

Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9324-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9324-1
No. of Samples: 1
Date Received: 02.07.2015
Date completed instructions received: 02.07.2015
Date of analysis: 02.07-10.07.2015

Report Details

Report Date: 15.07.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9324-C1
Sample Name		9324-WAC1
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	121%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	118%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1
PCB		
Total PCB		<0.6
2-fluorobiphenyl	surr.	91%

Lab ID	PQL (mg/kg)	9324-C1
Sample Name		9324-WAC1
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	105%
Metals		
Arsenic	2	7.9
Cadmium	0.3	<0.3
Chromium	5	11
Copper	5	50
Lead	10	41
Mercury	0.2	<0.2
Nickel	10	32
Zinc	5	89
Moisture	%	16%
pH (average for 3 measurements)		8.0
EC	[dS/m]	0.13

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	109%	111%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	114%	112%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	109%	107%	0.4	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	110%	111%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	114%	112%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	114%	112%	0.4	<0.3	ACCEPT
p-Terphenyl-d14	surr.		106%	105%	119%	127%	
OCPs							
aldrin	0.1	<0.1	114%	112%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	96%	106%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	119%	117%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		115%	115%	128%	131%	
OPPs							
chlorpyrifos	0.1	<0.1	103%	103%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	101%	103%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		91%	91%	95%	96%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	120%	118%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	103%	109%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	92%	93%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	93%	96%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	92%	92%	<2	<2	ACCEPT
o-Xylene	1	<1	93%	92%	<1	<1	ACCEPT
Fluorobenzene	surr.		94%	98%	98%	98%	
Metals							
Arsenic	2	<2	83%	87%	3.5	3.8	ACCEPT
Cadmium	0.3	<0.3	105%	108%	<0.3	<0.3	ACCEPT
Chromium	5	<5	104%	112%	15	13	ACCEPT
Copper	5	<5	99%	109%	21	19	ACCEPT
Lead	10	<10	105%	119%	39	43	ACCEPT
Mercury	0.2	<0.2	94%	96%	<0.2	<0.2	ACCEPT
Nickel	10	<10	96%	107%	13	<10	ACCEPT
Zinc	5	<5	95%	98%	55	54	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	121%	127%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	118%	122%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	91%	94%	

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	103%	105%	
Metals				
Arsenic	2	7.9	9.8	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	11	12	ACCEPT
Copper	5	50	45	ACCEPT
Lead	10	41	34	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	32	27	ACCEPT
Zinc	5	89	91	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9324-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9324-2
No. of Samples: 2
Date Received: 09.07.2015
Date completed instructions received: 09.07.2015
Date of analysis: 09.07-14.07.2015

Report Details

Report Date: 15.07.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



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measurements included in this document are traceable
to Australian/national standards.
Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9324-C2	9324-C3
Sample Name		9324-WAC2	9324-WAC3
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	131%	128%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	133%	128%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1
PCB			
Total PCB		<0.6	<0.6
2-fluorobiphenyl	surr.	117%	113%

Lab ID	PQL (mg/kg)	9324-C2	9324-C3
Sample Name		9324-WAC2	9324-WAC3
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	96%	113%
Metals			
Arsenic	2	4.8	<2
Cadmium	0.3	<0.3	<0.3
Chromium	5	12	<5
Copper	5	43	23
Lead	10	46	43
Mercury	0.2	<0.2	<0.2
Nickel	10	33	<10
Zinc	5	87	48
Moisture	%	22%	16%
pH (average for 3 measurements)		5.4	9.3
EC	[dS/m]	0.05	0.13

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	114%	118%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	118%	122%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	113%	119%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	117%	121%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	118%	122%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	120%	126%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		109%	117%	130%	126%	
OCPs							
aldrin	0.1	<0.1	119%	124%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	93%	102%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	123%	128%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		120%	126%	126%	125%	
OPPs							
chlorpyrifos	0.1	<0.1	111%	116%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	108%	114%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		99%	106%	113%	109%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	124%	121%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	100%	95%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	103%	96%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	102%	99%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	101%	95%	<2	<2	ACCEPT
o-Xylene	1	<1	103%	100%	<1	<1	ACCEPT
Fluorobenzene	surr.		102%	96%	121%	110%	
Metals							
Arsenic	2	<2	87%	85%	6.4	12	ACCEPT
Cadmium	0.3	<0.3	105%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	113%	115%	<5	9.0	ACCEPT
Copper	5	<5	103%	103%	13	17	ACCEPT
Lead	10	<10	110%	114%	19	22	ACCEPT
Mercury	0.2	<0.2	88%	93%	<0.2	<0.2	ACCEPT
Nickel	10	<10	102%	105%	<10	<10	ACCEPT
Zinc	5	<5	91%	87%	<5	<5	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

Lab ID	PQL (mg/kg)	Batch Duplicate 2-Value 1	Batch Duplicate 2-Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	137%	137%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	132%	130%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	117%	114%	

Lab ID	PQL (mg/kg)	Batch Duplicate 2-Value 1	Batch Duplicate 2-Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	102%	118%	
Metals				
Arsenic	2	9.6	6.1	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	15	12	ACCEPT
Copper	5	26	24	ACCEPT
Lead	10	14	15	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	26	24	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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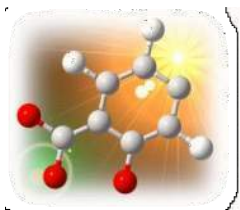


****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9324-3

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Ridha Hussain

Sample Log In Details

Your reference: 9324-3
No. of Samples: 7
Date Received: 30.07.2015
Date completed instructions received: 30.07.2015
Date of analysis: 30.07-03.08.2015

Report Details

Report Date: 04.08.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



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The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9324-C4	9324-C5	9324-C6	9324-C7
Sample Name		9324-WAC5	9324-WAC6	9324-WAC7	9324-WAC8
PAH					
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	126%	134%	134%	134%
OCPs					
aldrin	0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1	<0.1
TCMX	surr.	120%	123%	128%	127%
OPPs					
chlorpyrifos	0.1	<0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1	<0.1
PCB					
Total PCB		<0.6	<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	91%	89%	93%	93%

Lab ID	PQL (mg/kg)	9324-C4	9324-C5	9324-C6	9324-C7
Sample Name		9324-WAC5	9324-WAC6	9324-WAC7	9324-WAC8
TRH					
>C6-C10	35	<35	<35	<35	<35
>C10-C16	50	<50	<50	<50	<50
>C16-C34	100	130	<100	<100	<100
>C34-C40	100	<100	<100	<100	<100
BTEX					
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2	<2
o-Xylene	1	<1	<1	<1	<1
Fluorobenzene	surr.	122%	144%	115%	129%
Metals					
Arsenic	2	13	16	12	7.9
Cadmium	0.3	<0.3	<0.3	<0.3	<0.3
Chromium	5	<5	<5	<5	<5
Copper	5	24	18	43	11
Lead	10	11	17	31	10
Mercury	0.2	<0.2	<0.2	<0.2	<0.2
Nickel	10	<10	<10	22	<10
Zinc	5	39	27	89	10
Moisture	%	7%	8%	10%	11%

Lab ID	PQL (mg/kg)	9324-C8	9324-C9	9324-C10
Sample Name		9324-WAC9	9324-WAC10	9324-WAC11
PAH				
Acenaphthene	0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	136%	133%	130%
OCPs				
aldrin	0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1
TCMX	surr.	129%	129%	127%
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1
PCB				
Total PCB		<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	93%	95%	94%

Lab ID	PQL (mg/kg)	9324-C8	9324-C9	9324-C10
Sample Name		9324-WAC9	9324-WAC10	9324-WAC11
TRH				
>C6-C10	35	<35	<35	<35
>C10-C16	50	<50	<50	<50
>C16-C34	100	<100	<100	<100
>C34-C40	100	<100	<100	<100
BTEX				
Benzene	0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2
o-Xylene	1	<1	<1	<1
Fluorobenzene	surr.	106%	120%	119%
Metals				
Arsenic	2	6.3	9.4	13
Cadmium	0.3	<0.3	<0.3	<0.3
Chromium	5	<5	5.4	17
Copper	5	65	36	20
Lead	10	180	28	20
Mercury	0.2	<0.2	<0.2	<0.2
Nickel	10	<10	28	12
Zinc	5	130	96	32
Moisture	%	16%	8%	13%

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	119%	113%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	124%	116%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	0.5	0.5	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	0.5	0.5	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	0.6	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	0.4	0.5	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	117%	105%	1.1	1.0	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	0.5	0.5	ACCEPT
Naphthalene	0.3	<0.3	118%	111%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	114%	123%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	123%	110%	1.0	1.1	ACCEPT
p-Terphenyl-d14	surr.		114%	110%	123%	121%	
OCPs							
aldrin	0.1	<0.1	126%	118%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	98%	112%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	128%	119%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		125%	118%	118%	119%	
OPPs							
chlorpyrifos	0.1	<0.1	111%	106%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	111%	104%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		87%	82%	88%	89%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	106%	98%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	110	100	ACCEPT
BTEX							
Benzene	0.5	<0.5	90%	115%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	88%	110%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	87%	111%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	86%	109%	<2	<2	ACCEPT
o-Xylene	1	<1	88%	109%	<1	<1	ACCEPT
Fluorobenzene	surr.		92%	114%	112%	123%	
Metals							
Arsenic	2	<2	96%	118%	<2	<2	ACCEPT
Cadmium	0.3	<0.3	118%	123%	<0.3	<0.3	ACCEPT
Chromium	5	<5	116%	120%	16	21	ACCEPT
Copper	5	<5	109%	123%	36	52	ACCEPT
Lead	10	<10	120%	116%	100	120	ACCEPT
Mercury	0.2	<0.2	100%	103%	<0.2	<0.2	ACCEPT
Nickel	10	<10	115%	113%	22	35	ACCEPT
Zinc	5	<5	109%	103%	100	250	FAIL
Moisture	%						

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	134%	135%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	128%	128%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	93%	92%	

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	110%	115%	
Metals				
Arsenic	2	12	20	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	43	52	ACCEPT
Lead	10	31	36	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	22	33	ACCEPT
Zinc	5	89	110	ACCEPT
Moisture	%			

Comment:
FAIL caused by inhomogenous matrix

General Comments and Glossary

Tests not covered by NATA are denoted with *.
Samples are analysed on "as received" basis.
Samples were delivered chilled
Samples were preserved in correct manner
Sample containers for volatile analysis were received with minimal headspace
Samples were analysed within holding time
Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test
>: Greater than
LCS: Laboratory Control Sample
NT: Not tested
<: Less than
RPD: Relative Percent Difference
NA: Test not required
PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.
Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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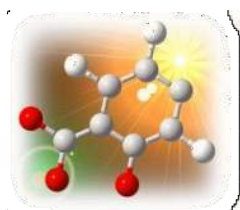


****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9324-4

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Ridha Hussain

Sample Log In Details

Your reference: 9324-4
No. of Samples: 1
Date Received: 26.08.2015
Date completed instructions received: 26.08.2015
Date of analysis: 26.08-28.08.2015

Report Details

Report Date: 31.08.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or
measurements included in this document are traceable
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Tests not covered by NATA are denoted with *.



Lab ID	PQL (mg/kg)	9324-C11
Sample Name		9324-WAC4
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	112%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	106%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1
PCB		
Total PCB		<0.6
2-fluorobiphenyl	surr.	87%

Lab ID	PQL (mg/kg)	9324-C11
Sample Name		9324-WAC4
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	119%
Metals		
Arsenic	2	5.0
Cadmium	0.3	<0.3
Chromium	5	6.6
Copper	5	44
Lead	10	22
Mercury	0.2	<0.2
Nickel	10	27
Zinc	5	74
Moisture	%	9%
pH (average for 3 measurements)		8.9
EC	[dS/m]	0.38

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	114%	117%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	117%	113%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	116%	117%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	106%	111%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	117%	117%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	121%	123%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		119%	127%	112%	115%	
OCPs							
aldrin	0.1	<0.1	120%	122%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	83%	97%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	122%	123%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		118%	120%	106%	109%	
OPPs							
chlorpyrifos	0.1	<0.1	105%	106%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	107%	109%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		85%	90%	87%	90%	

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	117%	117%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	101%	114%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	99%	123%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	97%	112%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	95%	101%	<2	<2	ACCEPT
o-Xylene	1	<1	97%	102%	<1	<1	ACCEPT
Fluorobenzene	surr.		99%	111%	95%	94%	
Metals							
Arsenic	2	<2	88%	96%	5.0	8.2	ACCEPT
Cadmium	0.3	<0.3	103%	103%	<0.3	<0.3	ACCEPT
Chromium	5	<5	102%	113%	6.6	6.6	ACCEPT
Copper	5	<5	98%	104%	44	46	ACCEPT
Lead	10	<10	101%	111%	22	22	ACCEPT
Mercury	0.2	<0.2	114%	116%	<0.2	<0.2	ACCEPT
Nickel	10	<10	102%	115%	27	28	ACCEPT
Zinc	5	<5	100%	93%	74	83	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	NT	NT	NT
Acenaphthylene	0.3	NT	NT	NT
Anthracene	0.3	NT	NT	NT
Benzo[a]anthracene	0.3	NT	NT	NT
Benzo[a]pyrene	0.3	NT	NT	NT
Benzo[b]fluoranthene	0.3	NT	NT	NT
Benzo[g,h,i]perylene	0.3	NT	NT	NT
Benzo[k]fluoranthene	0.3	NT	NT	NT
Chrysene	0.3	NT	NT	NT
Dibenzo[a,h]anthracene	0.3	NT	NT	NT
Fluoranthene	0.3	NT	NT	NT
Fluorene	0.3	NT	NT	NT
Indeno(1,2,3-cd)pyrene	0.3	NT	NT	NT
Naphthalene	0.3	NT	NT	NT
Phenanthrene	0.3	NT	NT	NT
Pyrene	0.3	NT	NT	NT
p-Terphenyl-d14	surr.	NT	NT	
OCPs				
aldrin	0.1	NT	NT	NT
a-BHC	0.1	NT	NT	NT
b-BHC	0.1	NT	NT	NT
d-BHC	0.1	NT	NT	NT
g-BHC (lindane)	0.1	NT	NT	NT
cis-chlordane	0.1	NT	NT	NT
trans-chlordane	0.1	NT	NT	NT
4,4'-DDD	0.1	NT	NT	NT
4,4'-DDE	0.1	NT	NT	NT
4,4'-DDT	0.1	NT	NT	NT
dieldrin	0.1	NT	NT	NT
endosulfan I	0.2	NT	NT	NT
endosulfan II	0.2	NT	NT	NT
endosulfan sulfate	0.1	NT	NT	NT
endrin	0.2	NT	NT	NT
endrin aldehyde	0.1	NT	NT	NT
endrin ketone	0.1	NT	NT	NT
heptachlor	0.1	NT	NT	NT
heptachlor epoxide	0.1	NT	NT	NT
hexachlorobenzene	0.1	NT	NT	NT
methoxychlor	0.1	NT	NT	NT
TCMX	surr.	NT	NT	
OPPs				
chlorpyrifos	0.1	NT	NT	NT
chlorpyrifos methyl	0.1	NT	NT	NT
diazinon	0.1	NT	NT	NT
fenchlorphos	0.1	NT	NT	NT
methyl parathion	0.1	NT	NT	NT
prophos	0.1	NT	NT	NT
tributylphosphorotrithioite	0.1	NT	NT	NT
PCB				
Total PCB		NT	NT	NT
2-fluorobiphenyl	surr.	NT	NT	

Lab ID	PQL (mg/kg)	Batch Duplicate 2-Value 1	Batch Duplicate 2-Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	NT	NT	NT
>C16-C34	100	NT	NT	NT
>C34-C40	100	NT	NT	NT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	97%	94%	
Metals				
Arsenic	2	NT	NT	NT
Cadmium	0.3	NT	NT	NT
Chromium	5	NT	NT	NT
Copper	5	NT	NT	NT
Lead	10	NT	NT	NT
Mercury	0.2	NT	NT	NT
Nickel	10	NT	NT	NT
Zinc	5	NT	NT	NT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			

General Comments and Glossary

Tests not covered by NATA are denoted with *.
Samples are analysed on "as received" basis.
Samples were delivered chilled
Samples were preserved in correct manner
Sample containers for volatile analysis were received with minimal headspace
Samples were analysed within holding time
Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test
>: Greater than
LCS: Laboratory Control Sample
NT: Not tested
<: Less than
RPD: Relative Percent Difference
NA: Test not required
PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.
Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9324 ASB 1

Date Received: 06.07.2015
Date Analysed: 22.07.2015
Report Date: 22.07.2015
Client: GHDP
Job Location: Gregory Hills, NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9324-Asb1	Soil	139 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9324 ASB 2

Date Received: 07.07.2015
Date Analysed: 22.07.2015
Report Date: 22.07.2015
Client: GHDP
Job Location: Gregory Hills, NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

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Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9324-Asb2	Soil	76 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9324 ASB 3

Date Received: 26.08.2015
Date Analysed: 28.08.2015
Report Date: 28.08.2015
Client: GHDP
Job Location: Gregory Hills, NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9324-Asb3	Soil	148 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb4	Soil	116 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9324 ASB 4

Date Received: 29.07.2015
Date Analysed: 10.08.2015
Report Date: 11.08.2015
Client: GHDP
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9324-Asb5	Soil	90 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb6	Soil	126 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb7	Soil	105 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb8	Soil	106 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb9	Soil	119 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb10	Soil	94 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9324-Asb11	Soil	124 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Z Ismail

Report 462259-S
Project name 9265
Received Date Jun 19, 2015

Client Sample ID			9265-SAL1	9265-SAL2
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S15-Jn17107	S15-Jn17108
Date Sampled			Jun 19, 2015	Jun 19, 2015
Test/Reference	LOR	Unit		
Chloride	10	mg/kg	54	280
Sulphate (as SO ₄)	10	mg/kg	77	110
% Moisture	0.1	%	25	23

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Sydney	Jun 22, 2015	28 Day
- Method: E033 /E045 /E047 Chloride			
Sulphate (as SO ₄)	Sydney	Jun 22, 2015	28 Day
- Method: E045 Sulphate			
% Moisture	Sydney	Jun 19, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9265

Order No.:
Report #: 462259
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Jun 19, 2015 4:39 PM
Due: Jun 24, 2015
Priority: 3 Day
Contact Name: Z Ismail

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Chloride	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted							
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217					X	X	X
Brisbane Laboratory - NATA Site # 20794							
External Laboratory							
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
9265-SAL1	Jun 19, 2015		Soil	S15-Jn17107	X	X	X
9265-SAL2	Jun 19, 2015		Soil	S15-Jn17108	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chloride			mg/kg	< 10			10	Pass	
Sulphate (as SO ₄)			mg/kg	< 10			10	Pass	
LCS - % Recovery									
Chloride			%	104			70-130	Pass	
Sulphate (as SO ₄)			%	104			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S15-Jn15267	NCP	%	106			70-130	Pass	
Sulphate (as SO ₄)	S15-Jn15267	NCP	%	107			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-Jn15266	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Sulphate (as SO ₄)	S15-Jn15266	NCP	mg/kg	36	37	3.0	30%	Pass	
% Moisture	S15-My23086	NCP	%	18	19	2.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)



Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: C Thompson

Report 442412-S
Project name 8513
Received Date Dec 15, 2014

Client Sample ID			8513-SAL1	8513-SAL2	8513-SAL3
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S14-De13231	S14-De13232	S14-De13233
Date Sampled			Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit			
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	115	125	112
Chloride	10	mg/kg	13	24	35
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Sulphate (as S)	10	mg/kg	20	17	37
% Moisture	0.1	%	12	6.4	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polychlorinated Biphenyls (PCB)	Sydney	Dec 16, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Chloride	Sydney	Dec 17, 2014	28 Day
- Method: E033 /E045 /E047 Chloride			
Phenolics (total)	Sydney	Dec 17, 2014	14 Day
- Method: E041 /E055 Total Phenolics			
Sulphate (as S)	Sydney	Dec 17, 2014	28 Day
- Method: E045 Sulphate			
% Moisture	Sydney	Dec 15, 2014	14 Day
- Method: LTM-GEN-7080 'Moisture Content in Soil or other Solid Matrices by Gravimetry'			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 8513

Order No.:
Report #: 442412
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Dec 15, 2014 2:15 PM
Due: Dec 22, 2014
Priority: 5 Day
Contact Name: C Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Chloride	Phenolics (total)	Sulphate (as S)	Polychlorinated Biphenyls (PCB)
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
8513-SAL1	Not Provided		Soil	S14-De13231	X	X	X	X	X
8513-SAL2	Not Provided		Soil	S14-De13232	X	X	X	X	X
8513-SAL3	Not Provided		Soil	S14-De13233	X	X	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Polychlorinated Biphenyls (PCB)										
Aroclor-1016				mg/kg	< 0.5			0.5	Pass	
Aroclor-1232				mg/kg	< 0.5			0.5	Pass	
Aroclor-1242				mg/kg	< 0.5			0.5	Pass	
Aroclor-1248				mg/kg	< 0.5			0.5	Pass	
Aroclor-1254				mg/kg	< 0.5			0.5	Pass	
Aroclor-1260				mg/kg	< 0.5			0.5	Pass	
Total PCB				mg/kg	< 0			0.5	Pass	
Method Blank										
Chloride				mg/kg	< 10			10	Pass	
Phenolics (total)				mg/kg	< 0.1			0.1	Pass	
Sulphate (as S)				mg/kg	< 10			10	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				%	85			70-130	Pass	
LCS - % Recovery										
Chloride				%	108			70-130	Pass	
Phenolics (total)				%	77			70-130	Pass	
Sulphate (as S)				%	102			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
				Result 1						
Chloride	S14-De13231	CP	%	111				70-130	Pass	
Sulphate (as S)	S14-De13231	CP	%	105				70-130	Pass	
Spike - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				Result 1						
S14-De13232				CP	%	70		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Polychlorinated Biphenyls (PCB)										
				Result 1	Result 2	RPD				
Aroclor-1016	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Aroclor-1232	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Aroclor-1242	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Aroclor-1248	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Aroclor-1254	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Aroclor-1260	S14-De13231	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass		
Duplicate										
				Result 1	Result 2	RPD				
Chloride	S14-De13231	CP	mg/kg	13	13	<1	30%	Pass		
Phenolics (total)	S14-De13231	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass		
Sulphate (as S)	S14-De13231	CP	mg/kg	20	16	24	30%	Pass		
% Moisture	S14-De15145	NCP	%	21	18	16	30%	Pass		

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)



Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8513-WAC1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8513-WAC1
No. of Samples: 3
Date Received: 03.12.2014
Date completed instructions received: 03.12.2014
Date of analysis: 03.12-12.12.2014

Report Details

Report Date: 23.12.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8513-C1	8513-C2	8513-C3
Sample Name		8513-WAC1	8513-WAC2	8513-WAC3
PAH				
Acenaphthene	0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	95%	98%	97%
OCPs				
aldrin	0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1
TCMX	surr.	115%	119%	114%
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8513-C1	8513-C2	8513-C3
Sample Name		8513-WAC1	8513-WAC2	8513-WAC3
TRH				
>C6-C10	35	<35	<35	<35
>C10-C16	50	<50	<50	<50
>C16-C34	100	<100	<100	<100
>C34-C40	100	<100	<100	<100
BTEX				
Benzene	0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2
o-Xylene	1	<1	<1	<1
Fluorobenzene	surr.	95%	102%	105%
Metals				
Arsenic	2	8.9	5.1	8.2
Cadmium	0.3	<0.3	<0.3	<0.3
Chromium	5	<5	<5	69
Copper	5	<5	21	49
Lead	10	21	17	33
Mercury	0.2	<0.2	<0.2	<0.2
Nickel	10	<10	<10	35
Zinc	5	<5	34	51
Moisture	%	13%	8%	15%
pH		5.65	6.16	8.73
EC	[dS/m]	0.08	0.07	0.22
Soil Texture Group		Light Clays	Light Clays	Light Clays
Approximate Clay		35-45	35-45	35-45
EC1:5 to ECe conversion factor		8.6	8.6	8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	108%	119%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	116%	119%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	107%	113%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	92%	98%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	116%	119%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	105%	113%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		123%	136%	85%	88%	
OCPs							
aldrin	0.1	<0.1	122%	131%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	92%	100%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	115%	126%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		108%	115%	116%	111%	ACCEPT
OPPs							
chlorpyrifos	0.1	<0.1	115%	115%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	119%	121%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	90%	83%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	97%	98%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	98%	100%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	97%	101%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	96%	100%	<2	<2	ACCEPT
o-Xylene	1	<1	98%	102%	<1	<1	ACCEPT
Fluorobenzene	surr.		100%	100%	103%	115%	
Metals							
Arsenic	2	<2	81%	73%	22	12	FAIL
Cadmium	0.3	<0.3	95%	93%	<0.3	<0.3	ACCEPT
Chromium	5	<5	124%	127%	<5	10	ACCEPT
Copper	5	<5	92%	95%	35	25	ACCEPT
Lead	10	<10	119%	118%	59	53	ACCEPT
Mercury	0.2	<0.2	107%	101%	<0.2	<0.2	ACCEPT
Nickel	10	<10	74%	77%	<10	<10	ACCEPT
Zinc	5	<5	94%	102%	65	52	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	93%	94%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	119%	120%	ACCEPT
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	124%	120%	
Metals				
Arsenic	2	7.2	4.9	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	22	20	ACCEPT
Copper	5	9.1	12	ACCEPT
Lead	10	20	20	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	12	12	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:

FAIL caused by inhomogenous matrix

Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8513 ASB 1

Date Received: 03.12.2014
Date Analysed: 04.12.2014
Report Date: 08.12.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8513-Asb1	Soil	56 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8513-Asb2	Soil	93 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8513-Asb3	Soil	61 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: C Thompson

Report 439959-S
Project name 8361
Received Date Nov 24, 2014

Client Sample ID			8361-SAL1	8361-SAL2	8361-SAL3	8361-SAL4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S14-No17638	S14-No17639	S14-No17640	S14-No17641
Date Sampled			Nov 07, 2014	Nov 07, 2014	Nov 11, 2014	Nov 17, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	124	119	128	127
Chloride	10	mg/kg	11	92	61	12
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	0.2	0.3
Sulphate (as S)	10	mg/kg	23	< 10	78	47
% Moisture	0.1	%	18	4.1	12	13

Client Sample ID			8361-SAL5	8361-SAL6
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S14-No17642	S14-No17643
Date Sampled			Nov 18, 2014	Nov 18, 2014
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls (PCB)				
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	129	128
Chloride	10	mg/kg	11	32
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1
Sulphate (as S)	10	mg/kg	15	55
% Moisture	0.1	%	15	23

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polychlorinated Biphenyls (PCB)	Sydney	Dec 01, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Chloride	Sydney	Dec 01, 2014	28 Day
- Method: E033 /E045 /E047 Chloride			
Phenolics (total)	Sydney	Dec 01, 2014	14 Day
- Method: E041 /E055 Total Phenolics			
Sulphate (as S)	Sydney	Dec 01, 2014	28 Day
- Method: E045 Sulphate			
% Moisture	Sydney	Nov 25, 2014	28 Day
- Method: E005 Moisture Content			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 8361

Order No.:
Report #: 439959
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Nov 24, 2014 12:10 PM
Due: Dec 1, 2014
Priority: 5 Day
Contact Name: C Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Chloride	Phenolics (total)	Sulphate (as S)	Polychlorinated Biphenyls (PCB)
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
8361-SAL1	Nov 07, 2014		Soil	S14-No17638	X	X	X	X	X
8361-SAL2	Nov 07, 2014		Soil	S14-No17639	X	X	X	X	X
8361-SAL3	Nov 11, 2014		Soil	S14-No17640	X	X	X	X	X
8361-SAL4	Nov 17, 2014		Soil	S14-No17641	X	X	X	X	X
8361-SAL5	Nov 18, 2014		Soil	S14-No17642	X	X	X	X	X
8361-SAL6	Nov 18, 2014		Soil	S14-No17643	X	X	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Polychlorinated Biphenyls (PCB)										
Aroclor-1016				mg/kg	< 0.5			0.5	Pass	
Aroclor-1232				mg/kg	< 0.5			0.5	Pass	
Aroclor-1242				mg/kg	< 0.5			0.5	Pass	
Aroclor-1248				mg/kg	< 0.5			0.5	Pass	
Aroclor-1254				mg/kg	< 0.5			0.5	Pass	
Aroclor-1260				mg/kg	< 0.5			0.5	Pass	
Total PCB				mg/kg	< 0.5			0.5	Pass	
Method Blank										
Chloride				mg/kg	< 10			10	Pass	
Phenolics (total)				mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				%	108			70-130	Pass	
LCS - % Recovery										
Chloride				%	97			70-130	Pass	
Phenolics (total)				%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				S14-No17287	NCP	%	102		70-130	Pass
Spike - % Recovery										
Phenolics (total)				S14-No17639	CP	%	96		70-130	Pass
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
				Result 1	Result 2	RPD				
Phenolics (total)				S14-No17638	CP	mg/kg	< 0.1	< 0.1	<1	30% Pass
% Moisture				S14-De01044	NCP	%	19	19	2.0	30% Pass
Duplicate										
Polychlorinated Biphenyls (PCB)										
Aroclor-1016				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Aroclor-1232				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Aroclor-1242				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Aroclor-1248				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Aroclor-1254				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Aroclor-1260				S14-No17639	CP	mg/kg	< 0.5	< 0.5	<1	30% Pass
Duplicate										
				Result 1	Result 2	RPD				
Chloride				S14-No17643	CP	mg/kg	32	32	1.0	30% Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)



Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8361-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8361-1
No. of Samples: 2
Date Received: 07.11.2014
Date completed instructions received: 07.11.2014
Date of analysis: 07.11-11.11.2014

Report Details

Report Date: 11.11.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8361-C1	8361-C2
Sample Name		8361-WAC1	8361-WAC2
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	75%	71%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	101%	98%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8361-C1	8361-C2
Sample Name		8361-WAC1	8361-WAC2
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	88%	100%
Metals			
Arsenic	2	16	19
Cadmium	0.3	<0.3	<0.3
Chromium	5	12	5.3
Copper	5	36	77
Lead	10	24	35
Mercury	0.2	<0.2	<0.2
Nickel	10	<10	27
Zinc	5	30	77
Moisture	%	13%	5%
pH		6.20	9.58
EC	[dS/m]	0.09	0.27
Soil Texture Group		Medium & Heavy Clays	Sandy Loams
Approximate Clay		>45	10-25
EC1:5 to ECe conversion factor		7	13.8

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	88%	85%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	98%	97%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	98%	99%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	91%	88%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	100%	96%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	92%	94%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		90%	90%	102%	94%	
OCPs							
aldrin	0.1	<0.1	110%	104%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	106%	101%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	110%	102%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		99%	95%	142%	139%	
OPPs							
chlorpyrifos	0.1	<0.1	110%	107%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	99%	95%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	88%	87%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	107%	117%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	102%	110%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	107%	113%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	111%	117%	<2	<2	ACCEPT
o-Xylene	1	<1	108%	115%	<1	<1	ACCEPT
Fluorobenzene	surr.		109%	118%	117%	97%	
Metals							
Arsenic	2	<2	112%	119%	<2	<2	ACCEPT
Cadmium	0.3	<0.3	105%	110%	<0.3	<0.3	ACCEPT
Chromium	5	<5	88%	78%	<5	<5	ACCEPT
Copper	5	<5	100%	95%	<5	<5	ACCEPT
Lead	10	<10	98%	82%	<10	<10	ACCEPT
Mercury	0.2	<0.2	90%	86%	<0.2	<0.2	ACCEPT
Nickel	10	<10	101%	97%	<10	<10	ACCEPT
Zinc	5	<5	103%	111%	9.4	16	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	91%	90%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	123%	120%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	82%	119%	
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	7.2	7.2	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	15	12	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comment:
Sandy Loams - sandy loam, fine sandy loam

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.



****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8361-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8361-2
No. of Samples: 1
Date Received: 11.11.2014
Date completed instructions received: 11.11.2014
Date of analysis: 11.11-13.11.2014

Report Details

Report Date: 13.11.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Lab ID	PQL (mg/kg)	8361-C3
Sample Name		8361-WAC3
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	0.5
Anthracene	0.3	2.6
Benzo[a]anthracene	0.3	3.1
Benzo[a]pyrene	0.3	4.5
Benzo[b]fluoranthene	0.3	5.1
Benzo[g,h,i]perylene	0.3	3.5
Benzo[k]fluoranthene	0.3	1.7
Chrysene	0.3	3.2
Dibenzo[a,h]anthracene	0.3	0.6
Fluoranthene	0.3	5.1
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	2.5
Naphthalene	0.3	<0.3
Phenanthrene	0.3	2.6
Pyrene	0.3	5.1
p-Terphenyl-d14	surr.	83%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	101%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8361-C3
Sample Name		8361-WAC3
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	130
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	120%
Metals		
Arsenic	2	2.5
Cadmium	0.3	<0.3
Chromium	5	<5
Copper	5	47
Lead	10	46
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	56
Moisture	%	17%
pH		7.72
EC	[dS/m]	0.22
Soil Texture Group		Light Clays
Approximate Clay		35-45
EC1:5 to ECe conversion factor		8.6

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	96%	91%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	99%	77%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	100%	64%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	98%	91%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	99%	77%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	98%	62%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		93%	102%	76%	72%	
OCPs							
aldrin	0.1	<0.1	115%	101%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	95%	119%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	120%	101%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		108%	94%	106%	97%	
OPPs							
chlorpyrifos	0.1	<0.1	120%	111%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	96%	94%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	102%	94%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	130	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	100%	114%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	108%	123%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	106%	119%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	106%	118%	<2	<2	ACCEPT
o-Xylene	1	<1	107%	118%	<1	<1	ACCEPT
Fluorobenzene	surr.		101%	112%	120%	123%	
Metals							
Arsenic	2	<2	89%	94%	2.5	3.8	ACCEPT
Cadmium	0.3	<0.3	103%	88%	<0.3	<0.3	ACCEPT
Chromium	5	<5	98%	98%	<5	13	ACCEPT
Copper	5	<5	99%	104%	47	38	ACCEPT
Lead	10	<10	104%	96%	46	70	ACCEPT
Mercury	0.2	<0.2	105%	104%	<0.2	<0.2	ACCEPT
Nickel	10	<10	97%	97%	<10	<10	ACCEPT
Zinc	5	<5	95%	83%	56	73	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Comment:

Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8361-3

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8361-3
No. of Samples: 1
Date Received: 17.11.2014
Date completed instructions received: 17.11.2014
Date of analysis: 17.11-20.11.2014

Report Details

Report Date: 20.11.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8361-C4
Sample Name		8361-WAC4
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	0.7
Benzo[a]anthracene	0.3	0.4
Benzo[a]pyrene	0.3	0.5
Benzo[b]fluoranthene	0.3	0.6
Benzo[g,h,i]perylene	0.3	0.4
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	0.5
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	0.9
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	0.7
Pyrene	0.3	0.9
p-Terphenyl-d14	surr.	76%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	85%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8361-C4
Sample Name		8361-WAC4
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	108%
Metals		
Arsenic	2	3.9
Cadmium	0.3	<0.3
Chromium	5	11
Copper	5	15
Lead	10	23
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	24
Moisture	%	12%
pH		9.95
EC	[dS/m]	0.22
Soil Texture Group		Loams
Approximate Clay		20-30
EC1:5 to ECe conversion factor		9.5

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	88%	90%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	90%	92%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	91%	94%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	91%	90%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	90%	92%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	89%	92%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		87%	90%	68%	67%	
OCPs							
aldrin	0.1	<0.1	99%	102%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	94%	107%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	98%	99%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		90%	93%	92%	93%	
OPPs							
chlorpyrifos	0.1	<0.1	116%	117%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	89%	92%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	99%	104%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	100%	97%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	97%	96%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	94%	92%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	94%	90%	<2	<2	ACCEPT
o-Xylene	1	<1	93%	92%	<1	<1	ACCEPT
Fluorobenzene	surr.		101%	96%	106%	112%	
Metals							
Arsenic	2	<2	111%	101%	9.9	20	ACCEPT
Cadmium	0.3	<0.3	105%	95%	<0.3	<0.3	ACCEPT
Chromium	5	<5	107%	119%	9.2	26	ACCEPT
Copper	5	<5	95%	91%	24	26	ACCEPT
Lead	10	<10	115%	126%	18	31	ACCEPT
Mercury	0.2	<0.2	109%	106%	<0.2	<0.2	ACCEPT
Nickel	10	<10	91%	92%	<10	23	ACCEPT
Zinc	5	<5	107%	88%	55	91	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	0.7	0.7	ACCEPT
Benzo[a]anthracene	0.3	0.4	0.4	ACCEPT
Benzo[a]pyrene	0.3	0.5	0.5	ACCEPT
Benzo[b]fluoranthene	0.3	0.6	0.6	ACCEPT
Benzo[g,h,i]perylene	0.3	0.4	0.4	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	0.5	0.5	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	0.9	0.9	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	0.7	0.7	ACCEPT
Pyrene	0.3	0.9	0.9	ACCEPT
p-Terphenyl-d14	surr.	82%	76%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	84%	85%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	NT	NT	NT
>C16-C34	100	NT	NT	NT
>C34-C40	100	NT	NT	NT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	125%	109%	
Metals				
Arsenic	2	3.9	5.1	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	11	11	ACCEPT
Copper	5	15	17	ACCEPT
Lead	10	23	24	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	24	24	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comment:

Loams - loam, silty loam, sandy clay loam

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8361-4

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8361-4
No. of Samples: 2
Date Received: 18.11.2014
Date completed instructions received: 18.11.2014
Date of analysis: 18.11-24.11.2014

Report Details

Report Date: 24.11.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8361-C5	8361-C6
Sample Name		8361-WAC5	8361-WAC6
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	99%	94%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	139%	139%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8361-C5	8361-C6
Sample Name		8361-WAC5	8361-WAC6
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	102%	97%
Metals			
Arsenic	2	12	11
Cadmium	0.3	<0.3	<0.3
Chromium	5	13	24
Copper	5	39	5.3
Lead	10	47	19
Mercury	0.2	<0.2	<0.2
Nickel	10	26	<10
Zinc	5	67	44
Moisture	%	18%	25%
pH		7.98	3.94
EC	[dS/m]	0.18	0.06
Soil Texture Group		Medium & Heavy Clays	Medium & Heavy Clays
Approximate Clay		>45	>45
EC1:5 to ECe conversion factor		7	7

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	118%	91%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	122%	88%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	127%	89%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	109%	117%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	122%	88%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	132%	86%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		137%	85%	94%	104%	
OCPs							
aldrin	0.1	<0.1	124%	92%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	105%	66%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	124%	94%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		118%	87%	139%	137%	
OPPs							
chlorpyrifos	0.1	<0.1	129%	93%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	126%	95%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	92%	95%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	80%	87%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	79%	85%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	79%	85%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	78%	89%	<2	<2	ACCEPT
o-Xylene	1	<1	79%	86%	<1	<1	ACCEPT
Fluorobenzene	surr.		82%	87%	97%	117%	
Metals							
Arsenic	2	<2	85%	79%	11	14	ACCEPT
Cadmium	0.3	<0.3	98%	85%	<0.3	<0.3	ACCEPT
Chromium	5	<5	91%	84%	24	35	ACCEPT
Copper	5	<5	91%	95%	5.3	8.0	ACCEPT
Lead	10	<10	96%	88%	19	21	ACCEPT
Mercury	0.2	<0.2	91%	86%	<0.2	<0.2	ACCEPT
Nickel	10	<10	100%	108%	<10	<10	ACCEPT
Zinc	5	<5	93%	108%	44	35	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8361 ASB 1

Date Received: 07.11.2014
Date Analysed: 11.11.2014
Report Date: 12.11.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8361-Asb1	Soil	29 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8361-Asb2	Soil	72 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8361 ASB 2

Date Received: 11.11.2014
Date Analysed: 12.11.2014
Report Date: 13.11.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8361-Asb3	Soil	67 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8361 ASB 3

Date Received: 17.11.2014
Date Analysed: 17.11.2014
Report Date: 18.11.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8361-Asb4	Soil	63 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8361 ASB 4

Date Received: 18.11.2014
Date Analysed: 21.11.2014
Report Date: 24.11.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8361-Asb5	Soil	62 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8361-Asb6	Soil	64 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

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Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
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measurements included in this document are traceable
to Australian/national standards.

Attention: C Thompson

Report 437412-S
Project name 8200
Received Date Nov 03, 2014

Client Sample ID			8200-SAL1	8200-SAL2	8200-SAL3	8200-SAL4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S14-No00845	S14-No00846	S14-No00847	S14-No00848
Date Sampled			Oct 01, 2014	Oct 01, 2014	Oct 01, 2014	Oct 01, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	102	116	121	124
Chloride	10	mg/kg	42	19	100	34
Phenolics (total)	0.1	mg/kg	0.2	0.1	0.1	0.8
Sulphate (as S)	10	mg/kg	130	28	38	13
% Moisture	0.1	%	11	18	9.3	20

Client Sample ID			8200-SAL5	8200-SAL6	8200-SAL7	8200-SAL8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S14-No00849	S14-No00850	S14-No00851	S14-No00852
Date Sampled			Oct 08, 2014	Oct 10, 2014	Oct 20, 2014	Oct 20, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	114	108	127	114
Chloride	10	mg/kg	< 10	110	25	41
Phenolics (total)	0.1	mg/kg	0.2	0.1	0.2	0.2
Sulphate (as S)	10	mg/kg	46	78	32	44
% Moisture	0.1	%	13	14	20	10

Client Sample ID			8200-SAL9	8200-SAL10	8200-SAL11	8200-SAL12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S14-No00853	S14-No00854	S14-No00855	S14-No00856
Date Sampled			Oct 21, 2014	Oct 22, 2014	Oct 24, 2014	Oct 24, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	118	110	114	107
Chloride	10	mg/kg	24	140	61	< 10
Phenolics (total)	0.1	mg/kg	0.4	< 0.1	0.1	0.4
Sulphate (as S)	10	mg/kg	40	12	110	23
% Moisture	0.1	%	14	7.0	11	25

Client Sample ID			8200-SAL13
Sample Matrix			Soil
Eurofins mgt Sample No.			S14-No00857
Date Sampled			Oct 27, 2014
Test/Reference	LOR	Unit	
Polychlorinated Biphenyls (PCB)			
Aroclor-1016	0.5	mg/kg	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5
Total PCB	0.5	mg/kg	< 0.5
Dibutylchloredate (surr.)	1	%	117
Chloride	10	mg/kg	20
Phenolics (total)	0.1	mg/kg	0.3
Sulphate (as S)	10	mg/kg	19
% Moisture	0.1	%	22

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polychlorinated Biphenyls (PCB)	Sydney	Nov 04, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Chloride	Sydney	Nov 07, 2014	28 Day
- Method: E033 /E045 /E047 Chloride			
Phenolics (total)	Sydney	Nov 04, 2014	14 Day
- Method: E041 /E055 Total Phenolics			
Sulphate (as S)	Sydney	Nov 07, 2014	28 Day
- Method: E045 Sulphate			
% Moisture	Sydney	Nov 03, 2014	28 Day
- Method: E005 Moisture Content			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 8200

Order No.:
Report #: 437412
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Nov 3, 2014 2:50 PM
Due: Nov 10, 2014
Priority: 5 Day
Contact Name: C Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Chloride	Phenolics (total)	Sulphate (as S)	Polychlorinated Biphenyls (PCB)
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
8200-SAL1	Oct 01, 2014		Soil	S14-No00845	X	X	X	X	X
8200-SAL2	Oct 01, 2014		Soil	S14-No00846	X	X	X	X	X
8200-SAL3	Oct 01, 2014		Soil	S14-No00847	X	X	X	X	X
8200-SAL4	Oct 01, 2014		Soil	S14-No00848	X	X	X	X	X
8200-SAL5	Oct 08, 2014		Soil	S14-No00849	X	X	X	X	X
8200-SAL6	Oct 10, 2014		Soil	S14-No00850	X	X	X	X	X
8200-SAL7	Oct 20, 2014		Soil	S14-No00851	X	X	X	X	X
8200-SAL8	Oct 20, 2014		Soil	S14-No00852	X	X	X	X	X
8200-SAL9	Oct 21, 2014		Soil	S14-No00853	X	X	X	X	X
8200-SAL10	Oct 22, 2014		Soil	S14-No00854	X	X	X	X	X

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 8200

Order No.:
Report #: 437412
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Nov 3, 2014 2:50 PM
Due: Nov 10, 2014
Priority: 5 Day
Contact Name: C Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					% Moisture	Chloride	Phenolics (total)	Sulphate (as S)	Polychlorinated Biphenyls (PCB)
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
8200-SAL11	Oct 24, 2014		Soil	S14-No00855	X	X	X	X	X
8200-SAL12	Oct 24, 2014		Soil	S14-No00856	X	X	X	X	X
8200-SAL13	Oct 27, 2014		Soil	S14-No00857	X	X	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Polychlorinated Biphenyls (PCB)										
Aroclor-1016				mg/kg	< 0.5			0.5	Pass	
Aroclor-1232				mg/kg	< 0.5			0.5	Pass	
Aroclor-1242				mg/kg	< 0.5			0.5	Pass	
Aroclor-1248				mg/kg	< 0.5			0.5	Pass	
Aroclor-1254				mg/kg	< 0.5			0.5	Pass	
Aroclor-1260				mg/kg	< 0.5			0.5	Pass	
Total PCB				mg/kg	< 0			0.5	Pass	
Method Blank										
Chloride				mg/kg	< 10			10	Pass	
Phenolics (total)				mg/kg	< 0.1			0.1	Pass	
Sulphate (as S)				mg/kg	< 10			10	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				%	99			70-130	Pass	
LCS - % Recovery										
Chloride				%	108			70-130	Pass	
Phenolics (total)				%	90			70-130	Pass	
Sulphate (as S)				%	107			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				%	96			70-130	Pass	
Spike - % Recovery										
					Result 1					
Phenolics (total)				%	89			70-130	Pass	
Spike - % Recovery										
Polychlorinated Biphenyls (PCB)										
Aroclor-1260				%	98			70-130	Pass	
Spike - % Recovery										
					Result 1					
Phenolics (total)				%	87			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Polychlorinated Biphenyls (PCB)										
Aroclor-1016				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260				mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate										
					Result 1	Result 2	RPD			
Chloride				mg/kg	< 10	< 10	<1	30%	Pass	
Sulphate (as S)				mg/kg	46	46	1.0	30%	Pass	

Duplicate								
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD		
Aroclor-1016	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1232	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S14-No00855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Phenolics (total)	S14-No00855	CP	mg/kg	0.1	0.2	55	30%	Fail

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	No
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)



Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Shek Yuen

Sample Log In Details

Your reference: 8200-1
No. of Samples: 4
Date Received: 01.10.2014
Date completed instructions received: 01.10.2014
Date of analysis: 01.10-07.10.2014

Report Details

Report Date: 07.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8200-C1	8200-C2	8200-C3	8200-C4
		8200-WAC1	8200-WAC2	8200-WAC3	8200-WAC4
Sample Name					
PAH					
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3	4.1
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3	1.4
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3	1.6
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3	2.0
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3	1.4
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3	0.7
Chrysene	0.3	<0.3	<0.3	<0.3	1.4
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	<0.3	5.1
Fluorene	0.3	<0.3	<0.3	<0.3	0.4
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3	1.2
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3	4.1
Pyrene	0.3	<0.3	<0.3	<0.3	4.8
p-Terphenyl-d14	surr.	83%	79%	82%	83%
OCPs					
aldrin	0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1	<0.1
TCMX	surr.	88%	86%	90%	93%
OPPs					
chlorpyrifos	0.1	<0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C1	8200-C2	8200-C3	8200-C4
Sample Name		8200-WAC1	8200-WAC2	8200-WAC3	8200-WAC4
TRH					
>C6-C10	35	<35	<35	<35	<35
>C10-C16	50	<50	<50	<50	<50
>C16-C34	100	<100	<100	<100	<100
>C34-C40	100	<100	<100	<100	<100
BTEX					
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2	<2
o-Xylene	1	<1	<1	<1	<1
Fluorobenzene	surr.	100%	108%	103%	99%
Metals					
Arsenic	2	2.0	<2	8.4	21
Cadmium	0.3	<0.3	<0.3	<0.3	<0.3
Chromium	5	10	<5	<5	6.4
Copper	5	42	<5	39	73
Lead	10	41	<10	<10	120
Mercury	0.2	<0.2	<0.2	<0.2	<0.2
Nickel	10	19	<10	11	10
Zinc	5	59	<5	67	110
Moisture	%	12%	15%	10%	22%
pH		8.23	5.31	5.21	6.41
EC	[dS/m]	0.41	0.03	0.11	0.12
Soil Texture Group		Loams	Medium & Heavy Clays	Light Clays	Light Clays
Approximate Clay		20-30	>45	35-45	35-45
EC1:5 to Ece conversion factor		9.5	7	8.6	8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	82%	79%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	84%	81%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	85%	82%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	82%	78%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	84%	81%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	84%	81%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		80%	79%	106%	106%	N/A
OCPs							
aldrin	0.1	<0.1	91%	88%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	75%	69%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	79%	76%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		85%	82%	111%	109%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	95%	89%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	83%	79%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	91%	91%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	88%	98%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	85%	94%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	82%	89%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	83%	90%	<2	<2	ACCEPT
o-Xylene	1	<1	82%	88%	<1	<1	ACCEPT
Fluorobenzene	surr.		89%	96%	99%	100%	N/A
Metals							
Arsenic	2	<2	109%	108%	2.9	3.8	ACCEPT
Cadmium	0.3	<0.3	95%	95%	<0.3	<0.3	ACCEPT
Chromium	5	<5	100%	119%	<5	11	ACCEPT
Copper	5	<5	96%	99%	8.4	29	ACCEPT
Lead	10	<10	102%	100%	15	21	ACCEPT
Mercury	0.2	<0.2	88%	86%	<0.2	<0.2	ACCEPT
Nickel	10	<10	96%	95%	<10	14	ACCEPT
Zinc	5	<5	93%	86%	25	39	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	97%	95%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	107%	105%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	94%	98%	N/A
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	9.5	6.3	ACCEPT
Copper	5	9.5	24	ACCEPT
Lead	10	19	23	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	30	27	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to Ece conversion factor				

Comments:

N/A - Not Applicable

NT - Not Tested

Loams - loam, silty loam, sandy clay loam

Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-2
No. of Samples: 1
Date Received: 09.10.2014
Date completed instructions received: 09.10.2014
Date of analysis: 09.10-14.10.2014

Report Details

Report Date: 14.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID		8200-C5
PQL (mg/kg)		
Sample Name		8200-WAC5
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	73%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	116%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C5
Sample Name		8200-WAC5
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	115%
Metals		
Arsenic	2	28
Cadmium	0.3	<0.3
Chromium	5	28
Copper	5	<5
Lead	10	<10
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	<5
Moisture	%	14%
pH		7.47
EC	[dS/m]	0.05
Soil Texture Group		Loams
Approximate Clay		20-30
EC1:5 to ECe conversion factor		9.5

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	82%	81%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	84%	74%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	86%	90%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	82%	82%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	84%	74%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	85%	87%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		79%	78%	82%	87%	N/A
OCPs							
aldrin	0.1	<0.1	90%	90%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	68%	87%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	95%	94%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		87%	87%	95%	103%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	82%	78%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	84%	81%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	104%	99%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	96%	97%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	104%	103%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	103%	102%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	101%	101%	<2	<2	ACCEPT
o-Xylene	1	<1	106%	104%	<1	<1	ACCEPT
Fluorobenzene	surr.		98%	98%	106%	108%	N/A
Metals							
Arsenic	2	<2	114%	116%	3.6	3.6	ACCEPT
Cadmium	0.3	<0.3	93%	110%	<0.3	<0.3	ACCEPT
Chromium	5	<5	103%	104%	<5	<5	ACCEPT
Copper	5	<5	88%	106%	140	130	ACCEPT
Lead	10	<10	104%	112%	22	23	ACCEPT
Mercury	0.2	<0.2	96%	88%	<0.2	<0.2	ACCEPT
Nickel	10	<10	96%	104%	<10	<10	ACCEPT
Zinc	5	<5	93%	104%	55	59	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	0.5	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	0.5	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	0.9	0.9	ACCEPT
Phenanthrene	0.3	0.5	<0.3	ACCEPT
Pyrene	0.3	0.5	<0.3	ACCEPT
p-Terphenyl-d14	surr.	69%	84%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	103%	104%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	110%	109%	N/A
Metals				
Arsenic	2	3.7	5.6	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	89	310	FAIL
Copper	5	21	38	ACCEPT
Lead	10	51	21	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	10	39	ACCEPT
Zinc	5	76	81	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:

N/A - Not Applicable

NT - Not Tested

FAIL caused by inhomogenous matrix

Loams - loam, silty loam, sandy clay loam

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-3

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-3
No. of Samples: 1
Date Received: 10.10.2014
Date completed instructions received: 10.10.2014
Date of analysis: 10.10-14.10.2014

Report Details

Report Date: 14.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



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Lab ID	PQL (mg/kg)	8200-C6
Sample Name		8200-WAC6
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	69%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	106%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C6
Sample Name		8200-WAC6
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	98%
Metals		
Arsenic	2	29
Cadmium	0.3	<0.3
Chromium	5	<5
Copper	5	27
Lead	10	38
Mercury	0.2	<0.2
Nickel	10	11
Zinc	5	37
Moisture	%	19%
pH		10.92
EC	[dS/m]	0.35
Soil Texture Group		Clay Loams
Approximate Clay		30-35
EC1:5 to ECe conversion factor		8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	80%	80%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	83%	84%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	84%	86%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	82%	83%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	83%	84%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	83%	85%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		74%	80%	81%	81%	N/A
OCPs							
aldrin	0.1	<0.1	88%	89%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	83%	85%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	93%	95%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		87%	89%	95%	102%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	87%	89%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	82%	82%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	99%	92%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	83%	79%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	79%	75%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	78%	77%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	77%	75%	<2	<2	ACCEPT
o-Xylene	1	<1	78%	76%	<1	<1	ACCEPT
Fluorobenzene	surr.		83%	77%	91%	98%	N/A
Metals							
Arsenic	2	<2	105%	99%	5.0	4.4	ACCEPT
Cadmium	0.3	<0.3	100%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	96%	97%	<5	<5	ACCEPT
Copper	5	<5	93%	92%	5.7	5.7	ACCEPT
Lead	10	<10	97%	100%	15	15	ACCEPT
Mercury	0.2	<0.2	91%	90%	<0.2	0.2	ACCEPT
Nickel	10	<10	96%	95%	<10	<10	ACCEPT
Zinc	5	<5	93%	97%	7.9	7.9	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	74%	73%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	109%	110%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	128%	99%	N/A
Metals				
Arsenic	2	4.6	7.1	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	17	19	ACCEPT
Copper	5	20	17	ACCEPT
Lead	10	13	11	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	39	32	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:

N/A - Not Applicable

NT - Not Tested

Clay Loams - fine sandy clay loam, clay loam, silty clay loam

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Accredited for compliance with ISO/IEC 17025.

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-4

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-4
No. of Samples: 2
Date Received: 20.10.2014
Date completed instructions received: 20.10.2014
Date of analysis: 20.10-24.10.2014

Report Details

Report Date: 24.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

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Lab ID	PQL (mg/kg)	8200-C7	8200-C8
Sample Name		8200-WAC7	8200-WAC8
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	109%	115%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	102%	106%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C7	8200-C8
Sample Name		8200-WAC7	8200-WAC8
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	96%	95%
Metals			
Arsenic	2	14	6.5
Cadmium	0.3	<0.3	<0.3
Chromium	5	6.4	<5
Copper	5	35	33
Lead	10	56	29
Mercury	0.2	<0.2	<0.2
Nickel	10	<10	20
Zinc	5	43	85
Moisture	%	22%	13%
pH		5.80	7.85
EC	[dS/m]	0.05	0.19
Soil Texture Group		Medium & Heavy Clays	Clay Loams
Approximate Clay		>45	30-35
EC1:5 to ECe conversion factor		7	8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	93%	95%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	91%	92%	0.8	0.4	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	1.4	0.4	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	2.1	0.5	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	2.4	0.6	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	1.0	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	2.3	0.4	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	94%	96%	2.8	0.9	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	0.6	<0.3	ACCEPT
Naphthalene	0.3	<0.3	89%	92%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	95%	96%	0.4	0.4	ACCEPT
Pyrene	0.3	<0.3	89%	91%	2.6	0.9	ACCEPT
p-Terphenyl-d14	surr.		96%	97%	106%	110%	N/A
OCPs							
aldrin	0.1	<0.1	100%	102%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	81%	74%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	103%	105%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		93%	95%	100%	103%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	100%	105%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	95%	95%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	113%	108%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	89%	89%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	90%	90%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	90%	90%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	90%	87%	<2	<2	ACCEPT
o-Xylene	1	<1	89%	89%	<1	<1	ACCEPT
Fluorobenzene	surr.		91%	90%	95%	96%	N/A
Metals							
Arsenic	2	<2	105%	93%	2.6	3.7	ACCEPT
Cadmium	0.3	<0.3	103%	108%	<0.3	<0.3	ACCEPT
Chromium	5	<5	96%	112%	<5	<5	ACCEPT
Copper	5	<5	97%	82%	8.3	12	ACCEPT
Lead	10	<10	105%	110%	16	21	ACCEPT
Mercury	0.2	<0.2	97%	88%	<0.2	<0.2	ACCEPT
Nickel	10	<10	95%	119%	<10	12	ACCEPT
Zinc	5	<5	99%	115%	43	47	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	115%	106%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	105%	101%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	430	110	ACCEPT
>C34-C40	100	120	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	96%	94%	N/A
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	<5	<5	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	<5	<5	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:
N/A - Not Applicable
NT - Not Tested

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-5

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-5
No. of Samples: 1
Date Received: 21.10.2014
Date completed instructions received: 21.10.2014
Date of analysis: 21.10-27.10.2014

Report Details

Report Date: 27.10.2014
Method number:**
ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8200-C9
Sample Name		8200-WAC9
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	121%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	125%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C9
Sample Name		8200-WAC9
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	100%
Metals		
Arsenic	2	18
Cadmium	0.3	<0.3
Chromium	5	6.4
Copper	5	53
Lead	10	35
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	27
Moisture	%	22%
pH		5.60
EC	[dS/m]	0.12
Soil Texture Group		Medium & Heavy Clays
Approximate Clay		>45
EC1:5 to ECe conversion factor		7

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	93%	93%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	93%	93%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	96%	96%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	91%	92%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	97%	96%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	91%	91%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		94%	94%	117%	121%	N/A
OCPs							
aldrin	0.1	<0.1	104%	105%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	67%	67%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	104%	104%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		96%	96%	115%	119%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	102%	102%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	97%	97%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	115%	112%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	96%	112%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	96%	115%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	96%	115%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	93%	112%	<2	<2	ACCEPT
o-Xylene	1	<1	94%	113%	<1	<1	ACCEPT
Fluorobenzene	surr.		97%	112%	98%	116%	N/A
Metals							
Arsenic	2	<2	77%	78%	3.0	7.2	ACCEPT
Cadmium	0.3	<0.3	98%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	100%	102%	7.1	8.3	ACCEPT
Copper	5	<5	97%	99%	<5	<5	ACCEPT
Lead	10	<10	108%	106%	<10	<10	ACCEPT
Mercury	0.2	<0.2	91%	90%	<0.2	<0.2	ACCEPT
Nickel	10	<10	89%	90%	<10	<10	ACCEPT
Zinc	5	<5	99%	106%	<5	<5	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	120%	121%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	120%	123%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	98%	99%	N/A
Metals				
Arsenic	2	13	46	FAIL
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	12	22	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	<5	<5	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:

N/A - Not Applicable

NT - Not Tested

FAIL caused by inhomogenous matrix

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-6

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-6
No. of Samples: 1
Date Received: 22.10.2014
Date completed instructions received: 22.10.2014
Date of analysis: 22.10-27.10.2014

Report Details

Report Date: 27.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8200-C10
Sample Name		8200-WAC10
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	124%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	117%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID		8200-C10
Sample Name	PQL (mg/kg)	8200-WAC10
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	112%
Metals		
Arsenic	2	<2
Cadmium	0.3	<0.3
Chromium	5	<5
Copper	5	66
Lead	10	25
Mercury	0.2	<0.2
Nickel	10	23
Zinc	5	73
Moisture	%	8%
pH		9.51
EC	[dS/m]	0.28
Soil Texture Group		Sandy Loams
Approximate Clay		10-25
EC1:5 to ECe conversion factor		13.8

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	92%	89%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	90%	88%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	94%	88%	0.4	0.4	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	89%	88%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	94%	90%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	89%	83%	0.3	0.3	ACCEPT
p-Terphenyl-d14	surr.		93%	90%	115%	113%	N/A
OCPs							
aldrin	0.1	<0.1	103%	98%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	84%	91%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	100%	97%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		93%	90%	108%	108%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	99%	98%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	96%	94%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	95%	92%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	102%	101%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	99%	100%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	97%	99%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	99%	99%	<2	<2	ACCEPT
o-Xylene	1	<1	96%	100%	<1	<1	ACCEPT
Fluorobenzene	surr.		104%	101%	115%	109%	N/A
Metals							
Arsenic	2	<2	86%	101%	<2	<2	ACCEPT
Cadmium	0.3	<0.3	108%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	94%	105%	12	<5	ACCEPT
Copper	5	<5	96%	100%	87	57	ACCEPT
Lead	10	<10	102%	105%	120	96	ACCEPT
Mercury	0.2	<0.2	92%	90%	0.3	0.5	ACCEPT
Nickel	10	<10	100%	87%	12	<10	ACCEPT
Zinc	5	<5	103%	105%	410	370	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Comments:

N/A - Not Applicable

NT - Not Tested

Sandy Loams - sandy loam, fine sandy loam

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or

measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-7

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-7
No. of Samples: 2
Date Received: 24.10.2014
Date completed instructions received: 24.10.2014
Date of analysis: 24.10-29.10.2014

Report Details

Report Date: 29.10.2014
Method number:**
ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	8200-C11	8200-C12
Sample Name		8200-WAC11	8200-WAC12
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	130%	137%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	127%	135%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C11	8200-C12
Sample Name		8200-WAC11	8200-WAC12
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	110%	96%
Metals			
Arsenic	2	18	9.2
Cadmium	0.3	<0.3	<0.3
Chromium	5	19	9.1
Copper	5	62	30
Lead	10	120	17
Mercury	0.2	<0.2	<0.2
Nickel	10	<10	<10
Zinc	5	410	30
Moisture	%	20%	23%
pH		6.49	4.85
EC	[dS/m]	0.20	0.03
Soil Texture Group		Light Clays	Medium & Heavy Clays
Approximate Clay		35-45	>45
EC1:5 to ECe conversion factor		8.6	7

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	101%	100%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	102%	101%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	104%	104%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	99%	98%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	106%	105%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	100%	98%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		100%	98%	131%	116%	N/A
OCPs							
aldrin	0.1	<0.1	116%	115%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	102%	100%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	117%	115%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		104%	104%	130%	121%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	110%	112%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	106%	104%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	101%	102%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	89%	95%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	89%	93%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	90%	95%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	88%	94%	<2	<2	ACCEPT
o-Xylene	1	<1	90%	94%	<1	<1	ACCEPT
Fluorobenzene	surr.		92%	95%	93%	96%	N/A
Metals							
Arsenic	2	<2	100%	109%	20	6.9	ACCEPT
Cadmium	0.3	<0.3	100%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	97%	100%	<5	<5	ACCEPT
Copper	5	<5	90%	95%	20	14	ACCEPT
Lead	10	<10	98%	108%	13	14	ACCEPT
Mercury	0.2	<0.2	91%	98%	<0.2	<0.2	ACCEPT
Nickel	10	<10	90%	100%	<10	<10	ACCEPT
Zinc	5	<5	102%	108%	8.2	9.4	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	135%	138%	N/A
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	132%	136%	N/A
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	112%	99%	N/A
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	14	10	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	<5	<5	ACCEPT
Moisture	%			
pH				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:

N/A - Not Applicable

NT - Not Tested

Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 8200-8

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson

Sample Log In Details

Your reference: 8200-8
No. of Samples: 1
Date Received: 27.10.2014
Date completed instructions received: 27.10.2014
Date of analysis: 27.10-31.10.2014

Report Details

Report Date: 31.10.2014
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG3
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG11
ESA-P-ORG12
AS 1289.4.3.1
*Texture Assessment
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager/Principal Chemist



Accreditation No.14664.

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Lab ID	PQL (mg/kg)	8200-C13
Sample Name		8200-WAC13
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	107%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	104%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1

Lab ID	PQL (mg/kg)	8200-C13
Sample Name		8200-WAC13
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	121%
Metals		
Arsenic	2	11
Cadmium	0.3	<0.3
Chromium	5	5.2
Copper	5	23
Lead	10	40
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	34
Moisture	%	23%
pH		6.12
EC	[dS/m]	0.06
Soil Texture Group		Medium & Heavy Clays
Approximate Clay		>45
EC1:5 to ECe conversion factor		7

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	110%	97%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	109%	98%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	106%	97%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	106%	97%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	109%	98%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	99%	90%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		106%	95%	107%	105%	N/A
OCPs							
aldrin	0.1	<0.1	117%	105%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	110%	99%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	114%	101%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		105%	94%	104%	103%	N/A
OPPs							
chlorpyrifos	0.1	<0.1	128%	110%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	109%	99%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	115%	109%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	99%	121%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	105%	131%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	105%	134%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	109%	138%	<2	<2	ACCEPT
o-Xylene	1	<1	108%	136%	<1	<1	ACCEPT
Fluorobenzene	surr.		103%	125%	121%	146%	N/A
Metals							
Arsenic	2	<2	101%	104%	11	30	FAIL
Cadmium	0.3	<0.3	93%	105%	<0.3	<0.3	ACCEPT
Chromium	5	<5	82%	108%	5.2	6.5	ACCEPT
Copper	5	<5	87%	101%	23	35	ACCEPT
Lead	10	<10	90%	109%	40	52	ACCEPT
Mercury	0.2	<0.2	95%	94%	<0.2	0.2	ACCEPT
Nickel	10	<10	86%	106%	<10	<10	ACCEPT
Zinc	5	<5	90%	104%	34	45	ACCEPT
Moisture	%						
pH							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Comments:

N/A - Not Applicable

NT - Not Tested

FAIL caused by inhomogenous matrix

General Comments and Glossary

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.

Matrix heterogeneity may result in matrix spike analyses falling outside these limits

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG11	Extraction of OCP OPP and PAH from soil matrices
ESA-P-ORG12	Analysis of OCP OPP and PAHs by GC-MS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 1

Date Received: 01.10.2014
Date Analysed: 07.10.2014
Report Date: 08.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb1	Soil	59 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8200-Asb2	Soil	36 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8200-Asb3	Soil	47 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8200-Asb4	Soil	56 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 2

Date Received: 08.10.2014
Date Analysed: 14.10.2014
Report Date: 15.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb5	Soil	51 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 3

Date Received: 10.10.2014
Date Analysed: 14.10.2014
Report Date: 15.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb6	Soil	47 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 4

Date Received: 20.10.2014
Date Analysed: 22.10.2014
Report Date: 24.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb7	Soil	64 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8200-Asb8	Soil	71 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Tests not covered by NATA are denoted with *.



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Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 5

Date Received: 21.10.2014
Date Analysed: 23.10.2014
Report Date: 24.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb9	Soil	56 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 6

Date Received: 22.10.2014
Date Analysed: 24.10.2014
Report Date: 27.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb10	Soil	122 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

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Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 7

Date Received: 24.10.2014
Date Analysed: 27.10.2014
Report Date: 28.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb11	Soil	57 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
8200-Asb12	Soil	85 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 8200 ASB 8

Date Received: 27.10.2014
Date Analysed: 29.10.2014
Report Date: 29.10.2014
Client: Gregory Hills Development Company Pty Ltd
Job Location: Gregory Hills NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
8200-Asb13	Soil	38 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.

Sampling performed by AD Envirotech is not covered by NATA scope.

Samples are stored for period of 3 months.

Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.

¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



Accreditation No.14664.

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Tests not covered by NATA are denoted with *.

Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Clifton Thompson

Report 483479-S
Project name 9923
Received Date Dec 15, 2015

Client Sample ID			9923-SAL09	9923-SAL10	9923-SAL11	9923-SAL12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De15631	S15-De15632	S15-De15633	S15-De15634
Date Sampled			Dec 09, 2015	Dec 09, 2015	Dec 11, 2015	Dec 11, 2015
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	60	11	140	180
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	49	150	350	73
% Moisture	0.1	%	10	12	16	18

Client Sample ID			9923-SAL13
Sample Matrix			Soil
Eurofins mgt Sample No.			S15-De15635
Date Sampled			Dec 11, 2015
Test/Reference	LOR	Unit	
Chloride	5	mg/kg	110
Phenolics (total)	0.1	mg/kg	< 0.1
Sulphate (as SO ₄)	30	mg/kg	220
% Moisture	0.1	%	8.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Melbourne	Dec 16, 2015	28 Day
- Method: MGT 1100A			
Phenolics (total)	Melbourne	Dec 17, 2015	14 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO ₄)	Melbourne	Dec 16, 2015	28 Day
- Method: APHA 4500-SO ₄ Sulfate by FIA			
% Moisture	Melbourne	Dec 15, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9923

Order No.:
Report #: 483479
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Dec 15, 2015 1:02 PM
Due: Dec 22, 2015
Priority: 5 Day
Contact Name: Clifton Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Chloride	Phenolics (total)	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
9923-SAL09	Dec 09, 2015		Soil	S15-De15631	X	X	X	X
9923-SAL10	Dec 09, 2015		Soil	S15-De15632	X	X	X	X
9923-SAL11	Dec 11, 2015		Soil	S15-De15633	X	X	X	X
9923-SAL12	Dec 11, 2015		Soil	S15-De15634	X	X	X	X
9923-SAL13	Dec 11, 2015		Soil	S15-De15635	X	X	X	X

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chloride			mg/kg	< 5			5	Pass	
Phenolics (total)			mg/kg	< 0.1			0.1	Pass	
Sulphate (as SO4)			mg/kg	< 30			30	Pass	
LCS - % Recovery									
Chloride			%	109			70-130	Pass	
Phenolics (total)			%	105			70-130	Pass	
Sulphate (as SO4)			%	112			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S15-De15632	CP	%	112			70-130	Pass	
Sulphate (as SO4)	S15-De15632	CP	%	108			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phenolics (total)	S15-De15635	CP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-De15631	CP	mg/kg	60	56	6.2	30%	Pass	
Sulphate (as SO4)	S15-De15631	CP	mg/kg	49	47	6.1	30%	Pass	
% Moisture	S15-De15628	NCP	%	16	16	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phenolics (total)	S15-De15635	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Clifton Thompson

Report 482679-S
Project name 9826
Received Date Dec 08, 2015

Client Sample ID			9923.SAL2	9923.SAL3	9923.SAL4	9923.SAL5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De08726	S15-De08727	S15-De08728	S15-De08729
Date Sampled			Dec 02, 2015	Dec 03, 2015	Dec 03, 2015	Dec 03, 2015
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	240	110	31	77
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	260	110	120	280
% Moisture	0.1	%	11	11	7.4	11

Client Sample ID			9923.SAL6	9923.SAL7	9923.SAL8
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De08730	S15-De08731	S15-De08732
Date Sampled			Dec 03, 2015	Dec 03, 2015	Dec 03, 2015
Test/Reference	LOR	Unit			
Chloride	5	mg/kg	220	68	14
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	300	140	79
% Moisture	0.1	%	10	11	9.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Melbourne	Dec 10, 2015	28 Day
- Method: MGT 1100A			
Phenolics (total)	Melbourne	Dec 10, 2015	14 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO ₄)	Melbourne	Dec 10, 2015	28 Day
- Method: APHA 4500-SO ₄ Sulfate by FIA			
% Moisture	Melbourne	Dec 09, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9826

Order No.:
Report #: 482679
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Dec 8, 2015 3:50 PM
Due: Dec 15, 2015
Priority: 5 Day
Contact Name: Clifton Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					CANCELLED	Chloride	Phenolics (total)	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217					X				
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
9923.SAL1	Dec 01, 2015		Soil	S15-De08725	X				
9923.SAL2	Dec 02, 2015		Soil	S15-De08726		X	X	X	X
9923.SAL3	Dec 03, 2015		Soil	S15-De08727		X	X	X	X
9923.SAL4	Dec 03, 2015		Soil	S15-De08728		X	X	X	X
9923.SAL5	Dec 03, 2015		Soil	S15-De08729		X	X	X	X
9923.SAL6	Dec 03, 2015		Soil	S15-De08730		X	X	X	X
9923.SAL7	Dec 03, 2015		Soil	S15-De08731		X	X	X	X
9923.SAL8	Dec 03, 2015		Soil	S15-De08732		X	X	X	X

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
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APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chloride			mg/kg	< 5			5	Pass	
Phenolics (total)			mg/kg	< 0.1			0.1	Pass	
Sulphate (as SO ₄)			mg/kg	< 30			30	Pass	
LCS - % Recovery									
Chloride			%	100			70-130	Pass	
Phenolics (total)			%	102			70-130	Pass	
Sulphate (as SO ₄)			%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S15-De08727	CP	%	95			70-130	Pass	
Sulphate (as SO ₄)	S15-De08727	CP	%	104			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phenolics (total)	S15-De08732	CP	%	99			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-De08726	CP	mg/kg	240	230	5.6	30%	Pass	
Sulphate (as SO ₄)	S15-De08726	CP	mg/kg	260	260	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-De08729	CP	%	11	10	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phenolics (total)	S15-De08732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Clifton Thompson

Report 478550-S
Project name 9732
Received Date Nov 06, 2015

Client Sample ID			9732 SAL 1	9732 SAL 2	9732 SAL 3
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-No05077	S15-No05078	S15-No05079
Date Sampled			Oct 12, 2015	Oct 12, 2015	Oct 12, 2015
Test/Reference	LOR	Unit			
Chloride	5	mg/kg	70	< 5	45
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	310	< 30	170
% Moisture	0.1	%	12	7.5	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Melbourne	Nov 10, 2015	28 Day
- Method: MGT 1100A			
Phenolics (total)	Melbourne	Nov 11, 2015	14 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO ₄)	Melbourne	Nov 10, 2015	28 Day
- Method: APHA 4500-SO ₄ Sulfate by FIA			
% Moisture	Melbourne	Nov 07, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9732

Order No.:
Report #: 478550
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Nov 6, 2015 5:38 PM
Due: Nov 16, 2015
Priority: 5 Day
Contact Name: Clifton Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Chloride	Phenolics (total)	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
9732 SAL 1	Oct 12, 2015		Soil	S15-No05077	X	X	X	X
9732 SAL 2	Oct 12, 2015		Soil	S15-No05078	X	X	X	X
9732 SAL 3	Oct 12, 2015		Soil	S15-No05079	X	X	X	X

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Holding Times

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7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chloride			mg/kg	< 5			5	Pass	
Phenolics (total)			mg/kg	< 0.1			0.1	Pass	
Sulphate (as SO ₄)			mg/kg	< 30			30	Pass	
LCS - % Recovery									
Chloride			%	102			70-130	Pass	
Phenolics (total)			%	97			70-130	Pass	
Sulphate (as SO ₄)			%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S15-No05078	CP	%	101			70-130	Pass	
Sulphate (as SO ₄)	S15-No05078	CP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phenolics (total)	S15-No05079	CP	%	109			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-No05077	CP	mg/kg	70	61	13	30%	Pass	
Sulphate (as SO ₄)	S15-No05077	CP	mg/kg	310	360	14	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-No05078	CP	%	7.5	6.6	12	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phenolics (total)	S15-No05079	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

AD Envirotech Aust Pty Ltd
 Unit 4/ 10-11 Millenium Court
 Silverwater
 NSW 2128



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025.
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **K.Finnerty**

Report **473254-S**
 Project name 9639
 Received Date Sep 22, 2015

Client Sample ID			9639-SAL1	9639-SAL2
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S15-Se20285	S15-Se20286
Date Sampled			Sep 17, 2015	Sep 17, 2015
Test/Reference	LOR	Unit		
Chloride	10	mg/kg	16	35
Sulphate (as SO4)	10	mg/kg	240	240
% Moisture	0.1	%	16	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

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Description	Testing Site	Extracted	Holding Time
Chloride	Sydney	Sep 25, 2015	28 Day
- Method: E033 /E045 /E047 Chloride			
Sulphate (as SO ₄)	Sydney	Sep 25, 2015	28 Day
- Method: E045 Sulphate			
% Moisture	Sydney	Sep 22, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9639

Order No.:
Report #: 473254
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Sep 22, 2015 10:35 AM
Due: Sep 29, 2015
Priority: 5 Day
Contact Name: K.Finnerty

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Chloride	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted							
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217					X	X	X
Brisbane Laboratory - NATA Site # 20794							
External Laboratory							
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
9639-SAL1	Sep 17, 2015		Soil	S15-Se20285	X	X	X
9639-SAL2	Sep 17, 2015		Soil	S15-Se20286	X	X	X

Eurofins | mgt Internal Quality Control Review and Glossary

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1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Chloride				mg/kg	< 10			10	Pass	
Sulphate (as SO ₄)				mg/kg	< 10			10	Pass	
LCS - % Recovery										
Chloride				%	102			70-130	Pass	
Sulphate (as SO ₄)				%	102			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
					Result 1					
Chloride	S15-Se20297	NCP		%	109			70-130	Pass	
Sulphate (as SO ₄)	S15-Se20297	NCP		%	97			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
					Result 1	Result 2	RPD			
Chloride	S15-Se20285	CP		mg/kg	16	16	1.0	30%	Pass	
Sulphate (as SO ₄)	S15-Se20285	CP		mg/kg	240	240	7.0	30%	Pass	
Duplicate										
					Result 1	Result 2	RPD			
% Moisture	S15-Se20286	CP		%	13	12	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Clifton Thompson

Report 483479-S
Project name 9923
Received Date Dec 15, 2015

Client Sample ID			9923-SAL09	9923-SAL10	9923-SAL11	9923-SAL12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De15631	S15-De15632	S15-De15633	S15-De15634
Date Sampled			Dec 09, 2015	Dec 09, 2015	Dec 11, 2015	Dec 11, 2015
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	60	11	140	180
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	49	150	350	73
% Moisture	0.1	%	10	12	16	18

Client Sample ID			9923-SAL13
Sample Matrix			Soil
Eurofins mgt Sample No.			S15-De15635
Date Sampled			Dec 11, 2015
Test/Reference	LOR	Unit	
Chloride	5	mg/kg	110
Phenolics (total)	0.1	mg/kg	< 0.1
Sulphate (as SO ₄)	30	mg/kg	220
% Moisture	0.1	%	8.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Melbourne	Dec 16, 2015	28 Day
- Method: MGT 1100A			
Phenolics (total)	Melbourne	Dec 17, 2015	14 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO ₄)	Melbourne	Dec 16, 2015	28 Day
- Method: APHA 4500-SO ₄ Sulfate by FIA			
% Moisture	Melbourne	Dec 15, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9923

Order No.:
Report #: 483479
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Dec 15, 2015 1:02 PM
Due: Dec 22, 2015
Priority: 5 Day
Contact Name: Clifton Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					Chloride	Phenolics (total)	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
External Laboratory								
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
9923-SAL09	Dec 09, 2015		Soil	S15-De15631	X	X	X	X
9923-SAL10	Dec 09, 2015		Soil	S15-De15632	X	X	X	X
9923-SAL11	Dec 11, 2015		Soil	S15-De15633	X	X	X	X
9923-SAL12	Dec 11, 2015		Soil	S15-De15634	X	X	X	X
9923-SAL13	Dec 11, 2015		Soil	S15-De15635	X	X	X	X

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Chloride				mg/kg	< 5			5	Pass	
Phenolics (total)				mg/kg	< 0.1			0.1	Pass	
Sulphate (as SO4)				mg/kg	< 30			30	Pass	
LCS - % Recovery										
Chloride				%	109			70-130	Pass	
Phenolics (total)				%	105			70-130	Pass	
Sulphate (as SO4)				%	112			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
					Result 1					
Chloride	S15-De15632	CP		%	112			70-130	Pass	
Sulphate (as SO4)	S15-De15632	CP		%	108			70-130	Pass	
Spike - % Recovery										
					Result 1					
Phenolics (total)	S15-De15635	CP		%	98			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
					Result 1	Result 2	RPD			
Chloride	S15-De15631	CP		mg/kg	60	56	6.2	30%	Pass	
Sulphate (as SO4)	S15-De15631	CP		mg/kg	49	47	6.1	30%	Pass	
% Moisture	S15-De15628	NCP		%	16	16	4.0	30%	Pass	
Duplicate										
					Result 1	Result 2	RPD			
Phenolics (total)	S15-De15635	CP		mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9923-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9923-1
No. of Samples: 1
Date Received: 01.12.2015
Date completed instructions received: 01.12.2015
Date of analysis: 01-09.12.2015

Report Details

Report Date: 09.12.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.
Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9923-C1
Sample Name		9923-WAC1
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	102%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	104%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1
PCB		
Total PCB		<0.6
2-fluorobiphenyl	surr.	89%

Lab ID	PQL (mg/kg)	9923-C1
Sample Name		9923-WAC1
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	104%
Metals		
Arsenic	2	8.2
Cadmium	0.3	<0.3
Chromium	5	<5
Copper	5	17
Lead	10	13
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	22
Moisture	%	12%
pH (average for 3 measurements)		5.8
EC	[dS/m]	0.08
Soil Texture Group		Clay Loams
Approximate Clay		30-35
EC1:5 to ECe conversion factor		8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	88%	91%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	90%	91%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	88%	95%	<0.3	0.5	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	86%	90%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	90%	93%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	85%	93%	<0.3	0.4	ACCEPT
p-Terphenyl-d14	surr.		82%	87%	96%	92%	
OCPs							
aldrin	0.1	<0.1	93%	95%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	64%	84%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	94%	96%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		94%	96%	98%	96%	
OPPs							
chlorpyrifos	0.1	<0.1	80%	85%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	84%	86%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		83%	75%	84%	83%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	101%	95%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	114%	110%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	98%	93%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	104%	101%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	111%	110%	<2	<2	ACCEPT
o-Xylene	1	<1	112%	108%	<1	<1	ACCEPT
Fluorobenzene	surr.		112%	109%	103%	104%	
Metals							
Arsenic	2	<2	94%	97%	<2	<2	ACCEPT
Cadmium	0.3	<0.3	103%	100%	<0.3	<0.3	ACCEPT
Chromium	5	<5	108%	94%	<5	<5	ACCEPT
Copper	5	<5	102%	101%	<5	<5	ACCEPT
Lead	10	<10	101%	93%	11	14	ACCEPT
Mercury	0.2	<0.2	109%	111%	<0.2	<0.2	ACCEPT
Nickel	10	<10	99%	94%	<10	<10	ACCEPT
Zinc	5	<5	97%	91%	14	18	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	102%	102%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	104%	99%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	89%	85%	

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	104%	104%	
Metals				
Arsenic	2	8.2	8.6	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	17	15	ACCEPT
Lead	10	13	13	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	22	16	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comment:
Clay Loams - fine sandy clay loam, clay loam, silty clay loam

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9923-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9923-2
No. of Samples: 5
Date Received: 04.12.2015
Date completed instructions received: 04.12.2015
Date of analysis: 04-11.12.2015

Report Details

Report Date: 11.12.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



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measurements included in this document are traceable
to Australian/national standards.
Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9923-C2	9923-C3	9923-C4	9923-C5	9923-C6
Sample Name		9923-WAC2	9923-WAC3	9923-WAC4	9923-WAC5	9923-WAC6
PAH						
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	96%	100%	101%	105%	106%
OCPs						
aldrin	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TCMX	surr.	104%	106%	106%	105%	104%
OPPs						
chlorpyrifos	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PCB						
Total PCB		<0.6	<0.6	<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	88%	92%	88%	91%	89%

Lab ID	PQL (mg/kg)	9923-C2	9923-C3	9923-C4	9923-C5	9923-C6
Sample Name		9923-WAC2	9923-WAC3	9923-WAC4	9923-WAC5	9923-WAC6
TRH						
>C6-C10	35	<35	<35	<35	<35	<35
>C10-C16	50	<50	<50	<50	<50	<50
>C16-C34	100	<100	<100	<100	<100	<100
>C34-C40	100	<100	<100	<100	<100	<100
BTEX						
Benzene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2	<2	<2
o-Xylene	1	<1	<1	<1	<1	<1
Fluorobenzene	surr.	108%	106%	109%	108%	106%
Metals						
Arsenic	2	5.8	5.1	3.9	8.2	5.4
Cadmium	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	5	11	24	<5	<5	<5
Copper	5	21	24	16	21	18
Lead	10	10	28	20	24	26
Mercury	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	10	13	30	<10	<10	<10
Zinc	5	51	45	23	46	99
Moisture	%	10%	14%	8%	11%	11%
pH (average for 3 measurements)		6.5	8.6	8.5	6.7	6.6
EC	[dS/m]	0.23	0.17	0.09	0.15	0.18
Soil Texture Group		Light Clays	Light Clays	Light Clays	Clay Loams	Light Clays
Approximate Clay		35-45	35-45	35-45	30-35	35-45
EC1:5 to ECe conversion factor		8.6	8.6	8.6	8.6	8.6

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	93%	95%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	95%	95%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	91%	95%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	92%	95%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	94%	97%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	85%	88%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		90%	93%	100%	98%	
OCPs							
aldrin	0.1	<0.1	98%	100%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	69%	75%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	99%	101%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		99%	101%	106%	99%	
OPPs							
chlorpyrifos	0.1	<0.1	85%	87%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	90%	92%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		87%	77%	92%	87%	

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	105%	98%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	110%	116%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	100%	104%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	106%	112%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	118%	125%	<2	<2	ACCEPT
o-Xylene	1	<1	116%	122%	<1	<1	ACCEPT
Fluorobenzene	surr.		111%	112%	106%	108%	
Metals							
Arsenic	2	<2	88%	90%	5.1	8.3	ACCEPT
Cadmium	0.3	<0.3	108%	105%	<0.3	<0.3	ACCEPT
Chromium	5	<5	104%	99%	24	23	ACCEPT
Copper	5	<5	101%	101%	24	23	ACCEPT
Lead	10	<10	100%	108%	28	28	ACCEPT
Mercury	0.2	<0.2	102%	101%	<0.2	<0.2	ACCEPT
Nickel	10	<10	101%	106%	30	21	ACCEPT
Zinc	5	<5	102%	107%	45	42	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Comments:

Clay Loams - fine sandy clay loam, clay loam, silty clay loam

Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9923-3

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9923-3
No. of Samples: 4
Date Received: 09.12.2015
Date completed instructions received: 09.12.2015
Date of analysis: 09-14.12.2015

Report Details

Report Date: 14.12.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



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Lab ID	PQL (mg/kg)	9923-C7	9923-C8	9923-C9	9923-C10
Sample Name		9923-WAC7	9923-WAC8	9923-WAC9	9923-WAC10
PAH					
Acenaphthene	0.3	<0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	94%	108%	106%	108%
OCPs					
aldrin	0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1	<0.1
TCMX	surr.	121%	123%	109%	113%
OPPs					
chlorpyrifos	0.1	<0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1	<0.1
PCB					
Total PCB		<0.6	<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	93%	94%	89%	94%

Lab ID	PQL (mg/kg)	9923-C7	9923-C8	9923-C9	9923-C10
Sample Name		9923-WAC7	9923-WAC8	9923-WAC9	9923-WAC10
TRH					
>C6-C10	35	<35	<35	<35	<35
>C10-C16	50	<50	<50	<50	<50
>C16-C34	100	<100	<100	<100	<100
>C34-C40	100	<100	<100	<100	<100
BTEX					
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2	<2
o-Xylene	1	<1	<1	<1	<1
Fluorobenzene	surr.	112%	114%	122%	118%
Metals					
Arsenic	2	11	16	6.1	11
Cadmium	0.3	<0.3	<0.3	<0.3	<0.3
Chromium	5	10	6.7	16	12
Copper	5	17	35	11	29
Lead	10	27	77	19	35
Mercury	0.2	<0.2	<0.2	<0.2	<0.2
Nickel	10	<10	10	<10	<10
Zinc	5	33	240	26	34
Moisture	%	12%	11%	15%	14%
pH (average for 3 measurements)		6.9	6.8	6.4	8.7
EC	[dS/m]	0.08	0.06	0.05	0.10
Soil Texture Group		Clay Loams	Clay Loams	Clay Loams	Clay Loams
Approximate Clay		30-35	30-35	30-35	30-35
EC1:5 to ECe conversion factor		8.6	8.6	8.6	8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	100%	101%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	105%	102%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	101%	103%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	93%	96%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	105%	103%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	96%	101%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		100%	105%	110%	108%	
OCPs							
aldrin	0.1	<0.1	113%	113%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	73%	79%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	108%	109%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		109%	108%	113%	107%	
OPPs							
chlorpyrifos	0.1	<0.1	97%	100%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	100%	103%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		85%	86%	88%	86%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	115%	108%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	95%	110%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	94%	91%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	114%	102%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	126%	113%	<2	<2	ACCEPT
o-Xylene	1	<1	126%	113%	<1	<1	ACCEPT
Fluorobenzene	surr.		100%	108%	114%	115%	
Metals							
Arsenic	2	<2	99%	76%	82	130	FAIL
Cadmium	0.3	<0.3	105%	103%	<0.3	1.2	ACCEPT
Chromium	5	<5	106%	93%	6.1	6.1	ACCEPT
Copper	5	<5	96%	92%	110	82	ACCEPT
Lead	10	<10	109%	100%	85	48	ACCEPT
Mercury	0.2	<0.2	109%	107%	<0.2	<0.2	ACCEPT
Nickel	10	<10	99%	95%	23	18	ACCEPT
Zinc	5	<5	98%	97%	180	61	FAIL
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	106%	107%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	109%	109%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	89%	88%	

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	101%	112%	
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	<5	<5	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	11	11	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comments:
FAIL caused by inhomogenous matrix
Clay Loams - fine sandy clay loam, clay loam, silty clay loam

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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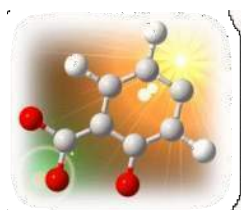


****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on;	Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9923-4

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Clifton Thompson

Sample Log In Details

Your reference: 9923-4
No. of Samples: 3
Date Received: 14.12.2015
Date completed instructions received: 14.12.2015
Date of analysis: 14-23.12.2015

Report Details

Report Date: 23.12.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
*ESA-P-12
AS 1289.4.3.1
*ESA-P-16
*Texture Assessment

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)

Laboratory Manager

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Lab ID	PQL (mg/kg)	9923-C11	9923-C12	9923-C13
Sample Name		9923-WAC11	9923-WAC12	9923-WAC13
PAH				
Acenaphthene	0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3
Anthracene	0.3	0.9	<0.3	<0.3
Benzo[a]anthracene	0.3	0.4	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3
Chrysene	0.3	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	1.0	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	0.9	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	100%	114%	114%
OCPs				
aldrin	0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1
TCMX	surr.	102%	117%	110%
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1
PCB				
Total PCB		<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	84%	99%	93%

Lab ID	PQL (mg/kg)	9923-C11	9923-C12	9923-C13
Sample Name		9923-WAC11	9923-WAC12	9923-WAC13
TRH				
>C6-C10	35	<35	<35	<35
>C10-C16	50	<50	<50	<50
>C16-C34	100	<100	<100	<100
>C34-C40	100	<100	<100	<100
BTEX				
Benzene	0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2
o-Xylene	1	<1	<1	<1
Fluorobenzene	surr.	89%	89%	94%
Metals				
Arsenic	2	5.5	6.8	3.9
Cadmium	0.3	<0.3	<0.3	<0.3
Chromium	5	<5	11	10
Copper	5	33	27	26
Lead	10	23	18	49
Mercury	0.2	<0.2	<0.2	<0.2
Nickel	10	17	13	29
Zinc	5	110	51	100
Moisture	%	17%	17%	13%
pH (average for 3 measurements)		8.6	7.7	9.1
EC	[dS/m]	0.25	0.07	0.19
Soil Texture Group		Medium & Heavy Clays	Medium & Heavy Clays	Light Clays
Approximate Clay		>45	>45	35-45
EC1:5 to ECe conversion factor		7	7	8.6

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	101%	102%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	98%	99%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	96%	98%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	96%	98%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	98%	99%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	88%	91%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		92%	97%	111%	106%	
OCPs							
aldrin	0.1	<0.1	105%	108%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	71%	73%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	109%	112%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		106%	108%	110%	120%	
OPPs							
chlorpyrifos	0.1	<0.1	90%	92%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	97%	99%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		72%	87%	89%	93%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	108%	106%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	96%	106%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	86%	86%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	89%	86%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	94%	92%	<2	<2	ACCEPT
o-Xylene	1	<1	96%	94%	<1	<1	ACCEPT
Fluorobenzene	surr.		98%	103%	98%	91%	
Metals							
Arsenic	2	<2	116%	110%	9.7	5.9	ACCEPT
Cadmium	0.3	<0.3	108%	108%	<0.3	<0.3	ACCEPT
Chromium	5	<5	108%	107%	<5	<5	ACCEPT
Copper	5	<5	103%	105%	14	15	ACCEPT
Lead	10	<10	110%	109%	<10	<10	ACCEPT
Mercury	0.2	<0.2	121%	121%	<0.2	<0.2	ACCEPT
Nickel	10	<10	99%	101%	<10	<10	ACCEPT
Zinc	5	<5	102%	105%	24	24	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						
Soil Texture Group							
Approximate Clay							
EC1:5 to ECe conversion factor							

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	0.9	<0.3	ACCEPT
Benzo[a]anthracene	0.3	0.4	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	1.0	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	0.9	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	100%	109%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	102%	112%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	84%	95%	

Lab ID	PQL (mg/kg)	Duplicate 2- Value 1	Duplicate 2- Value 2	Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	89%	89%	
Metals				
Arsenic	2	5.5	6.3	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	7.2	ACCEPT
Copper	5	33	25	ACCEPT
Lead	10	23	22	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	17	19	ACCEPT
Zinc	5	110	93	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			
Soil Texture Group				
Approximate Clay				
EC1:5 to ECe conversion factor				

Comment:
Light Clays - sandy clay, silty clay, light clay, light medium clay

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.



****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
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ESA-P-ORG02	Analysis of PAHs by GC-MS
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ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
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*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
*ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9923 ASB 1

Date Received: 01.12.2015
Date Analysed: 01.12.2015
Report Date: 08.12.2015
Client: Geogory Hills Development Company
Job Location: Geogory Hills Corporate Park NSW
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9923-Asb1	Soil	76 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9923 ASB 2

Date Received: 04.12.2015
Date Analysed: 07.12.2015
Report Date: 09.12.2015
Client: Gregory Hills Development Company
Job Location: Gregory Hills Corporate Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9923-Asb2	Soil / ASB2	174 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb3	Soil / ASB3	136 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb4	Soil / ASB4	144 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb5	Soil / ASB5	124 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb6	Soil / ASB6	124 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

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Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9923 ASB 3

Date Received: 09.12.2015
Date Analysed: 11.12.2015
Report Date: 11.12.2015
Client: Gregory Hills Development Company
Job Location: Gregory Hills Corporate Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9923-Asb7	Soil	57 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb8	Soil	72 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb9	Soil	67 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb10	Soil	62 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9923 ASB 4

Date Received: 14.12.2015
Date Analysed: 21.12.2015
Report Date: 22.12.2015
Client: Gregory Hills Development Company
Job Location: Gregory Hills Corporate Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9923-Asb11	Soil	46 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb12	Soil	71 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9923-Asb13	Soil	126 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Certificate of Analysis

AD Envirotech Aust Pty Ltd
Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128



NATA Accredited
Accreditation Number 1261
Site Number 1254

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Attention: Clifton Thompson

Report 482679-S
Project name 9826
Received Date Dec 08, 2015

Client Sample ID			9923.SAL2	9923.SAL3	9923.SAL4	9923.SAL5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De08726	S15-De08727	S15-De08728	S15-De08729
Date Sampled			Dec 02, 2015	Dec 03, 2015	Dec 03, 2015	Dec 03, 2015
Test/Reference	LOR	Unit				
Chloride	5	mg/kg	240	110	31	77
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	260	110	120	280
% Moisture	0.1	%	11	11	7.4	11

Client Sample ID			9923.SAL6	9923.SAL7	9923.SAL8
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			S15-De08730	S15-De08731	S15-De08732
Date Sampled			Dec 03, 2015	Dec 03, 2015	Dec 03, 2015
Test/Reference	LOR	Unit			
Chloride	5	mg/kg	220	68	14
Phenolics (total)	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Sulphate (as SO ₄)	30	mg/kg	300	140	79
% Moisture	0.1	%	10	11	9.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Melbourne	Dec 10, 2015	28 Day
- Method: MGT 1100A			
Phenolics (total)	Melbourne	Dec 10, 2015	14 Day
- Method: APHA 5530B & D Phenols			
Sulphate (as SO ₄)	Melbourne	Dec 10, 2015	28 Day
- Method: APHA 4500-SO ₄ Sulfate by FIA			
% Moisture	Melbourne	Dec 09, 2015	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: AD Envirotech Aust Pty Ltd
Address: Unit 4/ 10-11 Millenium Court
Silverwater
NSW 2128
Project Name: 9826

Order No.:
Report #: 482679
Phone: 02 9400 7711
Fax: 02 9401 0097

Received: Dec 8, 2015 3:50 PM
Due: Dec 15, 2015
Priority: 5 Day
Contact Name: Clifton Thompson

Eurofins | mgt Client Manager: Mary Makarios

Sample Detail					CANCELLED	Chloride	Phenolics (total)	Sulphate (as SO4)	Moisture Set
Laboratory where analysis is conducted									
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217					X				
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
9923.SAL1	Dec 01, 2015		Soil	S15-De08725	X				
9923.SAL2	Dec 02, 2015		Soil	S15-De08726		X	X	X	X
9923.SAL3	Dec 03, 2015		Soil	S15-De08727		X	X	X	X
9923.SAL4	Dec 03, 2015		Soil	S15-De08728		X	X	X	X
9923.SAL5	Dec 03, 2015		Soil	S15-De08729		X	X	X	X
9923.SAL6	Dec 03, 2015		Soil	S15-De08730		X	X	X	X
9923.SAL7	Dec 03, 2015		Soil	S15-De08731		X	X	X	X
9923.SAL8	Dec 03, 2015		Soil	S15-De08732		X	X	X	X

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chloride			mg/kg	< 5			5	Pass	
Phenolics (total)			mg/kg	< 0.1			0.1	Pass	
Sulphate (as SO ₄)			mg/kg	< 30			30	Pass	
LCS - % Recovery									
Chloride			%	100			70-130	Pass	
Phenolics (total)			%	102			70-130	Pass	
Sulphate (as SO ₄)			%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S15-De08727	CP	%	95			70-130	Pass	
Sulphate (as SO ₄)	S15-De08727	CP	%	104			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phenolics (total)	S15-De08732	CP	%	99			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S15-De08726	CP	mg/kg	240	230	5.6	30%	Pass	
Sulphate (as SO ₄)	S15-De08726	CP	mg/kg	260	260	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S15-De08729	CP	%	11	10	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phenolics (total)	S15-De08732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Mary Makarios	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)



Glenn Jackson

National Operations Manager

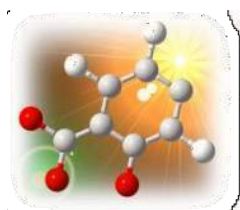
Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9826-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson & Kirill Smelov

Sample Log In Details

Your reference: 9826-1
No. of Samples: 3
Date Received: 25.11.2015
Date completed instructions received: 25.11.2015
Date of analysis: 25-28.11.2015

Report Details

Report Date: 30.11.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager

Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Lab ID	PQL (mg/kg)	9826-C1	9826-C2	9826-C3
Sample Name		9826-WAC01	9826-WAC02	9826-WAC03
PAH				
Acenaphthene	0.3	<0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3	0.4
Fluorene	0.3	<0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	133%	142%	139%
OCPs				
aldrin	0.1	<0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1	<0.1
TCMX	surr.	95%	95%	91%
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1	<0.1
PCB				
Total PCB		<0.6	<0.6	<0.6
2-fluorobiphenyl	surr.	87%	87%	79%

Lab ID	PQL (mg/kg)	9826-C1	9826-C2	9826-C3
Sample Name		9826-WAC01	9826-WAC02	9826-WAC03
TRH				
>C6-C10	35	<35	<35	<35
>C10-C16	50	<50	<50	<50
>C16-C34	100	<100	<100	<100
>C34-C40	100	<100	<100	<100
BTEX				
Benzene	0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1	<1
m, p- Xylene(s)	2	<2	<2	<2
o-Xylene	1	<1	<1	<1
Fluorobenzene	surr.	114%	115%	113%
Metals				
Arsenic	2	<2	<2	7.2
Cadmium	0.3	<0.3	<0.3	<0.3
Chromium	5	<5	<5	23
Copper	5	14	18	52
Lead	10	10	11	680
Mercury	0.2	<0.2	<0.2	<0.2
Nickel	10	<10	<10	<10
Zinc	5	16	28	150
Moisture	%	14%	10%	12%

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	86%	90%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	85%	88%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	88%	92%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	85%	89%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	87%	91%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	81%	87%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		125%	131%	142%	143%	
OCPs							
aldrin	0.1	<0.1	95%	98%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	61%	68%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	94%	97%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		95%	97%	95%	96%	
OPPs							
chlorpyrifos	0.1	<0.1	80%	85%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	85%	87%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		87%	90%	87%	89%	

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	97%	94%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	105%	112%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	92%	100%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	99%	105%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	104%	111%	<2	<2	ACCEPT
o-Xylene	1	<1	107%	114%	<1	<1	ACCEPT
Fluorobenzene	surr.		105%	110%	115%	111%	
Metals							
Arsenic	2	<2	92%	79%	<2	<2	ACCEPT
Cadmium	0.3	<0.3	105%	108%	<0.3	<0.3	ACCEPT
Chromium	5	<5	114%	113%	<5	<5	ACCEPT
Copper	5	<5	103%	104%	18	18	ACCEPT
Lead	10	<10	111%	112%	11	14	ACCEPT
Mercury	0.2	<0.2	109%	112%	<0.2	<0.2	ACCEPT
Nickel	10	<10	105%	109%	<10	<10	ACCEPT
Zinc	5	<5	98%	105%	28	14	ACCEPT
Moisture	%						

General Comments and Glossary

Tests not covered by NATA are denoted with *.
Samples are analysed on "as received" basis.
Samples were delivered chilled
Samples were preserved in correct manner
Sample containers for volatile analysis were received with minimal headspace
Samples were analysed within holding time
Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test
>: Greater than
LCS: Laboratory Control Sample
NT: Not tested
<: Less than
RPD: Relative Percent Difference
NA: Test not required
PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.
Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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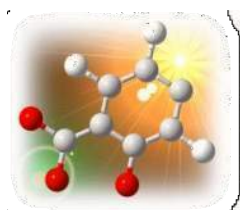


****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9826-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Clifton Thompson & Kirill Smelov

Sample Log In Details

Your reference: 9826-2
No. of Samples: 1
Date Received: 09.12.2015
Date completed instructions received: 09.12.2015
Date of analysis: 09-11.12.2015

Report Details

Report Date: 14.12.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager

Accreditation No.14664.

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The results of the tests, calibrations and/or
measurements included in this document are traceable
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Tests not covered by NATA are denoted with *.



Lab ID	PQL (mg/kg)	9826-C4
Sample Name		9826-WAC04
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	<0.3
Benzo[a]pyrene	0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3
Chrysene	0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	<0.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	<0.3
p-Terphenyl-d14	surr.	114%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	114%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1
PCB		
Total PCB		<0.6
2-fluorobiphenyl	surr.	93%

Lab ID	PQL (mg/kg)	9826-C4
Sample Name		9826-WAC04
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	110%
Metals		
Arsenic	2	9.8
Cadmium	0.3	<0.3
Chromium	5	27
Copper	5	13
Lead	10	21
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	25
Moisture	%	16%

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	100%	101%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	105%	102%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	101%	103%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	93%	96%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	105%	103%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	96%	101%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		100%	105%	110%	108%	
OCPs							
aldrin	0.1	<0.1	113%	113%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	73%	79%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	108%	109%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		109%	108%	113%	107%	
OPPs							
chlorpyrifos	0.1	<0.1	97%	100%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	100%	103%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		85%	86%	88%	86%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	115%	108%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	95%	110%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	94%	91%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	114%	102%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	126%	113%	<2	<2	ACCEPT
o-Xylene	1	<1	126%	113%	<1	<1	ACCEPT
Fluorobenzene	surr.		100%	108%	114%	115%	
Metals							
Arsenic	2	<2	99%	76%	82	130	FAIL
Cadmium	0.3	<0.3	105%	103%	<0.3	1.2	ACCEPT
Chromium	5	<5	106%	93%	6.1	6.1	ACCEPT
Copper	5	<5	96%	92%	110	82	ACCEPT
Lead	10	<10	109%	100%	85	48	ACCEPT
Mercury	0.2	<0.2	109%	107%	<0.2	<0.2	ACCEPT
Nickel	10	<10	99%	95%	23	18	ACCEPT
Zinc	5	<5	98%	97%	180	61	FAIL
Moisture	%						

Lab ID	PQL (mg/kg)	Batch Duplicate 2-Value 1	Batch Duplicate 2-Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	106%	107%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	109%	109%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	89%	88%	

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	101%	112%	
Metals				
Arsenic	2	<2	<2	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	<5	<5	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	11	11	ACCEPT
Moisture	%			

Comment:
FAIL caused by inhomogenous matrix

General Comments and Glossary

Tests not covered by NATA are denoted with *.
Samples are analysed on "as received" basis.
Samples were delivered chilled
Samples were preserved in correct manner
Sample containers for volatile analysis were received with minimal headspace
Samples were analysed within holding time
Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test
>: Greater than
LCS: Laboratory Control Sample
NT: Not tested
<: Less than
RPD: Relative Percent Difference
NA: Test not required
PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.
Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9826 ASB 1

Date Received: 09.12.2015
Date Analysed: 09.12.2015
Report Date: 09.12.2015
Client: Gregory Hills Development Park
Job Location: Gregory Hills Development Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9826-Asb1	Soil / ASB04	71 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9826 ASB 2

Date Received: 01.12.2015
Date Analysed: 11.12.2015
Report Date: 11.12.2015
Client: Gregory Hills Development Park
Job Location: Gregory Hills Development Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Tests not covered by NATA are denoted with *.

Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9826-Asb2	Soil / ASB01	108 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9826-Asb3	Soil / ASB02	69 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9826-Asb4	Soil / ASB03	50 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Tests not covered by NATA are denoted with *.



Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9732

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Nick Mirsepassi & Clifton Thompson

Sample Log In Details

Your reference: 9732
No. of Samples: 1
Date Received: 13.10.2015
Date completed instructions received: 13.10.2015
Date of analysis: 13-14.10.2015

Report Details

Report Date: 14.10.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



Accreditation No.14664.

Accredited for compliance with ISO/IEC 17025.

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Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9732-C1
Sample Name		9732-WAC01
PAH		
Acenaphthene	0.3	<0.3
Acenaphthylene	0.3	<0.3
Anthracene	0.3	<0.3
Benzo[a]anthracene	0.3	1.0
Benzo[a]pyrene	0.3	1.3
Benzo[b]fluoranthene	0.3	0.7
Benzo[g,h,i]perylene	0.3	<0.3
Benzo[k]fluoranthene	0.3	0.7
Chrysene	0.3	0.8
Dibenzo[a,h]anthracene	0.3	<0.3
Fluoranthene	0.3	1.3
Fluorene	0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	1.2
Naphthalene	0.3	<0.3
Phenanthrene	0.3	<0.3
Pyrene	0.3	1.3
p-Terphenyl-d14	surr.	112%
OCPs		
aldrin	0.1	<0.1
a-BHC	0.1	<0.1
b-BHC	0.1	<0.1
d-BHC	0.1	<0.1
g-BHC (lindane)	0.1	<0.1
cis-chlordane	0.1	<0.1
trans-chlordane	0.1	<0.1
4,4'-DDD	0.1	<0.1
4,4'-DDE	0.1	<0.1
4,4'-DDT	0.1	<0.1
dieldrin	0.1	<0.1
endosulfan I	0.2	<0.2
endosulfan II	0.2	<0.2
endosulfan sulfate	0.1	<0.1
endrin	0.2	<0.2
endrin aldehyde	0.1	<0.1
endrin ketone	0.1	<0.1
heptachlor	0.1	<0.1
heptachlor epoxide	0.1	<0.1
hexachlorobenzene	0.1	<0.1
methoxychlor	0.1	<0.1
TCMX	surr.	114%
OPPs		
chlorpyrifos	0.1	<0.1
chlorpyrifos methyl	0.1	<0.1
diazinon	0.1	<0.1
fenchlorphos	0.1	<0.1
methyl parathion	0.1	<0.1
prophos	0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1
PCB		
Total PCB		<0.6
2-fluorobiphenyl	surr.	106%

Lab ID	PQL (mg/kg)	9732-C1
Sample Name		9732-WAC01
TRH		
>C6-C10	35	<35
>C10-C16	50	<50
>C16-C34	100	<100
>C34-C40	100	<100
BTEX		
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Ethylbenzene	1	<1
m, p- Xylene(s)	2	<2
o-Xylene	1	<1
Fluorobenzene	surr.	88%
Metals		
Arsenic	2	26
Cadmium	0.3	<0.3
Chromium	5	<5
Copper	5	40
Lead	10	100
Mercury	0.2	<0.2
Nickel	10	<10
Zinc	5	110
Moisture	%	14%
pH (average for 3 measurements)		7.1
EC	[dS/m]	0.10

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	98%	95%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	99%	97%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	100%	99%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	90%	88%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	99%	97%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	98%	101%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		97%	101%	116%	122%	
OCPs							
aldrin	0.1	<0.1	104%	104%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	76%	83%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	102%	101%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		105%	103%	116%	119%	
OPPs							
chlorpyrifos	0.1	<0.1	92%	93%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	96%	96%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		91%	88%	102%	105%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	113%	107%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	94%	95%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	92%	94%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	91%	93%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	89%	91%	<2	<2	ACCEPT
o-Xylene	1	<1	90%	93%	<1	<1	ACCEPT
Fluorobenzene	surr.		93%	94%	88%	88%	
Metals							
Arsenic	2	<2	81%	89%	2.4	3.5	ACCEPT
Cadmium	0.3	<0.3	103%	105%	<0.3	<0.3	ACCEPT
Chromium	5	<5	103%	101%	<5	<5	ACCEPT
Copper	5	<5	97%	93%	<5	<5	ACCEPT
Lead	10	<10	112%	102%	<10	<10	ACCEPT
Mercury	0.2	<0.2	96%	100%	<0.2	<0.2	ACCEPT
Nickel	10	<10	97%	103%	<10	<10	ACCEPT
Zinc	5	<5	97%	104%	11	7.7	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
PAH				
Acenaphthene	0.3	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.	114%	117%	
OCPs				
aldrin	0.1	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	<0.1	ACCEPT
TCMX	surr.	118%	120%	
OPPs				
chlorpyrifos	0.1	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	<0.1	ACCEPT
PCB				
Total PCB		<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.	111%	111%	

Lab ID	PQL (mg/kg)	Batch Duplicate 2- Value 1	Batch Duplicate 2- Value 2	Batch Duplicate 2
Sample Name				
TRH				
>C6-C10	35	<35	<35	ACCEPT
>C10-C16	50	<50	<50	ACCEPT
>C16-C34	100	<100	<100	ACCEPT
>C34-C40	100	<100	<100	ACCEPT
BTEX				
Benzene	0.5	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	<2	ACCEPT
o-Xylene	1	<1	<1	ACCEPT
Fluorobenzene	surr.	88%	88%	
Metals				
Arsenic	2	2.8	2.7	ACCEPT
Cadmium	0.3	<0.3	<0.3	ACCEPT
Chromium	5	<5	<5	ACCEPT
Copper	5	<5	<5	ACCEPT
Lead	10	<10	<10	ACCEPT
Mercury	0.2	<0.2	<0.2	ACCEPT
Nickel	10	<10	<10	ACCEPT
Zinc	5	8.7	9.8	ACCEPT
Moisture	%			
pH (average for 3 measurements)				
EC	[dS/m]			

General Comments and Glossary

Tests not covered by NATA are denoted with *.

Samples are analysed on "as received" basis.

Samples were delivered chilled

Samples were preserved in correct manner

Sample containers for volatile analysis were received with minimal headspace

Samples were analysed within holding time

Some samples have been subcontracted

Yes

Yes

Yes

Yes

No

1. All samples are tested in batches of 20.

2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.

3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.

4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate

5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.

6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency

7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead content determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9732-2

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Nick Mirsepassi & Clifton Thompson

Sample Log In Details

Your reference: 9732-2
No. of Samples: 2
Date Received: 19.10.2015
Date completed instructions received: 19.10.2015
Date of analysis: 19-21.10.015

Report Details

Report Date: 22.10.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager



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measurements included in this document are traceable
to Australian/national standards.

Tests not covered by NATA are denoted with *.

Lab ID	PQL (mg/kg)	9732-C2	9732-C3
Sample Name		9732-WAC02	9732-WAC03
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	0.4	<0.3
Benzo[g,h,i]perylene	0.3	0.8	0.4
Benzo[k]fluoranthene	0.3	0.4	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	0.5	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	0.5	<0.3
p-Terphenyl-d14	surr.	110%	118%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	106%	113%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1
PCB			
Total PCB		<0.6	<0.6
2-fluorobiphenyl	surr.	96%	98%

Lab ID	PQL (mg/kg)	9732-C2	9732-C3
Sample Name		9732-WAC02	9732-WAC03
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	100%	100%
Metals			
Arsenic	2	30	6.6
Cadmium	0.3	<0.3	<0.3
Chromium	5	6.6	7.2
Copper	5	140	28
Lead	10	170	84
Mercury	0.2	<0.2	<0.2
Nickel	10	14	20
Zinc	5	160	70
Moisture	%	10%	17%
pH (average for 3 measurements)		7.8	7.0
EC	[dS/m]	0.14	0.32

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	98%	98%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	95%	95%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	0.4	0.6	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	99%	100%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	98%	98%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	95%	95%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	95%	102%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		93%	98%	118%	110%	
OCPs							
aldrin	0.1	<0.1	106%	104%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	83%	93%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	104%	101%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		101%	100%	113%	104%	
OPPs							
chlorpyrifos	0.1	<0.1	95%	97%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	94%	94%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		91%	89%	98%	96%	

Lab ID	PQL (mg/kg)	Blank 1	Blank spike 1	Matrix spike 1	Duplicate 1- Value 1	Duplicate 1- Value 2	Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	98%	94%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	98%	99%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	99%	98%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	96%	96%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	97%	98%	<2	<2	ACCEPT
o-Xylene	1	<1	96%	96%	<1	<1	ACCEPT
Fluorobenzene	surr.		100%	98%	100%	100%	
Metals							
Arsenic	2	<2	73%	72%	6.6	8.7	ACCEPT
Cadmium	0.3	<0.3	100%	98%	<0.3	<0.3	ACCEPT
Chromium	5	<5	96%	123%	7.2	<5	ACCEPT
Copper	5	<5	89%	96%	28	29	ACCEPT
Lead	10	<10	106%	121%	84	69	ACCEPT
Mercury	0.2	<0.2	103%	102%	<0.2	<0.2	ACCEPT
Nickel	10	<10	97%	103%	20	18	ACCEPT
Zinc	5	<5	98%	97%	70	57	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

General Comments and Glossary

Tests not covered by NATA are denoted with *.	
Samples are analysed on "as received" basis.	
Samples were delivered chilled	Yes
Samples were preserved in correct manner	Yes
Sample containers for volatile analysis were received with minimal headspace	Yes
Samples were analysed within holding time	Yes
Some samples have been subcontracted	No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test

>: Greater than

LCS: Laboratory Control Sample

NT: Not tested

<: Less than

RPD: Relative Percent Difference

NA: Test not required

PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the PQL : No Limit

Results between 10-20 times the PQL : RPD must lie between 0-50%

Results >20 times the PQL : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.



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Tests not covered by NATA are denoted with *.

****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
ESA-P-ORG02	Analysis of PAHs by GC-MS
ESA-P-ORG03	Analysis of TRH and TPH by GC-FID
ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
ESA-P-ORG07	Extraction of BTEX and VTRX from soil matrices
ESA-P-ORG08	Analysis of soil extracts and waters by P&T GCMS
ESA-P-ORG09	Extraction of TRH from solid matrices
ESA-P-ORG14	Extraction of PCB (Aroclor) OCP OPP and PAH from soil matrices
ESA-P-ORG15	Analysis of PCB OCP OPP and PAH by GCMS
AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9732 ASB 1

Date Received: 12.10.2015
Date Analysed: 15.10.2015
Report Date: 16.10.2015
Client: Gregory Hills Development Park
Job Location: Gregory Hills Development Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9732-Asb1	Soil	116 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128

A.C.N. 093 452 950

Analysis report: 9732 ASB 2

Date Received: 19.10.2015
Date Analysed: 26.10.2015
Report Date: 26.10.2015
Client: Gregory Hills Development Park
Job Location: Gregory Hills Development Park
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

Analysis performed by:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA approved asbestos identifier

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager/Principal Chemist
NATA signatory



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Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Result	Comments
9732-Asb2	Soil	168 grams	No Chrysotile asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil
9732-Asb3	Soil	159 grams	Chrysotile asbestos found	Fibre cement fraction containing Chrysotile asbestos detected with approximate dimension of 5.0 x 5.0 x 2.0 mm. No respirable asbestos detected during the trace analysis.
			No Amosite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Crocidolite asbestos found at reporting limit of 0.1 g/kg.	Nil
			No Synthetic Mineral Fibres found	Nil
			Organic fibres found	Nil

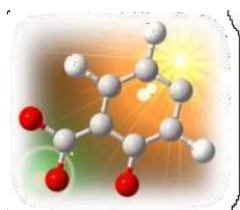
General Comments:

All samples are analysed as received.
Sampling performed by AD Envirotech is not covered by NATA scope.
Samples are stored for period of 3 months.
Due to the difficulty of estimating the load on the swab the test is carried out for presence or absence of asbestos only.
¹ Independent confirming technique such as infrared spectroscopy, X-ray diffraction, scanning or transmission electron microscopy is advised.



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Environmental and OH&S Laboratory

A division of A. D. Envirotech Australia Pty Ltd

A.C.N. 093 452 950

Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Analysis report: 9639-1

Customer: A. D. Envirotech Australia Pty. Ltd.
Attention: Karl Finnerty & Bikesh Deoju

Sample Log In Details

Your reference: 9639-1
No. of Samples: 2
Date Received: 18.09.2015
Date completed instructions received: 18.09.2015
Date of analysis: 18.09-22.09.2015

Report Details

Report Date: 24.09.2015
Method number:** ESA-MP-01
ESA-MP-02
ESA-P-ORG03
ESA-P-ORG07
ESA-P-ORG08
ESA-P-ORG09
ESA-P-ORG14
ESA-P-ORG15
ESA-P-12
AS 1289.4.3.1
*ESA-P-16

Results Authorised By:

Dr Dominika Wojtalewicz (MRACI CCHEM)
Laboratory Manager

Accreditation No.14664.

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Lab ID	PQL (mg/kg)	9639-C1	9639-C2
Sample Name		9639-WAC01	9639-WAC02
PAH			
Acenaphthene	0.3	<0.3	<0.3
Acenaphthylene	0.3	<0.3	<0.3
Anthracene	0.3	<0.3	<0.3
Benzo[a]anthracene	0.3	<0.3	<0.3
Benzo[a]pyrene	0.3	<0.3	<0.3
Benzo[b]fluoranthene	0.3	<0.3	<0.3
Benzo[g,h,i]perylene	0.3	<0.3	<0.3
Benzo[k]fluoranthene	0.3	<0.3	<0.3
Chrysene	0.3	<0.3	<0.3
Dibenzo[a,h]anthracene	0.3	<0.3	<0.3
Fluoranthene	0.3	<0.3	<0.3
Fluorene	0.3	<0.3	<0.3
Indeno(1,2,3-cd)pyrene	0.3	<0.3	<0.3
Naphthalene	0.3	<0.3	<0.3
Phenanthrene	0.3	<0.3	<0.3
Pyrene	0.3	<0.3	<0.3
p-Terphenyl-d14	surr.	130%	125%
OCPs			
aldrin	0.1	<0.1	<0.1
a-BHC	0.1	<0.1	<0.1
b-BHC	0.1	<0.1	<0.1
d-BHC	0.1	<0.1	<0.1
g-BHC (lindane)	0.1	<0.1	<0.1
cis-chlordane	0.1	<0.1	<0.1
trans-chlordane	0.1	<0.1	<0.1
4,4'-DDD	0.1	<0.1	<0.1
4,4'-DDE	0.1	<0.1	<0.1
4,4'-DDT	0.1	<0.1	<0.1
dieldrin	0.1	<0.1	<0.1
endosulfan I	0.2	<0.2	<0.2
endosulfan II	0.2	<0.2	<0.2
endosulfan sulfate	0.1	<0.1	<0.1
endrin	0.2	<0.2	<0.2
endrin aldehyde	0.1	<0.1	<0.1
endrin ketone	0.1	<0.1	<0.1
heptachlor	0.1	<0.1	<0.1
heptachlor epoxide	0.1	<0.1	<0.1
hexachlorobenzene	0.1	<0.1	<0.1
methoxychlor	0.1	<0.1	<0.1
TCMX	surr.	130%	125%
OPPs			
chlorpyrifos	0.1	<0.1	<0.1
chlorpyrifos methyl	0.1	<0.1	<0.1
diazinon	0.1	<0.1	<0.1
fenchlorphos	0.1	<0.1	<0.1
methyl parathion	0.1	<0.1	<0.1
prophos	0.1	<0.1	<0.1
tributylphosphorotrithioite	0.1	<0.1	<0.1
PCB			
Total PCB		<0.6	<0.6
2-fluorobiphenyl	surr.	91%	90%

Lab ID	PQL (mg/kg)	9639-C1	9639-C2
Sample Name		9639-WAC01	9639-WAC02
TRH			
>C6-C10	35	<35	<35
>C10-C16	50	<50	<50
>C16-C34	100	<100	<100
>C34-C40	100	<100	<100
BTEX			
Benzene	0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5
Ethylbenzene	1	<1	<1
m, p- Xylene(s)	2	<2	<2
o-Xylene	1	<1	<1
Fluorobenzene	surr.	91%	90%
Metals			
Arsenic	2	6.2	7.4
Cadmium	0.3	<0.3	<0.3
Chromium	5	56	12
Copper	5	7.6	42
Lead	10	38	47
Mercury	0.2	<0.2	<0.2
Nickel	10	<10	16
Zinc	5	47	90
Moisture	%	21%	13%
pH (average for 3 measurements)		5.6	7.2
EC	[dS/m]	0.10	0.06

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
PAH							
Acenaphthene	0.3	<0.3	103%	107%	<0.3	<0.3	ACCEPT
Acenaphthylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Anthracene	0.3	<0.3	105%	107%	<0.3	<0.3	ACCEPT
Benzo[a]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[a]pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[b]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[g,h,i]perylene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Benzo[k]fluoranthene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Chrysene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Dibenzo[a,h]anthracene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Fluoranthene	0.3	<0.3	103%	105%	<0.3	<0.3	ACCEPT
Fluorene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Indeno(1,2,3-cd)pyrene	0.3	<0.3	NT	NT	<0.3	<0.3	ACCEPT
Naphthalene	0.3	<0.3	101%	106%	<0.3	<0.3	ACCEPT
Phenanthrene	0.3	<0.3	96%	98%	<0.3	<0.3	ACCEPT
Pyrene	0.3	<0.3	101%	103%	<0.3	<0.3	ACCEPT
p-Terphenyl-d14	surr.		98%	101%	126%	127%	
OCPs							
aldrin	0.1	<0.1	109%	114%	<0.1	<0.1	ACCEPT
a-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
b-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
d-BHC	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
g-BHC (lindane)	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
cis-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
trans-chlordane	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDD	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDE	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
4,4'-DDT	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
dieldrin	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endosulfan I	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan II	0.2	<0.2	NT	NT	<0.2	<0.2	ACCEPT
endosulfan sulfate	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin	0.2	<0.2	85%	77%	<0.2	<0.2	ACCEPT
endrin aldehyde	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
endrin ketone	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
heptachlor epoxide	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
hexachlorobenzene	0.1	<0.1	110%	113%	<0.1	<0.1	ACCEPT
methoxychlor	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
TCMX	surr.		110%	114%	135%	132%	
OPPs							
chlorpyrifos	0.1	<0.1	96%	99%	<0.1	<0.1	ACCEPT
chlorpyrifos methyl	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
diazinon	0.1	<0.1	98%	100%	<0.1	<0.1	ACCEPT
fenchlorphos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
methyl parathion	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
prophos	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
tributylphosphorotrithioite	0.1	<0.1	NT	NT	<0.1	<0.1	ACCEPT
PCB							
Total PCB		<0.6	NT	NT	<0.6	<0.6	ACCEPT
2-fluorobiphenyl	surr.		80%	86%	93%	93%	

Lab ID	PQL (mg/kg)	Batch Blank 1	Batch Blank spike 1	Batch Matrix spike 1	Batch Duplicate 1- Value 1	Batch Duplicate 1- Value 2	Batch Duplicate 1
Sample Name							
TRH							
>C6-C10	35	<35	NT	NT	<35	<35	ACCEPT
>C10-C16	50	<50	96%	94%	<50	<50	ACCEPT
>C16-C34	100	<100	NT	NT	<100	<100	ACCEPT
>C34-C40	100	<100	NT	NT	<100	<100	ACCEPT
BTEX							
Benzene	0.5	<0.5	102%	105%	<0.5	<0.5	ACCEPT
Toluene	0.5	<0.5	85%	96%	<0.5	<0.5	ACCEPT
Ethylbenzene	1	<1	90%	95%	<1	<1	ACCEPT
m, p- Xylene(s)	2	<2	97%	93%	<2	<2	ACCEPT
o-Xylene	1	<1	97%	94%	<1	<1	ACCEPT
Fluorobenzene	surr.		100%	100%	85%	93%	
Metals							
Arsenic	2	<2	96%	96%	16	45	FAIL
Cadmium	0.3	<0.3	105%	105%	<0.3	<0.3	ACCEPT
Chromium	5	<5	103%	106%	23	67	FAIL
Copper	5	<5	97%	101%	19	12	ACCEPT
Lead	10	<10	103%	111%	17	30	ACCEPT
Mercury	0.2	<0.2	115%	112%	<0.2	<0.2	ACCEPT
Nickel	10	<10	99%	106%	<10	34	ACCEPT
Zinc	5	<5	103%	94%	59	55	ACCEPT
Moisture	%						
pH (average for 3 measurements)							
EC	[dS/m]						

Comment:
FAIL caused by inhomogenous matrix

General Comments and Glossary

Tests not covered by NATA are denoted with *.
Samples are analysed on "as received" basis.
Samples were delivered chilled
Samples were preserved in correct manner
Sample containers for volatile analysis were received with minimal headspace
Samples were analysed within holding time
Some samples have been subcontracted

Yes
Yes
Yes
Yes
No

- 1. All samples are tested in batches of 20.
- 2. All results for soil samples are reported per gram of dry soil, unless otherwise stated.
- 3. However surrogate standards are added to samples due to PAH and BTEX analysis and recoveries are calculated, samples' results are not corrected for standards recoveries.
- 4. Analysis of VOC in water samples are performed on unfiltered waters (as received), spiked with surrogate
- 5. If heterogenous or insufficient material provided LCS is used as matrix spike for QA/QC purposes.
- 6. Duplicate sample and matrix spike recoveries may not be prepared on smaller jobs, however, were analysed at a frequency
- 7. QA/QC samples shown within the report that states the word "BATCH"; Batch Blank, Matrix Spike and Duplicate were prepared on samples from outside of reported job.

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surr. (Surrogate Spike): Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

INS: Insufficient sample for this test
>: Greater than
LCS: Laboratory Control Sample
NT: Not tested
<: Less than
RPD: Relative Percent Difference
NA: Test not required
PQL: Practical Quantitation Limit

Laboratory Acceptance Criteria

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals, 60-140% for organics is acceptable.
Matrix heterogeneity may result in matrix spike analyses falling outside these limits.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

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****Methods Number Description:**

ESA-MP-01	Determination of metals by MP-AES
ESA-MP-02	Digestion of soil samples for MP-AES analysis
ESA-MP-03	Preparation of water samples for metals determination by MP-AES
ESA-MP-04	TCLP for inorganic contaminants
ESA-MP-05	Digestion of paint and dust samples for lead context determination
ESA-MP-06	Digestion of air filters
ESA-MP-07	Digestion of swabs for determination of lead content in dust
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ESA-P-ORG04	Separatory funnel extraction of PAHs from water matrices including TCLP extracts
ESA-P-ORG05	Separatory funnel extraction of TRH and TPH from water matrices
ESA-P-ORG06	Silica gel clean up of soil and water extracts, prior analysis for STPH
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ESA-P-ORG09	Extraction of TRH from solid matrices
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AS 1289.4.3.1	Determination of the pH value of a soil-Electrometric method
AS 1289.3.6.1	Determination of the particle size distribution of a soil - Standard method of analysis by sieving
T276	NSW RMS Test Method T 276 Foreign materials content of recycled crushed concrete
*Texture Assessment based on; Salinity Notes, Number 8, Oct 2000, ISSN 1 325-4448, "How to Texture soils & Test for Salinity"	
*ESA-P-16	Procedure for measurement of Electrical Conductivity EC
ESA-P-12	Procedure for determination of moisture

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