatus and solvent.			AR	
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM89	Preparation of positive asbestos samples for Eltra analysis			AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.			AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM0	No preparation is required.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM107	Determination of Thiocyanate by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

JE Job No: 16/15353

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Appendix J Laboratory Analysis Results (Groundwater)

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG

4225

Attention :	Ben Greenfield
Date :	27th January, 2017
Your reference :	EED13235
Our reference :	Test Report 17/2371 Batch 1
Location :	Phoenix Place
Date samples received :	12th January, 2017
Status :	Final report
Issue :	1

Nine samples were received for analysis on 12th January, 2017 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-7	8-14	15-21	22-28	29-35	36-42	44-50	51-57			LOD/LOR	Units	Method No.
Sample ID	BH19s	BH21s	BH12s	BH13s	BH23s	BH14s	BH21 DEEP	BH12 DEEP					
Depth	3.85	3.20	4.82	4.18	3.53	3.85	9.00						
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G					
Sample Date	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017					
Dissolved Arsenic #	5.2	2.3	13.9	6.1	8.5	15.8	<0.9	6.8			<0.9	ug/l	TM30/PM14
Dissolved Barium #	49.8	92.2	17.3	190.4	115.8	119.6	32.7	175.0			<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM30/PM14
Dissolved Boron	501	314	229	668	439	373	484	176			<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			<0.03	ug/l	TM30/PM14
Dissolved Calcium #	389.9 AA	252.7 AA	24.2	458.5 AA	356.5 AA	385.6 AA	97.7	136.4			<0.2	mg/l	TM30/PM14
Total Dissolved Chromium #	<0.2	1.4	<0.2	<0.2	0.4	<0.2	<0.2	4.1			<0.2	ug/l	TM30/PM14
Dissolved Cobalt #	1.3	0.6	1.0	5.9	15.5	8.2	0.3	1.0			<0.1	ug/l	TM30/PM14
Dissolved Copper #	7	8	4	<3	<3	<3	<3	61			<3	ug/l	TM30/PM14
Total Dissolved Iron #	73.3	<4.7	46.6	5630.0	4310.0	5775.0	63.8	291.6			<4.7	ug/l	TM30/PM14
Dissolved Lead #	6.8	<0.4	7.3	<0.4	<0.4	14.1	<0.4	6.3			<0.4	ug/l	TM30/PM14
Dissolved Magnesium #	30.7	27.4	0.3	47.3	34.4	28.8	42.1	<0.1			<0.1	mg/l	TM30/PM14
Dissolved Mercury #	1.0	<0.5	<0.5	0.7	<0.5	0.6	0.6	0.6			<0.5	ug/l	TM30/PM14
Dissolved Molybdenum #	6.6	3.4	22.5	6.5	5.3	9.8	2.9	219.9			<0.2	ug/l	TM30/PM14
Dissolved Nickel #	8.6	3.7	7.6	4.0	5.6	5.5	1.0	24.3			<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	28.9			<1.2	ug/l	TM30/PM14
Dissolved Vanadium #	5.5	5.8	11.8	3.0	3.6	3.6	3.0	19.0			<0.6	ug/l	TM30/PM14
Dissolved Zinc #	23.5	10.6	<1.5	17.6	6.3	361.6	<1.5	10.7			<1.5	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	1104 AA	747 AA	62	1345 AA	1036 AA	1085 AA	421	341			<1	mg/l	TM30/PM14
PAH MS													
Naphthalene #	<0.1	<0.1 B	<0.1 B	<0.1	<0.1	1.6	<0.1	<0.1 B			<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.013	<0.013	<0.013	<0.013	<0.013	0.655	<0.013	<0.013			<0.013	ug/l	TM4/PM30
Acenaphthene #	<0.013	<0.013	<0.013	<0.013	<0.013	1.105	<0.013	<0.013			<0.013	ug/l	TM4/PM30
Fluorene #	<0.014	<0.014	<0.014	<0.014	<0.014	0.593	<0.014	<0.014			<0.014	ug/l	TM4/PM30
Phenanthrene #	0.024	<0.011	0.024	<0.011	<0.011	1.252	0.025	0.021			<0.011	ug/l	TM4/PM30
Anthracene #	<0.013	<0.013	<0.013	<0.013	<0.013	0.143	<0.013	<0.013			<0.013	ug/l	TM4/PM30
Fluoranthene #	0.041	<0.012	<0.012	<0.012	<0.012	0.154	0.021	<0.012			<0.012	ug/l	TM4/PM30
Pyrene #	0.038	<0.013	<0.013	<0.013	<0.013	0.101	0.020	0.013			<0.013	ug/l	TM4/PM30
Benzo(a)anthracene #	0.024	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015			<0.015	ug/l	TM4/PM30
Chrysene #	0.024	<0.011	<0.011	<0.011	<0.011	<0.011	0.012	<0.011			<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	0.045	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018			<0.018	ug/l	TM4/PM30
Benzo(a)pyrene #	0.026	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016			<0.016	ug/l	TM4/PM30
Indeno(123cd)pyrene #	0.016	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011			<0.011	ug/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene #	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011			<0.011	ug/l	TM4/PM30
PAH 16 Total #	0.238	<0.195	<0.195	<0.195	<0.195	5.603	<0.195	<0.195			<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	83	76	77	81	83	78	80	72			<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-7	8-14	15-21	22-28	29-35	36-42	44-50	51-57			LOD/LOR	Units	Method No.
Sample ID	BH19s	BH21s	BH12s	BH13s	BH23s	BH14s	BH21 DEEP	BH12 DEEP					
Depth	3.85	3.20	4.82	4.18	3.53	3.85	9.00						
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G					
Sample Date	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017					
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	103	101	101	103	99	103	101	107			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	97	102	105	103	100	103	102	111			<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10	<10	111			<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	30	<10	<10	<10	<10	438			<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	185	<10	<10	<10	<10	2201			<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>C35-C44	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
Total aliphatics C5-44	<10	<10	215	<10	<10	<10	<10	2750			<10	ug/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	15	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
>EC35-EC44	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM30
Total aromatics C5-44	<10	<10	15	<10	<10	<10	<10	<10			<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	<10	<10	230	<10	<10	<10	<10	2750			<10	ug/l	TM5/TM36/PM30
Sulphate #	559.2	408.5	99.1	514.1	345.5	490.6	207.3	127.6			<0.5	mg/l	TM38/PM0
Chloride #	131.6	92.8	147.3	414.3	284.9	24.5	119.2	318.5			<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	106.6	13.9	<0.2	0.4	1.8	<0.2	<0.2	1.2			<0.2	mg/l	TM38/PM0
Free Cyanide #	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	mg/l	TM89/PM0
Total Cyanide #	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	mg/l	TM89/PM0
Ammoniacal Nitrogen as NH4 #	3.49	3.23	23.80	21.91	10.05	7.40	0.85	27.34			<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006			<0.006	mg/l	TM38/PM0
pH #	7.41	7.48	11.26	7.56	7.42	7.56	7.86	13.03			<0.01	pH units	TM73/PM0

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	1-7	8-14	15-21	22-28	29-35	36-42	44-50	51-57					
Sample ID	BH19s	BH21s	BH12s	BH13s	BH23s	BH14s	BH21 DEEP	BH12 DEEP					
Depth	3.85	3.20	4.82	4.18	3.53	3.85	9.00				Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G					
Sample Date	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017					
SVOC MS											LOD/LOR	Units	Method No.
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5			<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	96	94	92	91	90	87	96	98			<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	98	102	82	98	92	93	99	100			<0	%	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

VOC Report : **Liquid**

J E Sample No.	1-7	8-14	15-21	22-28	29-35	36-42	44-50	51-57			LOD/LOR	Units	Method No.
Sample ID	BH19s	BH21s	BH12s	BH13s	BH23s	BH14s	BH21 DEEP	BH12 DEEP					
Depth	3.85	3.20	4.82	4.18	3.53	3.85	9.00						
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G					
Sample Date	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017	09/01/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	103	101	101	103	99	103	101	107			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	97	102	105	103	100	103	102	111			<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2371						

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2371

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG

4225

Attention :	Ben Greenfield
Date :	3rd February, 2017
Your reference :	EED13235
Our reference :	Test Report 17/2371 Batch 2 Schedule A
Location :	Phoenix Place
Date samples received :	1st February, 2017
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 1st February, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	79-85	114-120	121-127	128-134							LOD/LOR	Units	Method No.
Sample ID	BH12 SHALLOW	BH11 DEEP	BH21 DEEP	BH12 DEEP									
Depth	4.62	10.4	9.80	17.65									
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	2	2	2	2									
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017									
VOC TICs	ND	-	-	See Attached								None	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	0.9							<0.5	ug/l	TM15/PM10
Toluene #	<5	9	<5	<5							<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1							<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	98	97	98	100							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	98	96	95	99							<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	60							<10	ug/l	TM36/PM12
>C6-C8 #	32	10	<10	238							<10	ug/l	TM36/PM12
>C8-C10 #	247	19	<10	1374							<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5							<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>C35-C44	<10	<10	<10	<10							<10	ug/l	TM5/PM30
Total aliphatics C5-44	279	29	<10	1672							<10	ug/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10							<10	ug/l	TM36/PM12
>EC8-EC10 #	21	<10	<10	113							<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5							<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10	<10							<10	ug/l	TM5/PM30
>EC35-EC44	<10	<10	<10	<10							<10	ug/l	TM5/PM30
Total aromatics C5-44	21	<10	<10	113							<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	300	29	<10	1785							<10	ug/l	TM5/TM36/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	79-85	114-120	121-127	128-134									
Sample ID	BH12 SHALLOW	BH11 DEEP	BH21 DEEP	BH12 DEEP									
Depth	4.62	10.4	9.80	17.65									
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	2	2	2	2									
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Alcohols/Acetates													
Methyl Alcohol (Methanol)	1262 ++	-	-	2655 ++							<500	ug/l	TM83/PM10
Ethyl Alcohol (Ethanol)	647 SV	-	-	6952 ++							<500	ug/l	TM83/PM10
i-Propyl Alcohol (Isopropanol)	<100 SV	-	-	178 SV							<100	ug/l	TM83/PM10
n-Propyl Alcohol	101 SV	-	-	611 SV							<100	ug/l	TM83/PM10
n-Butyl Alcohol	293 SV	-	-	2449 ++							<100	ug/l	TM83/PM10
n-Pentyl Alcohol	845 SV	-	-	5351 ++							<100	ug/l	TM83/PM10
n-Hexyl Alcohol	389 SV	-	-	1829 ++							<100	ug/l	TM83/PM10
n-Heptyl Alcohol	<100 SV	-	-	197 SV							<100	ug/l	TM83/PM10
Methyl Acetate	<100 SV	-	-	<100 SV							<100	ug/l	TM83/PM10
Ethyl Acetate	<100 SV	-	-	<100 SV							<100	ug/l	TM83/PM10
i-Propyl Acetate	<100 SV	-	-	<100 SV							<100	ug/l	TM83/PM10
n-Propyl Acetate	<100 SV	-	-	<100 SV							<100	ug/l	TM83/PM10
n-Butyl Acetate	<100 SV	-	-	<100 SV							<100	ug/l	TM83/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

VOC Report : **Liquid**

J E Sample No.	79-85	114-120	121-127	128-134							LOD/LOR	Units	Method No.
Sample ID	BH12 SHALLOW	BH11 DEEP	BH21 DEEP	BH12 DEEP									
Depth	4.62	10.4	9.80	17.65									
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017									
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water									
Batch Number	2	2	2	2									
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017									
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5							<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	0.9							<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Toluene #	<5	9	<5	<5							<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1							<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1							<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4							<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3							<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	98	97	98	100							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	98	96	95	99							<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Job number: 17/2371
Sample number: 128
Sample identity: BH12 DEEP
Sample depth: 17.65
Sample Type: Ground Water
Units: ug/l

Method: **VOC**
Matrix: **Liquid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
110-43-0	2-Heptanone	5.857	91	637

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2371						

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2371

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

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

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM83	Modified USEPA method 8260. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG

4225

Attention :	Ben Greenfield
Date :	15th February, 2017
Your reference :	EED13235
Our reference :	Test Report 17/2371 Batch 2 Schedule B 17/2371 Batch 2 Schedule C
Location :	Phoenix Place
Date samples received :	1st February, 2017
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 1st February, 2017 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc
Project Manager

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	58-64	65-71	72-78	79-85	86-92	93-99	100-106	107-113	114-120	121-127	LOD/LOR	Units	Method No.
Sample ID	BH19 SHALLOW	BH11 SHALLOW	BH21 SHALLOW	BH12 SHALLOW	BH13 SHALLOW	BH23 SHALLOW	BH14 SHALLOW	BH22 SHALLOW	BH11 DEEP	BH21 DEEP			
Depth	3.96	5.77	2.75	4.62	4.18	3.51	3.96	2.00	10.4	9.80			
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G			
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017			
Dissolved Arsenic #	8.6	10.9	4.7	12.9	15.2	7.6	13.4	7.1	11.5	3.5	<0.9	ug/l	TM30/PM14
Dissolved Barium #	47.7	91.4	68.5	72.2	243.6	104.5	106.9	51.4	176.8	44.6	<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron	435	271	233	134	398	533	406	214	362	514	<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.52	<0.03	<0.03	<0.03	ug/l	TM30/PM14
Dissolved Calcium #	-	165.6	127.0	138.5	-	-	-	197.3	82.8	114.5	<0.2	mg/l	TM30/PM14
Total Dissolved Chromium #	6.2	<0.2	5.6	4.1	<0.2	0.5	<0.2	0.5	0.4	0.8	<0.2	ug/l	TM30/PM14
Dissolved Cobalt #	0.9	3.4	0.5	0.5	4.1	8.4	6.4	<0.1	<0.1	<0.1	<0.1	ug/l	TM30/PM14
Dissolved Copper #	5	<3	8	4	<3	<3	<3	24	<3	<3	<3	ug/l	TM30/PM14
Total Dissolved Iron #	6.3	975.1	37.8	60.5	14060.0$_{AA}$	290.8	3466.0	10.0	175.9	192.5	<4.7	ug/l	TM30/PM14
Dissolved Lead #	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	11.1	<0.4	<0.4	<0.4	<0.4	ug/l	TM30/PM14
Dissolved Magnesium #	24.4	32.5	15.4	<0.1	64.3	32.6	25.6	8.9	28.9	47.0	<0.1	mg/l	TM30/PM14
Dissolved Mercury #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Molybdenum #	15.0	2.7	5.2	66.4	1.2	7.1	7.8	10.2	3.3	1.3	<0.2	ug/l	TM30/PM14
Dissolved Nickel #	7.0	4.6	3.6	10.3	0.6	4.6	5.0	2.4	1.3	0.5	<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	17.6	<1.2	<1.2	<1.2	<1.2	9.7	<1.2	<1.2	<1.2	ug/l	TM30/PM14
Dissolved Vanadium #	3.0	0.9	7.2	15.0	2.0	1.0	1.3	9.0	1.0	1.1	<0.6	ug/l	TM30/PM14
Dissolved Zinc #	10.2	4.1	12.0	2.8	6.1	19.3	456.2	157.1	<1.5	7.3	<1.5	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	1159$_{AA}$	551	382	346	1463$_{AA}$	1083$_{AA}$	911$_{AA}$	531	328	484	<1	mg/l	TM30/PM14
PAH MS													
Naphthalene #	<0.1	<0.1	<0.1^{B}	0.1^{B}	<0.1^{B}	<0.1^{B}	<0.1^{B}	<0.1^{B}	<0.1^{B}	<0.1^{B}	<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.019	0.017	<0.013	<0.013	<0.013	ug/l	TM4/PM30
Acenaphthene #	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.016	<0.013	<0.013	<0.013	<0.013	ug/l	TM4/PM30
Fluorene #	<0.014	<0.014	<0.014	0.053	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	ug/l	TM4/PM30
Phenanthrene #	<0.011	0.013	0.017	0.025	<0.011	<0.011	0.130	0.082	0.011	<0.011	<0.011	ug/l	TM4/PM30
Anthracene #	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.027	0.031	<0.013	<0.013	<0.013	ug/l	TM4/PM30
Fluoranthene #	<0.012	<0.012	0.029	<0.012	<0.012	<0.012	0.178	0.282	<0.012	<0.012	<0.012	ug/l	TM4/PM30
Pyrene #	<0.013	<0.013	0.028	<0.013	<0.013	<0.013	0.136	0.261	<0.013	<0.013	<0.013	ug/l	TM4/PM30
Benzo(a)anthracene #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.050	0.154	<0.015	<0.015	<0.015	ug/l	TM4/PM30
Chrysene #	<0.011	<0.011	0.016	<0.011	<0.011	<0.011	0.060	0.185	<0.011	<0.011	<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.018	<0.018	0.026	<0.018	<0.018	<0.018	0.079	0.346	<0.018	<0.018	<0.018	ug/l	TM4/PM30
Benzo(a)pyrene #	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.046	0.186	<0.016	<0.016	<0.016	ug/l	TM4/PM30
Indeno(123cd)pyrene #	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.026	0.111	<0.011	<0.011	<0.011	ug/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene #	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.027	0.098	<0.011	<0.011	<0.011	ug/l	TM4/PM30
PAH 16 Total #	<0.195	<0.195	<0.195	<0.195	<0.195	<0.195	0.794	1.773	<0.195	<0.195	<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.06	0.25	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.10	<0.01	<0.01	<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	75	70	76	86	84	87	77	85	70	76	<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	-	<5	<5	<5	<5	-	-	<5	ug/l	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	58-64	65-71	72-78	79-85	86-92	93-99	100-106	107-113	114-120	121-127	LOD/LOR	Units	Method No.
Sample ID	BH19 SHALLOW	BH11 SHALLOW	BH21 SHALLOW	BH12 SHALLOW	BH13 SHALLOW	BH23 SHALLOW	BH14 SHALLOW	BH22 SHALLOW	BH11 DEEP	BH21 DEEP			
Depth	3.96	5.77	2.75	4.62	4.18	3.51	3.96	2.00	10.4	9.80			
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G			
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017			
Ethylbenzene #	<1	<1	<1	-	<1	<1	<1	<1	-	-	<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	-	<2	<2	<2	<2	-	-	<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	-	<1	<1	<1	<1	-	-	<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	104	104	105	-	104	104	121	112	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	98	99	-	96	96	111	93	-	-	<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	-	<5	<5	<5	<5	-	-	<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>C35-C44	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
Total aliphatics C5-44	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	-	<5	<5	<5	<5	-	-	<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
>EC35-EC44	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/PM30
Total aromatics C5-44	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	<10	<10	<10	-	<10	<10	<10	<10	-	-	<10	ug/l	TM5/TM36/PM30
Sulphate #	817.0	192.6	310.7	172.5	413.1	374.2	431.8	233.6	24.1	211.5	<0.5	mg/l	TM38/PM0
Chloride #	62.2	19.2	49.2	338.3	423.8	314.4	22.2	433.2	111.2	113.6	<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	98.9	20.5	25.7	<0.2	<0.2	3.5	3.5	32.9	<0.2	<0.2	<0.2	mg/l	TM38/PM0
Free Cyanide #	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM89/PM0
Total Cyanide #	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM89/PM0
Ammoniacal Nitrogen as NH4 #	1.26	19.68	1.21	28.30	36.20	8.24	7.18	0.12	0.77	0.87	<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<0.006	<0.006	<0.006	0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	mg/l	TM38/PM0
pH #	7.41	7.30	7.55	12.04	7.32	7.49	7.62	7.54	7.66	7.88	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	128-134										LOD/LOR	Units	Method No.
Sample ID	BH12 DEEP												
Depth	17.65												
COC No / misc													
Containers	V H HN N P G												
Sample Date	30/01/2017												
Sample Type	Ground Water												
Batch Number	2												
Date of Receipt	01/02/2017												
Dissolved Arsenic #	7.8										<0.9	ug/l	TM30/PM14
Dissolved Barium #	98.6										<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5										<0.5	ug/l	TM30/PM14
Dissolved Boron	215										<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03										<0.03	ug/l	TM30/PM14
Dissolved Calcium #	90.1										<0.2	mg/l	TM30/PM14
Total Dissolved Chromium #	2.6										<0.2	ug/l	TM30/PM14
Dissolved Cobalt #	0.2										<0.1	ug/l	TM30/PM14
Dissolved Copper #	54										<3	ug/l	TM30/PM14
Total Dissolved Iron #	347.2										<4.7	ug/l	TM30/PM14
Dissolved Lead #	2.1										<0.4	ug/l	TM30/PM14
Dissolved Magnesium #	0.1										<0.1	mg/l	TM30/PM14
Dissolved Mercury #	<0.5										<0.5	ug/l	TM30/PM14
Dissolved Molybdenum #	191.0										<0.2	ug/l	TM30/PM14
Dissolved Nickel #	24.4										<0.2	ug/l	TM30/PM14
Dissolved Selenium #	28.7										<1.2	ug/l	TM30/PM14
Dissolved Vanadium #	37.2										<0.6	ug/l	TM30/PM14
Dissolved Zinc #	3.8										<1.5	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	226										<1	mg/l	TM30/PM14
PAH MS													
Naphthalene #	<0.1 B										<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.013										<0.013	ug/l	TM4/PM30
Acenaphthene #	<0.013										<0.013	ug/l	TM4/PM30
Fluorene #	<0.014										<0.014	ug/l	TM4/PM30
Phenanthrene #	0.022										<0.011	ug/l	TM4/PM30
Anthracene #	<0.013										<0.013	ug/l	TM4/PM30
Fluoranthene #	0.012										<0.012	ug/l	TM4/PM30
Pyrene #	0.030										<0.013	ug/l	TM4/PM30
Benzo(a)anthracene #	<0.015										<0.015	ug/l	TM4/PM30
Chrysene #	<0.011										<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.018										<0.018	ug/l	TM4/PM30
Benzo(a)pyrene #	<0.016										<0.016	ug/l	TM4/PM30
Indeno(123cd)pyrene #	0.014										<0.011	ug/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.01										<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene #	0.041										<0.011	ug/l	TM4/PM30
PAH 16 Total #	<0.195										<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01										<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01										<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	75										<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	-										<0.1	ug/l	TM15/PM10
Benzene #	-										<0.5	ug/l	TM15/PM10
Toluene #	-										<5	ug/l	TM15/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	128-134										LOD/LOR	Units	Method No.
Sample ID	BH12 DEEP												
Depth	17.65												
COC No / misc													
Containers	V H HN N P G												
Sample Date	30/01/2017												
Sample Type	Ground Water												
Batch Number	2												
Date of Receipt	01/02/2017												
Ethylbenzene #	-										<1	ug/l	TM15/PM10
p/m-Xylene #	-										<2	ug/l	TM15/PM10
o-Xylene #	-										<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	-										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-										<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	-										<10	ug/l	TM36/PM12
>C6-C8 #	-										<10	ug/l	TM36/PM12
>C8-C10 #	-										<10	ug/l	TM36/PM12
>C10-C12 #	-										<5	ug/l	TM5/PM30
>C12-C16 #	-										<10	ug/l	TM5/PM30
>C16-C21 #	-										<10	ug/l	TM5/PM30
>C21-C35 #	-										<10	ug/l	TM5/PM30
>C35-C44	-										<10	ug/l	TM5/PM30
Total aliphatics C5-44	-										<10	ug/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	-										<10	ug/l	TM36/PM12
>EC7-EC8 #	-										<10	ug/l	TM36/PM12
>EC8-EC10 #	-										<10	ug/l	TM36/PM12
>EC10-EC12 #	-										<5	ug/l	TM5/PM30
>EC12-EC16 #	-										<10	ug/l	TM5/PM30
>EC16-EC21 #	-										<10	ug/l	TM5/PM30
>EC21-EC35 #	-										<10	ug/l	TM5/PM30
>EC35-EC44	-										<10	ug/l	TM5/PM30
Total aromatics C5-44	-										<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	-										<10	ug/l	TM5/TM36/PM30
Sulphate #	123.8										<0.5	mg/l	TM38/PM0
Chloride #	236.9										<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	0.6										<0.2	mg/l	TM38/PM0
Free Cyanide #	<0.01										<0.01	mg/l	TM89/PM0
Total Cyanide #	0.01										<0.01	mg/l	TM89/PM0
Ammoniacal Nitrogen as NH4 #	26.43										<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<0.006										<0.006	mg/l	TM38/PM0
pH #	12.64										<0.01	pH units	TM73/PM0

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	58-64	65-71	72-78	79-85	86-92	93-99	100-106	107-113	114-120	121-127	LOD/LOR	Units	Method No.
Sample ID	BH19 SHALLOW	BH11 SHALLOW	BH21 SHALLOW	BH12 SHALLOW	BH13 SHALLOW	BH23 SHALLOW	BH14 SHALLOW	BH22 SHALLOW	BH11 DEEP	BH21 DEEP			
Depth	3.96	5.77	2.75	4.62	4.18	3.51	3.96	2.00	10.4	9.80			
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G			
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017			
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	3.3	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	113	123	124	114	113	119	114	82	104	105	<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	100	100	101	88	101	103	110	101	89	84	<0	%	TM16/PM30

Please see attached notes for all abbreviations and acronyms

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	128-134												
Sample ID	BH12 DEEP												
Depth	17.65										Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V H HN N P G												
Sample Date	30/01/2017												
Sample Type	Ground Water												
Batch Number	2												
Date of Receipt	01/02/2017										LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #	<1										<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5										<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1										<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5										<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1										<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5										<0.5	ug/l	TM16/PM30
4-Methylphenol	<1										<1	ug/l	TM16/PM30
4-Nitrophenol	<10										<10	ug/l	TM16/PM30
Pentachlorophenol	<1										<1	ug/l	TM16/PM30
Phenol	<1										<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1										<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1										<1	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5										<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1										<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5										<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1										<1	ug/l	TM16/PM30
Diethyl phthalate #	<1										<1	ug/l	TM16/PM30
Dimethyl phthalate	<1										<1	ug/l	TM16/PM30
Other SVOCs													
1,2-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
2-Nitroaniline	<1										<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5										<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1										<1	ug/l	TM16/PM30
3-Nitroaniline	<1										<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1										<1	ug/l	TM16/PM30
4-Chloroaniline	<1										<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1										<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5										<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5										<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5										<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1										<1	ug/l	TM16/PM30
Carbazole #	<0.5										<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5										<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1										<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1										<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1										<1	ug/l	TM16/PM30
Hexachloroethane #	<1										<1	ug/l	TM16/PM30
Isophorone #	<0.5										<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5										<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1										<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	117										<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	89										<0	%	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

VOC Report : **Liquid**

J E Sample No.	58-64	65-71	72-78	86-92	93-99	100-106	107-113					
Sample ID	BH19 SHALLOW	BH11 SHALLOW	BH21 SHALLOW	BH13 SHALLOW	BH23 SHALLOW	BH14 SHALLOW	BH22 SHALLOW					
Depth	3.96	5.77	2.75	4.18	3.51	3.96	2.00					
COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G	V H HN N P G					
Sample Date	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017	30/01/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	2	2	2	2	2	2	2					
Date of Receipt	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017					
VOC MS												
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	104	104	105	104	104	121	112				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	98	99	96	96	111	93				<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2371						

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2371

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG

Attention :	Ben Greenfield
Date :	23rd February, 2017
Your reference :	EED13235
Our reference :	Test Report 17/2371 Batch 3
Location :	Phoenix Place
Date samples received :	11th February, 2017
Status :	Final report
Issue :	1

Three samples were received for analysis on 11th February, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	135-141	142-148	149-155								LOD/LOR	Units	Method No.
Sample ID	BH20 Shallow	BH12 Shallow	BH19 Deep										
Depth	5.52	4.60	21.81										
COC No / misc													
Containers	V H HN N P G	V H HN N P G	V H HN N P G										
Sample Date	09/02/2017	09/02/2017	09/02/2017										
Sample Type	Ground Water	Ground Water	Ground Water										
Batch Number	3	3	3										
Date of Receipt	11/02/2017	11/02/2017	11/02/2017										
Dissolved Arsenic #	15.5	-	3.2								<0.9	ug/l	TM30/PM14
Dissolved Barium #	9.7	-	61.6								<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	-	<0.5								<0.5	ug/l	TM30/PM14
Dissolved Boron	192	-	347								<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	-	<0.03								<0.03	ug/l	TM30/PM14
Dissolved Calcium #	40.4	-	239.5_{AA}								<0.2	mg/l	TM30/PM14
Total Dissolved Chromium #	<0.2	-	1.8								<0.2	ug/l	TM30/PM14
Dissolved Cobalt #	<0.1	-	0.9								<0.1	ug/l	TM30/PM14
Dissolved Copper #	<3	-	3								<3	ug/l	TM30/PM14
Total Dissolved Iron #	15.4	-	164.1								<4.7	ug/l	TM30/PM14
Dissolved Lead #	<0.4	-	21.0								<0.4	ug/l	TM30/PM14
Dissolved Magnesium #	2.5	-	55.1								<0.1	mg/l	TM30/PM14
Dissolved Mercury #	<0.5	-	<0.5								<0.5	ug/l	TM30/PM14
Dissolved Molybdenum #	35.7	-	4.5								<0.2	ug/l	TM30/PM14
Dissolved Nickel #	3.8	-	9.5								<0.2	ug/l	TM30/PM14
Dissolved Selenium #	8.3	-	<1.2								<1.2	ug/l	TM30/PM14
Dissolved Vanadium #	4.6	-	4.3								<0.6	ug/l	TM30/PM14
Dissolved Zinc #	<1.5	-	91.7								<1.5	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	112	-	830_{AA}								<1	mg/l	TM30/PM14
PAH MS													
Naphthalene #	<0.1	-	<0.1								<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.013	-	<0.013								<0.013	ug/l	TM4/PM30
Acenaphthene #	0.043	-	<0.013								<0.013	ug/l	TM4/PM30
Fluorene #	0.021	-	<0.014								<0.014	ug/l	TM4/PM30
Phenanthrene #	0.058	-	<0.011								<0.011	ug/l	TM4/PM30
Anthracene #	<0.013	-	<0.013								<0.013	ug/l	TM4/PM30
Fluoranthene #	0.019	-	<0.012								<0.012	ug/l	TM4/PM30
Pyrene #	0.018	-	<0.013								<0.013	ug/l	TM4/PM30
Benzo(a)anthracene #	<0.015	-	<0.015								<0.015	ug/l	TM4/PM30
Chrysene #	<0.011	-	<0.011								<0.011	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.018	-	<0.018								<0.018	ug/l	TM4/PM30
Benzo(a)pyrene #	<0.016	-	<0.016								<0.016	ug/l	TM4/PM30
Indeno(123cd)pyrene #	<0.011	-	<0.011								<0.011	ug/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.01	-	<0.01								<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene #	<0.011	-	<0.011								<0.011	ug/l	TM4/PM30
PAH 16 Total #	<0.195	-	<0.195								<0.195	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	-	<0.01								<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	-	<0.01								<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	83	-	85								<0	%	TM4/PM30
VOC TICs	ND	ND	ND									None	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1								<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5								<0.5	ug/l	TM15/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	135-141	142-148	149-155									
Sample ID	BH20 Shallow	BH12 Shallow	BH19 Deep									
Depth	5.52	4.60	21.81									
COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	09/02/2017	09/02/2017	09/02/2017									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	3	3	3									
Date of Receipt	11/02/2017	11/02/2017	11/02/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Toluene #	<5	<5	<5								<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1								<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2								<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1								<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	136	125	150								<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111	103	107								<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10								<10	ug/l	TM36/PM12
>C6-C8 #	<10	38	<10								<10	ug/l	TM36/PM12
>C8-C10 #	<10	283	<10								<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5								<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10								<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10								<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10								<10	ug/l	TM5/PM30
>C35-C44	<10	<10	<10								<10	ug/l	TM5/PM30
Total aliphatics C5-44	<10	321	<10								<10	ug/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10								<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	28	<10								<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5								<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10								<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10								<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10								<10	ug/l	TM5/PM30
>EC35-EC44	<10	<10	<10								<10	ug/l	TM5/PM30
Total aromatics C5-44	<10	28	<10								<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	<10	349	<10								<10	ug/l	TM5/TM36/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	135-141	142-148	149-155									
Sample ID	BH20 Shallow	BH12 Shallow	BH19 Deep									
Depth	5.52	4.60	21.81									
COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	09/02/2017	09/02/2017	09/02/2017									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	3	3	3									
Date of Receipt	11/02/2017	11/02/2017	11/02/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Alcohols/Acetates													
Methyl Alcohol (Methanol)	995	<500 SV	<500								<500	ug/l	TM83/PM10
Ethyl Alcohol (Ethanol)	1991 ++	769 SV	<500								<500	ug/l	TM83/PM10
i-Propyl Alcohol (Isopropanol)	<100	<100 SV	<100								<100	ug/l	TM83/PM10
n-Propyl Alcohol	<100	113 SV	<100								<100	ug/l	TM83/PM10
n-Butyl Alcohol	<100	280 SV	<100								<100	ug/l	TM83/PM10
n-Pentyl Alcohol	<100	731 SV	<100								<100	ug/l	TM83/PM10
n-Hexyl Alcohol	<100	412 SV	<100								<100	ug/l	TM83/PM10
n-Heptyl Alcohol	<100	<100 SV	<100								<100	ug/l	TM83/PM10
Methyl Acetate	<100	<100 SV	<100								<100	ug/l	TM83/PM10
Ethyl Acetate	<100	<100 SV	<100								<100	ug/l	TM83/PM10
i-Propyl Acetate	<100	<100 SV	<100								<100	ug/l	TM83/PM10
n-Propyl Acetate	<100	<100 SV	<100								<100	ug/l	TM83/PM10
n-Butyl Acetate	<100	<100 SV	<100								<100	ug/l	TM83/PM10
Sulphate #	176.1	-	327.4								<0.5	mg/l	TM38/PM0
Chloride #	57.5	-	72.4								<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	4.4	-	27.4								<0.2	mg/l	TM38/PM0
Free Cyanide #	<0.01	-	<0.01								<0.01	mg/l	TM89/PM0
Total Cyanide #	<0.01	-	<0.01								<0.01	mg/l	TM89/PM0
Ammoniacal Nitrogen as NH4 #	1.16	-	0.28								<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<0.006	-	<0.006								<0.006	mg/l	TM38/PM0
pH #	10.73	-	7.84								<0.01	pH units	TM73/PM0

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	135-141	142-148	149-155									
Sample ID	BH20 Shallow	BH12 Shallow	BH19 Deep									
Depth	5.52	4.60	21.81									
COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	09/02/2017	09/02/2017	09/02/2017									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	3	3	3									
Date of Receipt	11/02/2017	11/02/2017	11/02/2017									
SVOC MS												
Phenols												
2-Chlorophenol #	<1	<1	<1									
2-Methylphenol #	<0.5	<0.5	<0.5									
2-Nitrophenol	<0.5	<0.5	<0.5									
2,4-Dichlorophenol #	<0.5	<0.5	<0.5									
2,4-Dimethylphenol	<1	<1	<1									
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5									
2,4,6-Trichlorophenol	<1	<1	<1									
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5									
4-Methylphenol	<1	<1	<1									
4-Nitrophenol	<10	<10	<10									
Pentachlorophenol	<1	<1	<1									
Phenol	<1	<1	<1									
PAHs												
2-Chloronaphthalene #	<1	<1	<1									
2-Methylnaphthalene #	<1	<1	<1									
Naphthalene #	-	<1	-									
Acenaphthylene #	-	<0.5	-									
Acenaphthene #	-	<1	-									
Fluorene #	-	<0.5	-									
Phenanthrene #	-	<0.5	-									
Anthracene #	-	<0.5	-									
Fluoranthene #	-	<0.5	-									
Pyrene #	-	<0.5	-									
Benzo(a)anthracene #	-	<0.5	-									
Chrysene #	-	<0.5	-									
Benzo(bk)fluoranthene #	-	<1	-									
Benzo(a)pyrene	-	<1	-									
Indeno(123cd)pyrene	-	<1	-									
Dibenzo(ah)anthracene #	-	<0.5	-									
Benzo(ghi)perylene #	-	<0.5	-									
Phthalates												
Bis(2-ethylhexyl) phthalate	<5	<5	<5									
Butylbenzyl phthalate	<1	<1	<1									
Di-n-butyl phthalate #	<1.5	<1.5	<1.5									
Di-n-Octyl phthalate	<1	<1	<1									
Diethyl phthalate #	<1	<1	<1									
Dimethyl phthalate	<1	<1	<1									

Please see attached notes for all abbreviations and acronyms

LOD/LOR	Units	Method No.
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<10	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<0.5	ug/l	TM16/PM30
<5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1.5	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30
<1	ug/l	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	135-141	142-148	149-155									
Sample ID	BH20 Shallow	BH12 Shallow	BH19 Deep									
Depth	5.52	4.60	21.81									
COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	09/02/2017	09/02/2017	09/02/2017									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	3	3	3									
Date of Receipt	11/02/2017	11/02/2017	11/02/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1								<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1								<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1								<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1								<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1								<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1								<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1								<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1								<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1								<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1								<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5								<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1								<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	93	92	90								<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	100	107	102								<0	%	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

VOC Report : **Liquid**

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COC No / misc												
Containers	V H HN N P G	V H HN N P G	V H HN N P G									
Sample Date	09/02/2017	09/02/2017	09/02/2017									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	3	3	3									
Date of Receipt	11/02/2017	11/02/2017	11/02/2017									

Please see attached notes for all abbreviations and acronyms

				LOD/LOR	Units	Method No.
VOC MS						
Dichlorodifluoromethane	<2	<2	<2	<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	136	125	150	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111	103	107	<0	%	TM15/PM10

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2371						

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2371

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM83	Modified USEPA method 8260. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG

Attention :	Ben Greenfield
Date :	28th February, 2017
Your reference :	EED13235
Our reference :	Test Report 17/2371 Batch 4
Location :	Phoenix Place
Date samples received :	15th February, 2017
Status :	Final report
Issue :	1

One sample were received for analysis on 15th February, 2017 of which one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Simon Gomery BSc
Project Manager

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	156-160												
Sample ID	BH12 DEEP												
Depth													
COC No / misc													
Containers	V HN P G												
Sample Date	14/02/2017												
Sample Type	Ground Water												
Batch Number	4												
Date of Receipt	15/02/2017												
												LOD/LOR	Units	Method No.
VOC TICs	See Attached												None	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1											<0.1	ug/l	TM15/PM10
Benzene #	<0.5											<0.5	ug/l	TM15/PM10
Toluene #	<5											<5	ug/l	TM15/PM10
Ethylbenzene #	<1											<1	ug/l	TM15/PM10
p/m-Xylene #	<2											<2	ug/l	TM15/PM10
o-Xylene #	<1											<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	108											<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100											<0	%	TM15/PM10
TPH CWG														
Aliphatics														
>C5-C6 #	57											<10	ug/l	TM36/PM12
>C6-C8 #	200											<10	ug/l	TM36/PM12
>C8-C10 #	1149											<10	ug/l	TM36/PM12
>C10-C12 #	<5											<5	ug/l	TM5/PM30
>C12-C16 #	<10											<10	ug/l	TM5/PM30
>C16-C21 #	<10											<10	ug/l	TM5/PM30
>C21-C35 #	<10											<10	ug/l	TM5/PM30
>C35-C44	<10											<10	ug/l	TM5/PM30
Total aliphatics C5-44	1406											<10	ug/l	TM5/TM36/PM30
Aromatics														
>C5-EC7 #	<10											<10	ug/l	TM36/PM12
>EC7-EC8 #	<10											<10	ug/l	TM36/PM12
>EC8-EC10 #	91											<10	ug/l	TM36/PM12
>EC10-EC12 #	<5											<5	ug/l	TM5/PM30
>EC12-EC16 #	<10											<10	ug/l	TM5/PM30
>EC16-EC21 #	<10											<10	ug/l	TM5/PM30
>EC21-EC35 #	<10											<10	ug/l	TM5/PM30
>EC35-EC44	<10											<10	ug/l	TM5/PM30
Total aromatics C5-44	91											<10	ug/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-44)	1497											<10	ug/l	TM5/TM36/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	156-160												
Sample ID	BH12 DEEP												
Depth													
COC No / misc													
Containers	V HN P G												
Sample Date	14/02/2017												
Sample Type	Ground Water												
Batch Number	4												
Date of Receipt	15/02/2017												
Alcohols/Acetates												LOD/LOR	Units	Method No.
Methyl Alcohol (Methanol)	1302 ++											<500	ug/l	TM83/PM10
Ethyl Alcohol (Ethanol)	6065 ++											<500	ug/l	TM83/PM10
i-Propyl Alcohol (Isopropanol)	142 SV											<100	ug/l	TM83/PM10
n-Propyl Alcohol	406 SV											<100	ug/l	TM83/PM10
n-Butyl Alcohol	1817 ++											<100	ug/l	TM83/PM10
n-Pentyl Alcohol	4107 ++											<100	ug/l	TM83/PM10
n-Hexyl Alcohol	1472 ++											<100	ug/l	TM83/PM10
n-Heptyl Alcohol	111 SV											<100	ug/l	TM83/PM10
Methyl Acetate	<100 SV											<100	ug/l	TM83/PM10
Ethyl Acetate	<100 SV											<100	ug/l	TM83/PM10
i-Propyl Acetate	<100 SV											<100	ug/l	TM83/PM10
n-Propyl Acetate	<100 SV											<100	ug/l	TM83/PM10
n-Butyl Acetate	<100 SV											<100	ug/l	TM83/PM10

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	156-160												
Sample ID	BH12 DEEP												
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V HN P G												
Sample Date	14/02/2017												
Sample Type	Ground Water												
Batch Number	4												
Date of Receipt	15/02/2017												
SVOC MS											LOD/LOR	Units	Method No.
Phenols													
2-Chlorophenol #	<1										<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5										<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1										<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5										<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1										<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5										<0.5	ug/l	TM16/PM30
4-Methylphenol	<1										<1	ug/l	TM16/PM30
4-Nitrophenol	<10										<10	ug/l	TM16/PM30
Pentachlorophenol	<1										<1	ug/l	TM16/PM30
Phenol	<1										<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1										<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1										<1	ug/l	TM16/PM30
Naphthalene #	2										<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5										<0.5	ug/l	TM16/PM30
Acenaphthene #	<1										<1	ug/l	TM16/PM30
Fluorene #	<0.5										<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5										<0.5	ug/l	TM16/PM30
Anthracene #	<0.5										<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5										<0.5	ug/l	TM16/PM30
Pyrene #	<0.5										<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<0.5										<0.5	ug/l	TM16/PM30
Chrysene #	<0.5										<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1										<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1										<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1										<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5										<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5										<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5										<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1										<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5										<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1										<1	ug/l	TM16/PM30
Diethyl phthalate #	<1										<1	ug/l	TM16/PM30
Dimethyl phthalate	<1										<1	ug/l	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

SVOC Report : **Liquid**

J E Sample No.	156-160												
Sample ID	BH12 DEEP												
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V HN P G												
Sample Date	14/02/2017												
Sample Type	Ground Water												
Batch Number	4												
Date of Receipt	15/02/2017												
SVOC MS											LOD/LOR	Units	Method No.
Other SVOCs													
1,2-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1										<1	ug/l	TM16/PM30
2-Nitroaniline	<1										<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5										<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1										<1	ug/l	TM16/PM30
3-Nitroaniline	<1										<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1										<1	ug/l	TM16/PM30
4-Chloroaniline	<1										<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1										<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5										<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5										<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5										<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1										<1	ug/l	TM16/PM30
Carbazole #	<0.5										<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5										<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1										<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1										<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1										<1	ug/l	TM16/PM30
Hexachloroethane #	<1										<1	ug/l	TM16/PM30
Isophorone #	<0.5										<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5										<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1										<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	103										<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	103										<0	%	TM16/PM30

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield
JE Job No.: 17/2371

VOC Report : **Liquid**

J E Sample No.	156-160												
Sample ID	BH12 DEEP												
Depth													
COC No / misc													
Containers	V HN P G												
Sample Date	14/02/2017												
Sample Type	Ground Water												
Batch Number	4												
Date of Receipt	15/02/2017												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1										<0.1	ug/l	TM15/PM10
Chloromethane #	<3										<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1										<0.1	ug/l	TM15/PM10
Bromomethane	<1										<1	ug/l	TM15/PM10
Chloroethane #	<3										<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3										<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5										<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1										<1	ug/l	TM15/PM10
Bromochloromethane #	<2										<2	ug/l	TM15/PM10
Chloroform #	<2										<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2										<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2										<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2										<2	ug/l	TM15/PM10
Benzene #	<0.5										<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromomethane #	<3										<3	ug/l	TM15/PM10
Bromodichloromethane #	<2										<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
Toluene #	<5										<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2										<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2										<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2										<2	ug/l	TM15/PM10
Dibromochloromethane #	<2										<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2										<2	ug/l	TM15/PM10
Chlorobenzene #	<2										<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2										<2	ug/l	TM15/PM10
Ethylbenzene #	<1										<1	ug/l	TM15/PM10
p/m-Xylene #	<2										<2	ug/l	TM15/PM10
o-Xylene #	<1										<1	ug/l	TM15/PM10
Styrene	<2										<2	ug/l	TM15/PM10
Bromoform #	<2										<2	ug/l	TM15/PM10
Isopropylbenzene #	<3										<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4										<4	ug/l	TM15/PM10
Bromobenzene #	<2										<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3										<3	ug/l	TM15/PM10
Propylbenzene #	<3										<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3										<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3										<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3										<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3										<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
n-Butylbenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3										<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2										<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3										<3	ug/l	TM15/PM10
Naphthalene	<2										<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3										<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	108										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100										<0	%	TM15/PM10

Job number: 17/2371
Sample number: 156
Sample identity: BH12 DEEP
Sample depth:
Sample Type: Ground Water
Units: ug/l

Method: **VOC**
Matrix: **Liquid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
110-43-0	2-Heptanone	5.809	91	423

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Waterman Infrastructure & Environment Limited
Reference: EED13235
Location: Phoenix Place
Contact: Ben Greenfield

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2371						

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

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2371

SOILS

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

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

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

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

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

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

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

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

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

WATERS

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

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

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

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

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

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

DILUTIONS

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

BLANKS

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

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

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

JE Job No: 17/2371

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of BTEX and calculation of Aliphatic fractions	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM83	Modified USEPA method 8260. Determination of Alcohols, Acetates, Acetone, Fuel Oxygenates, THF and Cyclohexane by Headspace GC-MS	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				

Appendix K Risk Rating Matrix

Risk rating for contaminated land qualitative risk assessment

Level of Severity	Likelihood		
	Most Likely	Reasonably Foreseeable	Unlikely
Acute harm or severe chronic harm. Direct pollution of sensitive water receptors or serious pollution of other water bodies.	High	High	Low
Harm from long-term exposure. Slight pollution of sensitive receptors or pollution of other water bodies.	Medium	Medium	Low
No significant harm in either short or long term. No pollution of water that is likely to affect sensitive receptors. No more than slight pollution of other water bodies.	Low	Low	Low

Appendix L Environmental Receptors

The Contaminated Land Statutory Guidance has a four category system that considers harm to human health, controlled waters, flora and fauna, property, livestock and crops. The Categories are broadly defined as follows:

1 Contaminated Land – similar to land where it is known that significant harm has been caused or significant harm is being caused

2 Contaminated Land – no significant harm being caused but there is a significant possibility for significant harm to be caused in the future

3 Not Contaminated Land – there may be harm being caused but no significant possibility for significant harm to be caused in the future

4 Not Contaminated Land – no pollutant linkage, normal levels of contaminants and no significant harm being caused and no significant possibility for significant harm to be caused in the future.

Significant pollution to controlled waters

Pollution of controlled waters

Under Section 78A(9) of Part 2A the term "pollution of controlled waters means the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter. The term "controlled waters" in relation to England has the same meaning as in Part 3 of the Water Resources Act 1991, except that "ground waters" does not include water contained in underground strata but above the saturation zones. (Paragraph 4.36)

Given that the Part 2A regime seeks to identify and deal with significant pollution (rather than lesser levels of pollution), the local authority should seek to focus on pollution which: (i) may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems; (ii) which may result in damage to material property; or (iii) which may impair or interfere with amenities and other legitimate uses of the environment. (Paragraph 4.37)

Significant pollution of controlled waters

Paragraph 4.38 states that "The following types of pollution should be considered to constitute significant pollution of controlled waters:

(a) Pollution equivalent to "environmental damage" to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations.

(b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use.

(c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway.

(d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)5)".

Paragraph 4.39 states that "In some circumstances, the local authority may consider that the following types of pollution may constitute significant pollution: (a) significant concentrations6 of hazardous substances or non-hazardous pollutants in groundwater; or (b) significant concentrations of priority hazardous substances, priority substances or other specific polluting substances in surface water; at an appropriate, risk based compliance point. The local authority should only conclude that pollution is significant if it considers that treating the land as contaminated land would be in accordance with the broad objectives of the regime as described in Section 1 (of the Contaminated Land Statutory Guidance). This would normally mean that the authority should conclude that less serious forms of pollution are not significant. In such cases the authority should consult the Environment Agency".

The following types of circumstance should not be considered to be contaminated land on water pollution grounds:

(a) The fact that substances are merely entering water and none of the conditions for considering that significant pollution is being caused set out in paragraphs 4.38 and 4.39 above are being met.

(b) The fact that land is causing a discharge that is not discernible at a location immediately downstream or down-gradient of the land (when compared to upstream or up-gradient concentrations).

(c) Substances entering water in compliance with a discharge authorised under the Environmental Permitting Regulations.

Significant pollution of controlled waters is being caused

In deciding whether significant pollution of controlled waters is being caused, the local authority should consider that this test is only met where it is satisfied that the substances in question are continuing to enter controlled waters; or that they have already entered the waters and are likely to do so again in such a manner that past and likely future entry in effect constitutes ongoing pollution. For these purposes, the local authority should:

(a) Regard substances as having entered controlled waters where they are dissolved or suspended in those waters, or (if they are immiscible with water) they have direct contact with those waters on or beneath the surface of the water.

(b) Take the term “continuing to enter” to mean any measurable entry of the substance(s) into controlled waters additional to any which has already occurred.

(c) Take the term “likely to do so again” to mean more likely than not to occur again.

Land should not be determined as contaminated land on grounds that significant pollution of controlled waters is being caused where: (a) the relevant substance(s) are already present in controlled waters; (b) entry into controlled waters of the substance(s) from land has ceased; and (c) it is not likely that further entry will take place.

Significant Possibility of Significant Pollution of Controlled Waters

In deciding whether or not a significant possibility of significant pollution of controlled waters exists, the local authority should first understand the possibility of significant pollution of controlled waters posed by the land, and the levels of certainty/uncertainty attached to that understanding, before it goes on to decide whether or not that possibility is significant. The term “possibility of significant pollution of controlled waters” means the estimated likelihood that significant pollution of controlled waters might occur. In assessing the possibility of significant pollution of controlled waters from land, the local authority should act in accordance with the advice on risk assessment in Section 3 and the guidance in this sub-section.

In deciding whether the possibility of significant pollution of controlled waters is significant the local authority should bear in mind that Part 2A makes the decision a positive legal test. In other words, for particular land to meet the test the authority needs reasonably to believe that there is a significant possibility of such pollution, rather than to demonstrate that there is not.

Before making its decision on whether a given possibility of significant pollution of controlled waters is significant, the local authority should consider:

(a) The estimated likelihood that the potential significant pollution of controlled waters would become manifest; the strength of evidence underlying the estimate; and the level of uncertainty underlying the estimate.

(b) The estimated impact of the potential significant pollution if it did occur. This should include consideration of whether the pollution would be likely to cause a breach of European water legislation, or make a major contribution to such a breach.

(c) The estimated timescale over which the significant pollution might become manifest.

(d) The authority's initial estimate of whether remediation is feasible, and if so what it would involve and the extent to which it might provide a solution to the problem; how long it would take; what benefit it would be likely to bring; and whether the benefits would outweigh the costs and any impacts on local society or the environment from taking action

Reproduced from DEFRA (2012) Contaminated Land Statutory Guidance pursuant to section 78YA of the Environmental Protection Act 1990 as amended by Section 57 of the Environment Act 1995.

Significant harm to human health, ecological systems and property

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Human beings	The following health effects should always be considered to constitute significant harm to human health: death; life threatening diseases (eg cancers); other diseases likely to have serious impacts on health; serious injury; birth defects; and impairment of reproductive functions. Other health effects may be considered by the local authority to constitute significant harm. For example, a wide range of conditions may or may not constitute significant harm (alone or in combination) including: physical injury; gastrointestinal disturbances; respiratory tract effects; cardio-vascular effects; central nervous system effects; skin ailments; effects on organs such as the liver or kidneys; or a wide range of other health impacts. In deciding whether or not a particular form of harm is significant harm, the local authority should consider the seriousness of the harm in question: including the impact on the health, and quality of life, of any person suffering the harm; and the scale of the harm. The authority should only conclude that harm is significant if it considers that treating the land as contaminated land would be in accordance with the broad objectives of the regime as described in Section 1 of the Contaminated Land Statutory Guidance.	The risk posed by one or more relevant contaminant linkage(s) relating to the land comprises: (a) The estimated likelihood that significant harm might occur to an identified receptor, taking account of the current use of the land in question. (b) The estimated impact if the significant harm did occur – i.e. the nature of the harm, the seriousness of the harm to any person who might suffer it, and (where relevant) the extent of the harm in terms of how many people might suffer it. In estimating the likelihood that a specific form of significant harm might occur the local authority should, among other things, consider: (a) The estimated probability that the significant harm might occur: (i) if the land continues to be used as it is currently being used; and (ii) where relevant, if the land were to be used in a different way (or ways) in the future having regard to the guidance on "current use" in Section 3 of the Contaminated Land Statutory Guidance. (b) The strength of evidence underlying the risk estimate. It should also consider the key assumptions on which the estimate of likelihood is based, and the level of uncertainty underlying the estimate.

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Any ecological system, or living organism forming part of such a system, within a location which is: • a site of special scientific interest (under section 28 of the Wildlife and Countryside Act (WCA) 1981 (as amended) and Part 4 of the Natural Environment and Rural Communitites Act 2006 (as amended)); • a national nature reserve (under Section 35 of the WCA 1981 (as amended)); • a marine nature reserve (under Section 36 of the WCA 1981 (as amended)); • an area of special protection for birds (under Section 3 of the WCA 1981 (as amended)); • a "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 (as amended); • any habitat or site afforded policy protection under Section 11 of The National Planning Policy Framework (NPPF) on conserving and enhancing the natural environment (i.e. possible Special Areas of Conservation, potential Special Protection Areas and listed or proposed Ramsar sites); or • any nature reserve established under Section 21 of the National Parks and Access to the Countryside Act 1949.	The following types of harm should be considered to be significant harm: • harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended).	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that: • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.
Property in the form of: • crops, including timber • produce grown domestically, or on allotments, for consumption • livestock • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the

Relevant types of receptor	Significant harm	Significant possibility of significant harm
	the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss. In the Guidance states that this description of significant harm is referred to as an "animal or crop effect".	contaminant.
Property in the form of buildings. For this purpose 'building' means any structure or erection and any part of a building, including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.	Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled. The Guidance states that this description of significant harm is referred to as a 'building effect'.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.

Reproduced from DEFRA (2012) Contaminated Land Statutory Guidance pursuant to section 78YA of the Environmental Protection Act 1990 as amended by Section 57 of the Environment Act 1995.

Appendix M Generic Assessment Criteria

Human Health Generic Assessment Criteria

Background

In order to be able to make inference on whether the results obtained during the site investigation (e.g. chemical concentrations in soils, waters and gas) point to the presence of a potential hazard to human health, it is necessary to distinguish between the results, reflecting background and/or insignificantly elevated levels of contamination (i.e. with negligible potential to cause harm or pollution) and the results with significantly elevated concentrations (i.e. with significant potential to cause harm or pollution).

The approach to risk assessment with respect to risks to human health from contaminated land in the UK is set out in the publication Model Procedures for the Management of Land Contamination (CLR11) Environment Agency (2004).

This sets out a tiered approach:

- Preliminary Risk Assessment (e.g. establishing potential pollutant linkages);
- Generic Quantitative Risk Assessment (GQRA) (e.g. comparison of site contaminant concentrations against generic standards and compliance criteria e.g. Soil Guideline Values (SGV) or other Generic Assessment Criteria including an assessment of risk using the source pathway target model); and
- Detailed Quantitative Risk Assessment (DQRA) (e.g. the comparison of contaminant concentrations against site specific assessment criteria).

Preliminary Risk Assessment

This typically encompasses a desk based generation of a conceptual model to establish the potential pollutant linkages associated with the site and any proposed development. Works would typically involve:

- Evaluation of the potential sources of contamination on the site and in the locality and from both a current and historical perspective
- Statutory Consultation;
- Evaluation of a sites geology, hydrology and hydrogeology;
- Site inspection;
- Additional pertinent information as necessary on a site by site basis.

Where works indicate the presence of a potential pollutant linkage further evaluation and potentially site investigation works are necessary to determine the significance of the linkage.

Generic Quantitative Risk Assessment (GQRA)

In August 2008 the Environment Agency (EA) and Department of Environment Food and Rural Affairs (DEFRA) announced the withdrawal of the Contaminated Land Reports CLR7 – 10, CLEA UK (beta) and existing SGV reports as they no-longer fully reflected the revised approach to human health risk assessment.

New partial guidance (in particular Science Reports SR2, SR3 and SR7) and new risk assessment tools (CLEA model version v1.04, v1.05 and currently v1.06) were published in 2009 and these allow environmental practitioners to derive generic and site specific Soil Assessment Criteria (GAC and SAC).

Soil Guideline Values (SGVs)

The EA and DEFRA updated the TOX reports and Soil Guideline Values (SGVs) to reflect the guidance documents published in 2009. SGVs for arsenic, cadmium, nickel, mercury, selenium, BTEX compounds (benzene, toluene, ethylbenzene and xylenes), dioxins, furans and dioxin like PCBs and phenol have been made available.

Since publishing the revised SGVs the CLEA model was updated to version v1.06. The Environment Agency has however confirmed that v1.05 has only a "minor effect on assessment criteria calculated using the CLEA software 1.04" and consequently the GACs derived are considered to remain valid. Environment Agency SGVs generated using v1.04 have also not been updated. Software version v1.06 is identical to v1.05 with some password protection enhancements that in no way affect the GAC values generated.

Owing to the scientific advances since 2009 and in particular toxicological research outputs, less significance is now placed on the SGVs in the hierarchy outlined below.

Category 4 Screening Levels (C4SLs)

Category 4 Screening Levels were generated by Contaminated Land: Applications in Real Environments (CL:AIRE) on behalf of DEFRA and made available to the public in April 2014. Category 4 Screening Levels were derived in response to policy changes outlined in the recently revised Statutory Guidance (SG) for Part 2A of the Environmental Protection Act 1990 (Part 2A). Part 2A was originally introduced to ensure that the risks from land contamination to human health, property and the environment are managed appropriately, with the revised SG being designed to address concerns regarding its real-world application. The revised SG presents a new four category system for classifying land under Part 2A, ranging from Category 4, where the level of risk posed is acceptably low, to Category 1, where the level of risk is clearly unacceptable.

The document SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document (March 2014) states that:

The Impact Assessment that accompanied the revised Part 2A Statutory Guidance identified a potential role for new 'Category 4 Screening Levels' in providing a simple test for deciding when land is suitable for use and definitely not contaminated land. It was envisaged that these new screening levels would allow 'low-risk' land to be dismissed from the need for further risk assessment more quickly and easily and allow regulators to focus efforts on the highest-risk land. The C4SLs were proposed to be more pragmatic (whilst still strongly precautionary) compared to existing generic screening levels. It is anticipated that, where they exist, C4SLs will be used as generic screening criteria that can be used within a GQRA, albeit describing a higher level of risk than the currently or previously available SGVs.

Suitable For Use Screening Levels (S4USLs)

In January 2015, Land Quality Management (LQM) and the Chartered Institute of Environmental Health (CIEH) have published updated screening criteria that were derived in line with UK guidance on risk assessment (SR2 and SR3). The resultant screening criteria reflect the industries greater knowledge of the relevant toxicology and further consideration of exposure scenarios as set out in SP1010.

Waterman's Generic Assessment Criteria (GACs)

Waterman have used the following hierarchy for the generic assessment of soils to evaluate Human Health.

- Published Category 4 Screening Values (C4SLs) derived by CL:AIRE on behalf of DEFRA; or in their absence;
- Suitable 4 Use Screening Levels (S4USLs) derived by LQM/CIEH; or in their absence;
- Published Soil Guideline Values (SGVs);
- GAC prepared in accordance with the CLEA v1.04 / v1.06 model by authoritative bodies (e.g. Contaminated Land Applications in Real Environments (CL:AIRE) 2009; and
- Waterman in-house GAC prepared in accordance with the CLEA V1.06 model and associated documents.

Tabulated values of the GACs used are presented overleaf. The references of the sources quoted in the table are:-

- Environment Agency, 2009. CLEA Software, version 1.06;
- DEFRA, Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Contaminated Land Report 11;
- DEFRA, 2014, SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document and appendices;
- LQM / CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment;
- Environment Agency, 2009. Human health toxicological assessment of contaminants in soil. Report SC050021/SR2;
- Environment Agency, 2009. Updated technical background to the CLEA model. Report SC050021/SR3;
- Environment Agency, 2008. Compilation of chemical data for priority organic pollutants for derivation of Soil Guideline Values. Report SC050021/SR7; and
- EIC / CL:AIRE, 2010. Soil generic assessment criteria for human health risk assessment.

Detailed Quantitative Risk Assessment (DQRA)

Detailed Quantitative Risk Assessments are undertaken on a site specific basis and full details of the alterations to the CLEA model and generic land use scenarios will be described within the specific reports.

Generic Quantitative Risk Assessment Criteria

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	**%**	**1**	**2.5**	**1**	**2.5**	**1**	**2.5**	
Arsenic	mg/kg	640	640	79	79	40	40	DEFRA C4SLs
Antimony	mg/kg	7500	7500			550	550	CL:AIRE 2009
Barium	mg/kg	22000	22000			1300	1300	CL:AIRE 2009
Beryllium	mg/kg	12	12	2.2	2.2	1.7	1.7	LQM S4ULs 2015
Boron (Water Soluble)	mg/kg	240000	240000	21000	21000	11000	11000	LQM S4ULs 2015
Cadmium	mg/kg	410	410	220	220	150	150	DEFRA C4SLs
Chromium (Total)	mg/kg	8600	8600	1500	1500	910	910	LQM S4ULs 2015
Chromium (VI)	mg/kg	49	49	21	21	21	21	DEFRA C4SLs
Copper	mg/kg	68000	68000	12000	12000	7100	7100	LQM S4ULs 2015
Lead	mg/kg	2330	2330	630	630	310	310	DEFRA C4SLs
Mercury	mg/kg	58	58	16	16	1.2	1.2	LQM S4ULs 2015
Molybdenum	mg/kg	17000	17000			670	670	CL:AIRE 2009
Nickel	mg/kg	980	980	230	230	180	180	LQM S4ULs 2015
Selenium	mg/kg	12000	12000	1100	1100	430	430	LQM S4ULs 2015
Vanadium*	mg/kg	9000	9000	2000	2000	1200	1200	LQM S4ULs 2015
Zinc	mg/kg	730000	730000	81000	81000	40000	40000	LQM S4ULs 2015

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	%	1	2.5	1	2.5	1	2.5	
Cyanide (Free)	mg/kg	16000	16000					Waterman GAC - CLEA v1.06
Complex Cyanide	mg/kg	430000	430000					Waterman GAC - CLEA v1.06
Thiocyanate	mg/kg	22000	22000					Waterman GAC - CLEA v1.06
Aliphatic EC5 - EC6	mg/kg	3200	5900	570000	59000	42	78	LQM S4ULs 2015
Aliphatic EC6 - EC8	mg/kg	7800	17000	600000	610000	100	230	LQM S4ULs 2015
Aliphatic EC8-EC10	mg/kg	2000	4800	13000	13000	27	65	LQM S4ULs 2015
Aliphatic EC10-EC12	mg/kg	9700	23000	13000	13000	130	330	LQM S4ULs 2015
Aliphatic EC12-EC16	mg/kg	59000	8200	13000	13000	1100	2400	LQM S4ULs 2015
Aliphatic EC16-EC35	mg/kg	1000000	1000000	250000	250000	65000	92000	LQM S4ULs 2015
Aliphatic EC35-EC44	mg/kg	1000000	1000000	250000	270000	65000	92000	LQM S4ULs 2015
Aromatic C5-C7	mg/kg	26000	46000	56000	56000	370	690	LQM S4ULs 2015
Aromatic C7-C8	mg/kg	56000	110000	56000	56000	860	1800	LQM S4ULs 2015
Aromatic C8-C10	mg/kg	3500	8100	5000	5000	47	110	LQM S4ULs 2015
Aromatic C10-C12	mg/kg	16000	28000	5000	5000	250	590	LQM S4ULs 2015

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	%	1	2.5	1	2.5	1	2.5	
Aromatic C12-C16	mg/kg	36000	37000	5100	5100	1800	2300	LQM S4ULs 2015
Aromatic C16-C21	mg/kg	28000	28000	3800	3800	1900	1900	LQM S4ULs 2015
Aromatic C21-C35	mg/kg	28000	28000	3800	3800	1900	1900	LQM S4ULs 2015
Aromatic C35-C44	mg/kg	28000	28000	3800	3800	1900	1900	LQM S4ULs 2015
Benzene	mg/kg	27	47	72	72	0.38	0.7	LQM S4ULs 2015
Toluene	mg/kg	56000	110000	56000	56000	880	1900	LQM S4ULs 2015
Ethyl Benzene	mg/kg	5700	13000	24000	24000	83	190	LQM S4ULs 2015
Xylene - o	mg/kg	6200	14000	41000	42000	82	190	LQM S4ULs 2015
Xylene - m	mg/kg	6600	15000	41000	42000	88	210	LQM S4ULs 2015
Xylene - p	mg/kg	5900	14000	41000	42000	79	180	LQM S4ULs 2015
MTBE (Methyl tert-butyl ether)	mg/kg	7900	13000					CL:AIRE 2009
Naphthalene	mg/kg	190	460	4900	4900	2.3	5.6	LQM S4ULs 2015
Acenaphthylene	mg/kg	83000	97000	15000	15000	2900	4600	LQM S4ULs 2015
Acenaphthene	mg/kg	84000	97000	15000	15000	3000	4700	LQM S4ULs 2015
Fluorene	mg/kg	63000	68000	9900	9900	2800	3800	LQM S4ULs 2015
Phenanthrene	mg/kg	22000	22000	3100	3100	1300	1500	LQM S4ULs 2015

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	%	1	2.5	1	2.5	1	2.5	
Anthracene	mg/kg	520000	540000	74000	74000	31000	35000	LQM S4ULs 2015
Fluoranthene	mg/kg	23000	23000	3100	3100	1500	1600	LQM S4ULs 2015
Pyrene	mg/kg	54000	54000	7400	7400	3700	3800	LQM S4ULs 2015
Benzo(a)anthracene	mg/kg	170	170	29	29	11	14	LQM S4ULs 2015
Chrysene	mg/kg	350	350	57	57	30	31	LQM S4ULs 2015
Benzo(b)fluoranthene	mg/kg	44	44	7.1	7.2	3.9	4	LQM S4ULs 2015
Benzo(k)fluoranthene	mg/kg	1200	1200	190	190	110	110	LQM S4ULs 2015
Benzo(a)pyrene	mg/kg	35	35	5.7	5.7	3.2	3.2	LQM S4ULs 2015
Indeno(1,2,3-cd)pyrene	mg/kg	500	510	82	82	45	46	LQM S4ULs 2015
Di-benzo(a.h.)anthracene	mg/kg	3.5	3.6	0.57	0.57	0.31	0.32	LQM S4ULs 2015
Benzo(g.h.i.) Perylene	mg/kg	3900	4000	640	640	360	360	LQM S4ULs 2015
Phenol	mg/kg	760	1500	760	1500	750	1300	LQM S4ULs 2015
Pentachlorophenol (PCP)	mg/kg	400	400	60	60	27	29	LQM S4ULs 2015
1,1,2,2 Tetrachloroethane	mg/kg	270	550	1400	1400	3.9	8	LQM S4ULs 2015
1,1,1,2 Tetrachloroethane	mg/kg	110	250	1400	1400	1.5	3.5	LQM S4ULs 2015
1,1,1 Trichloroethane	mg/kg	660	1300	140000	140000	9	18	LQM S4ULs 2015

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	%	1	2.5	1	2.5	1	2.5	
Trichloroethene	mg/kg	1.2	2.6	120	120	0.017	0.036	LQM S4ULs 2015
Tetrachloromethane (Carbon Tetrachloride)	mg/kg	2.9	6.3	890	920	0.026	0.056	LQM S4ULs 2015
1,2- Dichloroethane	mg/kg	0.67	0.97	29	29	0.0092	0.013	LQM S4ULs 2015
Chloroethene (Vinyl chloride)	mg/kg	0.059	0.077	3.5	3.5	0.00077	0.001	LQM S4ULs 2015
Trichloroethene	mg/kg	1.2	2.6	120	120	0.017	0.036	LQM S4ULs 2015
Tetrachloroethene	mg/kg	19	42	1400	1400	0.18	0.4	LQM S4ULs 2015
Trichloromethane (Chloroform)	mg/kg	99	170	2500	2500	1.2	2.1	LQM S4ULs 2015
Sum of PCDDs, PCDFs and dioxins like PCBs	mg/kg							CLEA SGVs 2009
Isopropylbenzene	mg/kg	1400	3300			12	28	CL:AIRE 2009
Propylbenzene	mg/kg	4100	9700			40	97	CL:AIRE 2009
Styrene	mg/kg	3300	6500			35	78	CL:AIRE 2009
Bromobenzene	mg/kg	97	220			0.91	2.1	CL:AIRE 2009
1,1,2 Trichloroethane	mg/kg	94	190			0.88	1.8	CL:AIRE 2009
1,1-Dichloroethane	mg/kg	280	450			2.5	4.1	CL:AIRE 2009
1,1-Dichloroethene	mg/kg	26	46			0.23	0.41	CL:AIRE 2009

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	%	1	2.5	1	2.5	1	2.5	
1,2,4-Trimethylbenzene	mg/kg	42	99			0.41	0.99	CL:AIRE 2009
1,2-Dichloropropane	mg/kg	3.3	5.9			0.024	0.042	CL:AIRE 2009
2-Chloronaphthalene	mg/kg	390	960			3.8	9.3	CL:AIRE 2009
Bromodichloromethane	mg/kg	2.1	3.7			0.019	0.034	CL:AIRE 2009
Bromoform	mg/kg	760	1500			5.2	11	CL:AIRE 2009
Chloroethane	mg/kg	960	1300			8.4	11	CL:AIRE 2009
Chloromethane	mg/kg	1	1.2			0.0085	0.0099	CL:AIRE 2009
Cis 1,2 Dichloroethene	mg/kg	14	24			0.12	0.2	CL:AIRE 2009
Dichloromethane	mg/kg	270	360			2.1	2.8	CL:AIRE 2009
Hexachloroethane	mg/kg	22	53			0.22	0.54	CL:AIRE 2009
Trans 1,2 Dichloroethene	mg/kg	22	40			0.19	0.35	CL:AIRE 2009
Bis (2-ethylhexyl) phthalate	mg/kg	85000	86000			2700	2800	CL:AIRE 2009
Butyl benzyl phthalate	mg/kg	940000	940000			42000	44000	CL:AIRE 2009
Diethyl Phthalate	mg/kg	150000	220000			1800	3500	CL:AIRE 2009
Di-n-butyl phthalate	mg/kg	15000	15000			450	450	CL:AIRE 2009
Di-n-octyl phthalate	mg/kg	89000	89000			3400	3400	CL:AIRE 2009

Proposed End Use	units	Commercial		POS(resi)		Residential without plant uptake		Source
Soil Organic Matter Content	**%**	**1**	**2.5**	**1**	**2.5**	**1**	**2.5**	
Biphenyl	mg/kg	18000	33000			220	500	CL:AIRE 2009
2,4-Dinitrotoluene	mg/kg	3700	3700			170	170	CL:AIRE 2009
2,6-Dinitrotoluene	mg/kg	1900	1900			78	84	CL:AIRE 2009
Tributyl tin oxide	mg/kg	130	180			1.4	3.1	CL:AIRE 2009

Soil Contamination – Risk of Harm to Property

Structures and Underground Services

Buried Concrete

BRE Special Digest 1 (2005), 3rd Edition, entitled *Concrete in aggressive ground*, provides guidance on the specification for concrete for installation in natural ground and in brownfield locations. The procedures given for the ground assessment and concrete specification cover the fairly common occurrences of sulfates, sulfides and acids, and the more rarely occurring aggressive carbon dioxide found in some ground and surface waters, which affects concrete foundations and sub-structures. It gives procedures for specification of concrete and applies to both buildings and civil engineering construction.

Water Supply Pipes

Guidance is provided in the UK Water Industry Research (UKWIR) report entitled *"Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites"* Report Ref. No. 10/WM/03/21, 2010.

Guidance is provided in the November 2010 Q&A Update and the Questions and Answers Sheet dated 4 May 2011 included at the back of the UKWIR report. Item 3 has been reproduced here:

Item	Question	Answer
3	Following the flow chart in Figure 1.1, **would it be acceptable to not undertake a site investigation and specify the use of barrier pipes** (these seem to be suitable for all conditions)? Would it be acceptable to adopt the blanket approach of always using barrier pipes at Brownfield sites, negating the need for a desk study or intrusive investigation?	The UKWIR project steering group decided that barrier pipes would provide sufficient protection for the supply of drinking water in all Brownfield site conditions. It is therefore reasonable to expect that water companies will accept the use of barrier pipe in all situations as a blanket approach

Soil Contamination – Risk of Combustion

The combustibility of soils is a complex function of soil type, energy content, and availability of oxygen. The Building Research Establishment (BRE) has published guidance based on Calorific Value (i.e. energy content, alone), namely *IP 2/87, Fire and explosion hazards associated with the redevelopment of contaminated land*. This document provides a level below which combustibility is unlikely (2MJ/kg) and a level above which combustibility is likely (10MJ/kg). In the range between these two values combustibility is uncertain. Therefore, where the lower value is exceeded, the other key factors mentioned above need to be considered.

Soil Contamination – Risk of Harm to Vegetation

Where there is topsoil present on Site and it is being considered for reuse in landscaped areas then it needs to be assessed for its suitability for use by an appropriately qualified specialist. Topsoil can be both naturally-occurring and manufactured. The requirements for topsoil that is to be reused on site are specified in BS3882:2007 and cover a range of properties including texture, organic matter content, grading, pH, nutrients and phytotoxic contaminants. The specification for phytotoxic contaminants is reproduced in the table below:

Phytotoxic Contaminants (by soil pH) for Topsoil

Contaminant*	pH <6	pH 6.0 to 7.0	pH >7
Zinc (Nitric acid extractable**)	<200mg/kg	<200mg/kg	<300mg/kg
Copper (Nitric acid extractable**)	<100mg/kg	<135mg/kg	<200mg/kg
Nickel (Nitric acid extractable**)	<60mg/kg	<75mg/kg	<110mg.kg

Footnotes: * The lower of the Generic Assessment Criteria for chemical contaminants (human health and the environment) and phytotoxicity shall be used for topsoil

** The method of testing is given in Annex D to BS3882:2007 Specification for topsoil and requirements for use.

The risk to human health and the environment needs to be considered as well as phytotoxicity and this will be carried out using the Generic Assessment Criteria selected for these risks as described elsewhere in this appendix and this report.

In order to assess the suitability of topsoil to be reused the full range of testing specified needs to be carried out and assessed by an appropriately qualified specialist.

Controlled Waters Generic Assessment Criteria

The Screening Values adopted by Waterman for ground and surface water quality have been selected on the basis of the water quality standards that apply at the controlled water receptor considered to be at potential risk of harm.

Surface Waters

The Water Framework Directive (WFD) (2000/60/EC) was originally introduced in 2000, however a raft of Daughter Directives have been brought in to address the objectives the WFD originally set out. Over time the WFD and its Daughter Directives have gradually replaced number of the existing Directives including the Dangerous Substances Directive (DSD) and Surface Water Directive (SWD).

The WFD identifies 'Priority' and 'Priority Hazardous Substances', to which Environmental Quality Standards (EQS) have been determined. The WFD EQS do not provide a full complement of applicable values to adopt. In the absence of an EQS, values under the replaced Surface Water Directive have been used as a guide.

Groundwater

The EU Drinking Water Directive (DWD) (98/83/EC) lays out the standards for drinking water EU wide. The UK have followed the EU regulations and translated the Directive into the Water Supply (Water Quality) Regulations England 2000. The UK Drinking Water Standards are the most relevant criteria to use for the assessment of risks to water destined for potable sources.

The WFD, to date, have not set threshold values for groundwater on a river basin basis.

TPH and PAHs

A suitable risk based assessment criteria for risks from TPH in both surface waters and groundwater are not available in the UK. The WHO have produced a health based risk assessment for drinking waters with regard to TPH “Petroleum Products in Drinking Waters, Background document for development of WHO Guidelines for Drinking-water Quality. Ref. WHO/SDE/WSH/05.08/123”.