


APPENDIX B3:K

Contaminated land laboratory test reports



Environmental Division



CERTIFICATE OF ANALYSIS

Work Order : EB1228782

Client : GOLDER ASSOCIATES

Contact : MR STUART DERHAM

Address : P O BOX 6569
55 KINGSFORD SMITH PARADE
MAROOCHYDORE QLD, AUSTRALIA 4558

E-mail : sderham@golder.com.au

Telephone : +61 07 5475 5900

Facsimile : +61 07 5475 5901

Project : 127683017 Task 2003

Order number : MQ8154

C-O-C number : 127683017-1

Sampler : BS

Site : SCA

Quote number : EN/002/12

Page : 1 of 22

Laboratory : Environmental Division Brisbane

Contact : Loren Schiavon

Address : 32 Shand Street Stafford QLD Australia 4053

E-mail : loren.schiavon@alsglobal.com

Telephone : +61 2 8784 8503

Facsimile : +61 2 8784 8500

QC Level : NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Date Samples Received : 05-NOV-2012

Issue Date : 13-NOV-2012

No. of samples received : 43

No. of samples analysed : 21


This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.



Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Danielle White	Committal	WRG Subcontracting
Matt Frost	Senior Organic Chemist	Brisbane Inorganics
Matt Frost	Senior Organic Chemist	Brisbane Organics



Address: 32 Shand Street Stafford QLD Australia 4053 | PHONE: +61-7-5243 7222 | Facsimile: +61-7-3243 7218
Environmental Division Brisbane ABN: 84 009 936 029 Part of the ALS Group - A Campbell Brothers Limited Company

www.alsglobal.com

NIGHT SOLUTIONS NIGHT PARTNER



Page : 2 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- Analysis performed by ALS Scoresby (NATA Accreditation # 992). NATA accreditation does not cover performance of this method.
- EG005T (Total Metals) : Sample EB1228782_001 (BH1-0) shows poor matrix spike recovery due to sample heterogeneity. Confirmed by visual inspection.
- EG005T (Total Metals): Sample EB1228660-016 shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- EP068 Pesticides: Samples 'BH1-0', 'BH2-0', 'BH2-0.5', 'BH3-0', 'BH4-0', 'QA1' and 'QA3' required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly and surrogate recovery has not been determined.
- EP075(SIM): Samples BH3-0.5 and QA1 required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly and surrogate recovery has not been determined.
- No standard reference exists for the Holding Time of Microbiological testing in soils. ALS is of the opinion that Microbiological testing should be conducted as soon as possible after sample collection. Therefore, ALS sets a 48 hour Holding Time for Microbiological testing of soils to facilitate the setting of internal task priorities and endeavours to commence analysis as soon as practicable after receipt



Page : 3 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Client sample ID		BH1-0	BH1-0.5	BH2-0	BH2-0.5	BH3-0
			Client sampling date / time	Unit					
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		2.1	13.3	6.2	9.3	3.2
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		59	<5	9	<5	<5
Cadmium	7440-43-9	1	mg/kg		1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		211	12	30	6	14
Copper	7440-50-8	5	mg/kg		4920	<5	209	<5	32
Lead	7439-92-1	5	mg/kg		2340	8	239	<5	30
Nickel	7440-02-0	2	mg/kg		77	5	11	<2	10
Zinc	7440-66-6	5	mg/kg		11000	59	379	13	188
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.1	<0.1	0.2	<0.1	0.9
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
beta-BHC	319-85-7	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
gamma-BHC	58-89-9	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
delta-BHC	319-86-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Heptachlor	76-44-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Aldrin	309-00-2	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
^ Total Chlordane (sum)									
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Dieldrin	60-57-1	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
4,4'-DDE	72-55-9	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Endrin	72-20-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
4,4'-DDD	72-54-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<1.4	<0.2	<1.3
Endrin ketone	53494-70-5	0.05	mg/kg		<0.13	<0.05	<1.36	<0.14	<1.33



Page : 4 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOL)

Compound	CAS Number	LOR	Unit	Client sample ID				
				BH1-0	BH1-0.5	BH2-0	BH2-0.5	BH3-0
				02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00
				EB1228782-001	EB1228782-002	EB1228782-004	EB1228782-005	EB1228782-007
EP068A: Organochlorine Pesticides (OC) - Continued								
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<1.4	<0.2	<1.3
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.27	<0.05	<2.73	<0.27	<2.66
^ Sum of DDD + DDE + DDT	---	0.05	mg/kg	<0.27	<0.05	<2.73	<0.27	<2.66
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<1.4	<0.2	<1.3
Dimethoate	60-51-5	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Diazinon	333-41-5	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<1.4	<0.2	<1.3
Malathion	121-75-5	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Fenthion	55-38-9	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<1.4	<0.2	<1.3
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Fenamiphos	22224-92-6	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Prothiofos	34643-46-4	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Ethion	563-12-2	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Carbophenothion	786-19-6	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.13	<0.05	<1.36	<0.14	<1.33
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	7.0
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	41.2
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	3.7
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	2.6	<0.5	10.8
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4



Page : 5 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID				
				BH1-0	BH1-0.5	BH2-0	BH2-0.5	BH3-0
Client sampling date / time				02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00
EB1228782-001				EB1228782-002	EB1228782-004	EB1228782-005	EB1228782-007	
EP075(SIM)/B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<2.4
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg	<0.5	3.5	<0.5	<0.5	62.7
Benzo(a)pyrene TEQ (WHO)	-----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	-----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg	<50	1860	<50	<50	2690
C15 - C28 Fraction	-----	100	mg/kg	400	38000	<100	<100	76900
C29 - C36 Fraction	-----	100	mg/kg	480	810	<100	<100	980
^ C10 - C36 Fraction (sum)	-----	50	mg/kg	880	40700	<50	<50	80600
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	-----	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	-----	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg	<50	6320	<50	<50	13800
>C16 - C34 Fraction	-----	100	mg/kg	760	33800	<100	<100	66400
>C34 - C40 Fraction	-----	100	mg/kg	200	380	<100	<100	370
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg	960	40500	<50	<50	80600
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN								
^ Sum of BTEX	-----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	118	Not Determined	Not Determined	110	Not Determined



Page : 6 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Client sample ID				
			BH1-0	BH1-0.5	BH2-0	BH2-0.5	BH3-0
			02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00
			EB1228782-001	EB1228782-002	EB1228782-004	EB1228782-005	EB1228782-007
			Unit				
EP068T: Organophosphorus Pesticide Surrogate							
DEF	78-48-8	0.1	%	66.7	Not Determined	63.2	Not Determined
EP075(SIM)S: Phenolic Compound Surrogates							
Phenol-d6	13127-88-3	0.1	%	65.8	89.8	114	103
2-Chlorophenol-D4	93951-73-6	0.1	%	94.4	108	117	53.2
2,4,6-Tribromophenol	118-79-6	0.1	%	83.7	88.3	110	76.0
EP075(SIM)T: PAH Surrogates							
2-Fluorobiphenyl	321-60-8	0.1	%	82.8	78.9	111	123
Anthracene-d10	1719-06-8	0.1	%	86.6	68.6	91.0	92.8
4-Terphenyl-d14	1718-51-0	0.1	%	105	110	112	114
EP080S: TPH(V)BTEX Surrogates							
1,2-Dichloroethane-D4	17060-07-0	0.1	%	98.9	88.8	102	98.5
Toluene-D8	2037-26-5	0.1	%	95.0	85.5	92.6	96.5
4-Bromofluorobenzene	460-00-4	0.1	%	105	94.2	96.8	106



Page : 8 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID					
		LOR	Unit	BH3-0.5	BH4-0	BH4-0.5	BH5-1.0	BH6-0	
EP068A: Organochlorine Pesticides (OC) - Continued									
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<1.32	<0.05			
Endrin	72-20-8	0.05	mg/kg	<0.05	<1.32	<0.05			
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<1.32	<0.05			
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<1.32	<0.05			
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<1.32	<0.05			
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<1.32	<0.05			
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<1.3	<0.2			
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<1.32	<0.05			
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<1.3	<0.2			
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<2.65	<0.05			
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<0.05	<2.65	<0.05			
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<1.32	<0.05			
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<1.32	<0.05			
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<1.3	<0.2			
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<1.32	<0.05			
Diazinon	333-41-5	0.05	mg/kg	<0.05	<1.32	<0.05			
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<1.32	<0.05			
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<1.3	<0.2			
Malathion	121-75-5	0.05	mg/kg	<0.05	<1.32	<0.05			
Fenthion	55-38-9	0.05	mg/kg	<0.05	<1.32	<0.05			
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<1.32	<0.05			
Parathion	56-38-2	0.2	mg/kg	<0.2	<1.3	<0.2			
Primphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<1.32	<0.05			
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<1.32	<0.05			
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<1.32	<0.05			
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<1.32	<0.05			
Ethion	563-12-2	0.05	mg/kg	<0.05	<1.32	<0.05			
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<1.32	<0.05			
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<1.32	<0.05			
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5			
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5			



Page : 7 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID					
		LOR	Unit	BH3-0.5	BH4-0	BH4-0.5	BH5-1.0	BH6-0	
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%	12.5	5.6	15.9	12.2	10.2	
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	24	21	<2	13	13
Copper	7440-50-8	5	mg/kg	<5	20	<5	<5	87	16
Lead	7439-92-1	5	mg/kg	<5	22	9	<5	16	3
Nickel	7440-02-0	2	mg/kg	4	8	7	<2	3	41
Zinc	7440-66-6	5	mg/kg	6	395	15	<5	41	0.5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N									
Ammonia as N	7664-41-7	20	mg/kg	----	----	----	<20	----	<20
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	----	----	<0.1	----	7.4
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg	----	----	----	50	----	2140
EK062: Total Nitrogen as N (TKN + NOx)									
Total Nitrogen as N	----	20	mg/kg	----	----	----	50	----	2150
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<2.65	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<1.32	<0.05	----	----	----



Page : 9 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID					
				BH3-0.5	BH4-0	BH4-0.5	BH5-1.0	BH6-0	
Client sampling date / time				02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00
Client sampling date / time				EB1228782-008	EB1228782-010	EB1228782-011	EB1228782-015	EB1228782-016	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons			mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (WHO)			mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	720	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	120	33200	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	25400	<100	<100	<100	<100
C10 - C36 Fraction (sum)		50	mg/kg	120	59300	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft									
C6 - C10 Fraction		10	mg/kg	<10	<10	<10	<10	<10	<10
C6 - C10 Fraction minus BTEX (F1)		10	mg/kg	<10	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	220	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	<100	56200	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	<100	4530	<100	<100	<100	<100
>C10 - C40 Fraction (sum)		50	mg/kg	<50	61000	<50	<50	<50	<50
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5



Page : 10 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID					
		LOR	Unit	BH3-0.5	BH4-0	BH4-0.5	BH5-1.0	BH6-0	
EP080: BTEX - Continued									
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
^ Sum of BTEX	-----		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3		1	mg/kg	<1	<1	<1	<1	<1
VIC-MM616: Coliforms MPN									
<i>Escherichia coli</i>	Ecoli		1	orgs/g	-----	-----	<2	<2	<2
Faecal Coliforms	-----		1	orgs/g	-----	-----	<2	<2	<2
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2		0.1	%	75.2	Not Determined	79.3	-----	-----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8		0.1	%	49.7	Not Determined	48.2	-----	-----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3		0.1	%	93.7	136	92.2	-----	-----
2-Chlorophenol-D4	93951-73-6		0.1	%	96.8	90.3	95.8	-----	-----
2,4,6-Tribromophenol	118-79-6		0.1	%	108	88.5	105	-----	-----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8		0.1	%	100	103	97.2	-----	-----
Anthracene-d10	1719-06-8		0.1	%	90.0	66.7	84.4	-----	-----
4-Terphenyl-d14	1718-51-0		0.1	%	107	105	104	-----	-----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0		0.1	%	95.6	97.7	94.5	-----	-----
Toluene-D8	2037-26-5		0.1	%	88.6	86.7	87.1	-----	-----
4-Bromofluorobenzene	460-00-4		0.1	%	99.8	96.5	98.0	-----	-----



Page : 11 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Client sampling date / time		Client sample ID					
			Unit	Unit	BH7-1.0	BH8-1.0	BH9-0	BH10-0	BH11-0	
EA055: Moisture Content										
Moisture Content (dried @ 103°C)	----	1.0	%	20.7	20.2	9.5	13.6	13.9		
EG005T: Total Metals by ICP-AES										
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	6	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	<2	<2	7	22	7	9	9
Copper	7440-50-8	5	mg/kg	<5	<5	7	6	7	6	<5
Lead	7439-92-1	5	mg/kg	<5	<5	<5	6	<5	6	<5
Nickel	7440-02-0	2	mg/kg	<2	<2	2	8	2	8	3
Zinc	7440-66-6	5	mg/kg	<5	<5	<5	8	<5	8	<5
EG035T: Total Recoverable Mercury by FIMS										
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EK055: Ammonia as N										
Ammonia as N	7664-41-7	20	mg/kg	<20	<20	----	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser										
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	----	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser										
Total Kjeldahl Nitrogen as N	----	20	mg/kg	60	40	----	----	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)										
Total Nitrogen as N	----	20	mg/kg	60	40	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)										
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Total Chlordane (sum)	----	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05	<0.05	<0.05



Page : 12 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Client sampling date / time		BH7-1.0	BH8-1.0	BH9-0	BH10-0	BH11-0
			Unit	Client sample ID					
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4'-DDE	72-55-9	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Endrin	72-20-8	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-028	02-NOV-2012 15:00	EB1228782-028	02-NOV-2012 15:00	EB1228782-028
beta-Endosulfan	33213-65-9	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-024	02-NOV-2012 15:00	EB1228782-024	02-NOV-2012 15:00	EB1228782-024
4.4'-DDD	72-54-8	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Endrin aldehyde	7421-93-4	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Endosulfan sulfate	1031-07-8	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
4.4'-DDT	50-29-3	0.2	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Endrin ketone	53494-70-5	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Methoxychlor	72-43-5	0.2	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Sum of DDD + DDE + DDT	****	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Demeton-S-methyl	919-86-8	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Monocrotophos	6923-22-4	0.2	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Dimethoate	60-51-5	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Diazinon	333-41-5	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Parathion-methyl	298-00-0	0.2	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Malathion	121-75-5	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Fenthion	55-38-9	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Chlorpyrifos	2921-88-2	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Parathion	56-38-2	0.2	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Primiphos-ethyl	23505-41-1	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Bromophos-ethyl	4824-78-6	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Fenamiphos	22224-92-6	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Prothiofos	34643-46-4	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Ethion	563-12-2	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Carbophenothion	786-19-6	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
Azinphos Methyl	86-50-0	0.05	mg/kg	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%	02-NOV-2012 15:00	EB1228782-021	02-NOV-2012 15:00	EB1228782-025	02-NOV-2012 15:00	EB1228782-031
EP068T: Organophosphorus Pesticide Surrogate									



Page : 13 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID				
		LOR	Unit	BH7-1.0	BH8-1.0	BH9-0	BH10-0	BH11-0
EP068T: Organophosphorus Pesticide Surrogate - Continued	78-48-8	0.1	%	EB1228782-021	EB1228782-024	EB1228782-025	EB1228782-028	EB1228782-031
DEF				-----	-----	69.7	62.0	62.6



Page : 14 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID					
		LOR	Unit	BH12-0	BH13-0	QA1	QA3	QA6	
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%	3.0	11.8	1.6	6.8	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	5	18	12	22	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	44	91	----	----
Lead	7439-92-1	5	mg/kg	<5	6	26	39	----	----
Nickel	7440-02-0	2	mg/kg	<2	6	12	9	----	----
Zinc	7440-66-6	5	mg/kg	<5	6	182	384	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.5	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<2.66	<2.68	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<1.3	<1.3	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	----	----



Page : 15 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	Client sampling date / time		Client sample ID					
		LOR	Unit	BH12-0	BH13-0	QA1	QA3	QA6	
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<1.3	<1.3	-----	-----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<2.66	<2.68	-----	-----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<0.05	<0.05	<2.66	<2.68	-----	-----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<1.3	<1.3	-----	-----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<1.3	<1.3	-----	-----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<1.3	<1.3	-----	-----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<1.33	<1.34	-----	-----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----
Acenaphthylene	208-96-8	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----
Acenaphthene	83-32-9	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----
Fluorene	86-73-7	0.5	mg/kg	-----	-----	<7.0	<0.5	-----	-----
Phenanthrene	85-01-8	0.5	mg/kg	-----	-----	28.6	<0.5	-----	-----
Anthracene	120-12-7	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----
Fluoranthene	206-44-0	0.5	mg/kg	-----	-----	2.8	<0.5	-----	-----
Pyrene	129-00-0	0.5	mg/kg	-----	-----	8.4	<0.5	-----	-----
Benz(a)anthracene	56-55-3	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----
Chrysene	218-01-9	0.5	mg/kg	-----	-----	<2.4	<0.5	-----	-----



Page : 16 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID					
				BH12-0	BH13-0	QA1	QA3	QA6	
Client sampling date / time				02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00	02-NOV-2012 15:00
				EB1228782-034	EB1228782-037	EB1228782-040	EB1228782-041	EB1228782-043	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
Benzo(a)pyrene	50-32-8	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	*****	*****	<2.4	<0.5	*****	*****
^ Sum of polycyclic aromatic hydrocarbons	*****	0.5	mg/kg	*****	*****	39.8	<0.5	*****	*****
Benzo(a)pyrene TEQ (WHO)	*****	0.5	mg/kg	*****	*****	<1.2	<0.5	*****	*****
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	*****	10	mg/kg	*****	*****	<10	<10	*****	<10
C10 - C14 Fraction	*****	50	mg/kg	*****	*****	2570	760	*****	*****
C15 - C28 Fraction	*****	100	mg/kg	*****	*****	66400	26000	*****	*****
C29 - C36 Fraction	*****	100	mg/kg	*****	*****	800	22000	*****	*****
^ C10 - C36 Fraction (sum)	*****	50	mg/kg	*****	*****	69800	48800	*****	*****
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft									
C6 - C10 Fraction	*****	10	mg/kg	*****	*****	<10	<10	*****	<10
^ C6 - C10 Fraction minus BTEX (F1)	*****	10	mg/kg	*****	*****	<10	<10	*****	<10
>C10 - C16 Fraction	*****	50	mg/kg	*****	*****	12400	310	*****	*****
>C16 - C34 Fraction	*****	100	mg/kg	*****	*****	57000	45600	*****	*****
>C34 - C40 Fraction	*****	100	mg/kg	*****	*****	350	4280	*****	*****
^ >C10 - C40 Fraction (sum)	*****	50	mg/kg	*****	*****	69800	50200	*****	*****
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg	*****	*****	<0.2	<0.2	*****	<0.2
Toluene	108-88-3	0.5	mg/kg	*****	*****	<0.5	<0.5	*****	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	*****	*****	<0.5	<0.5	*****	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	*****	*****	<0.5	<0.5	*****	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	*****	*****	<0.5	<0.5	*****	<0.5
EP080: BTEXN									
^ Sum of BTEX	*****	0.2	mg/kg	*****	*****	<0.2	<0.2	*****	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	*****	*****	<0.5	<0.5	*****	<0.5
Naphthalene	91-20-3	1	mg/kg	*****	*****	<1	<1	*****	<1
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%	*****	*****	111	68.0	*****	Not Determined
				111	68.0	Not Determined	Not Determined	*****	Not Determined



Page : 17 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Client sample ID			QA1	QA3	QA6
			Client sampling date / time	Unit	%			
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	67.5	69.1	Not Determined	Not Determined	Not Determined
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	93.6	96.8	93.6	96.8	93.6
2-Chlorophenol-D4	93951-73-6	0.1	%	102	93.9	102	93.9	102
2,4,6-Tribromophenol	118-79-6	0.1	%	136	119	136	119	136
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	108	95.1	108	95.1	108
Anthracene-d10	1719-06-8	0.1	%	137	84.4	137	84.4	137
4-Terphenyl-d14	1718-51-0	0.1	%	125	128	125	128	125
EP080S: TPH(V)BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	108	98.1	108	98.1	103
Toluene-D8	2037-26-5	0.1	%	95.6	87.7	95.6	87.7	99.4
4-Bromofluorobenzene	460-00-4	0.1	%	101	97.4	101	97.4	107



Page : 18 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Compound	CAS Number	LOR	Client sampling date / time		Client sample ID
			Unit	QA5	
EG020T: Total Metals by ICP-MS					
Arsenic	7440-38-2	0.001	mg/L	02-NOV-2012 15:00	EB1228782-042
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.0001	
Copper	7440-50-8	0.001	mg/L	<0.0001	
Lead	7439-92-1	0.001	mg/L	<0.0001	
Nickel	7440-02-0	0.001	mg/L	<0.0001	
Zinc	7440-66-6	0.005	mg/L	<0.005	
EG035T: Total Recoverable Mercury by FIMS					
Mercury	7439-97-6	0.0001	mg/L	0.0004	
EP068A: Organochlorine Pesticides (OC)					
alpha-BHC	319-84-6	0.5	µg/L	<0.5	
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	
beta-BHC	319-85-7	0.5	µg/L	<0.5	
gamma-BHC	58-89-9	0.5	µg/L	<0.5	
delta-BHC	319-86-8	0.5	µg/L	<0.5	
Heptachlor	76-44-8	0.5	µg/L	<0.5	
Aldrin	309-00-2	0.5	µg/L	<0.5	
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	
Dieldrin	60-57-1	0.5	µg/L	<0.5	
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	
Endrin	72-20-8	0.5	µg/L	<0.5	
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	
4,4'-DDT	50-29-3	2	µg/L	<2	
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	
Methoxychlor	72-43-5	2	µg/L	<2	
^ Total Chlordane (sum)	0.5	µg/L	<0.5	
^ Sum of DDD + DDE + DDT	0.5	µg/L	<0.5	



Page : 19 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Compound	CAS Number	LOR	Client sampling date / time		Client sample ID
			Unit	Time	
EP068A: Organochlorine Pesticides (OC) - Continued					
Sum of Aldrin + Dieldrin					
	309-00-260-57-1	0.5	µg/L	02-NOV-2012 15:00	EB1228782-042
EP068B: Organophosphorus Pesticides (OP)					
Dichlorvos	62-73-7	0.5	µg/L	<0.5	
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	
Monocrotophos	6923-22-4	2	µg/L	<2	
Dimethoate	60-51-5	0.5	µg/L	<0.5	
Diazinon	333-41-5	0.5	µg/L	<0.5	
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	
Parathion-methyl	298-00-0	2	µg/L	<2	
Malathion	121-75-5	0.5	µg/L	<0.5	
Fenthion	55-38-9	0.5	µg/L	<0.5	
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	
Parathion	56-38-2	2	µg/L	<2	
Pririphos-ethyl	23505-41-1	2.0	µg/L	<2.0	
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	
Ethion	563-12-2	0.5	µg/L	<0.5	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons					
Naphthalene	91-20-3	1.0	µg/L	<1.0	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	
Fluorene	86-73-7	1.0	µg/L	<1.0	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	
Anthracene	120-12-7	1.0	µg/L	<1.0	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	
Pyrene	129-00-0	1.0	µg/L	<1.0	
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	
Chrysene	218-01-9	1.0	µg/L	<1.0	
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	



Page : 20 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Compound	CAS Number	Client sampling date / time		QA5
		LOR	Unit	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued				
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	1.0	µg/L	<1.0
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0
^ Sum of polycyclic aromatic hydrocarbons		0.5	µg/L	<0.5
^ Benzo(a)pyrene TEQ (WHO)		0.5	µg/L	<0.5
EP080/071: Total Petroleum Hydrocarbons				
C6 - C9 Fraction		20	µg/L	30
C10 - C14 Fraction		50	µg/L	<50
C15 - C28 Fraction		100	µg/L	<100
C29 - C36 Fraction		50	µg/L	<50
^ C10 - C36 Fraction (sum)		50	µg/L	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft				
C6 - C10 Fraction		20	µg/L	40
^ C6 - C10 Fraction minus BTEX (F1)		20	µg/L	40
>C10 - C16 Fraction		100	µg/L	<100
>C16 - C34 Fraction		100	µg/L	<100
>C34 - C40 Fraction		100	µg/L	<100
^ >C10 - C40 Fraction (sum)		100	µg/L	<100
EP080: BTEXN				
Benzene	71-43-2	1	µg/L	<1
Toluene	108-88-3	2	µg/L	<2
Ethylbenzene	100-41-4	2	µg/L	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2
ortho-Xylene	95-47-6	2	µg/L	<2
^ Total Xylenes	1330-20-7	2	µg/L	<2
^ Sum of BTEX		1	µg/L	<1
Naphthalene	91-20-3	5	µg/L	<5
EP068S: Organochlorine Pesticide Surrogate				
Dibromo-DDE	21655-73-2	0.1	%	91.8
EP068T: Organophosphorus Pesticide Surrogate				
DEF	78-48-8	0.1	%	90.1



Page : 21 of 22
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)


Compound	CAS Number	LOR	Client sample ID		QA5
			Client sampling date / time	Unit	
EP075(SIMS): Phenolic Compound Surrogates					
Phenol-d6	13127-88-3	0.1			
2-Chlorophenol-D4	93951-73-6	0.1			35.1
2,4,6-Tribromophenol	118-79-6	0.1			71.5
					82.3
EP075(SIM)T: PAH Surrogates					
2-Fluorobiphenyl	321-60-8	0.1			76.5
Anthracene-d10	1719-06-8	0.1			80.1
4-Terphenyl-d14	1718-51-0	0.1			85.1
EP080S: TPH(V)BTEX Surrogates					
1,2-Dichloroethane-D4	17060-07-0	0.1			97.6
Toluene-D8	2037-26-5	0.1			94.0
4-Bromofluorobenzene	460-00-4	0.1			100




Page : 22 of 22
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	138
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.8	134.5
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	34.8	154.5
2-Chlorophenol-D4	93951-73-6	41.9	152.8
2,4,6-Tribromophenol	118-79-6	26.0	156.8
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	33.8	156.5
Anthracene-d10	1719-06-8	36.9	153.1
4-Terphenyl-d14	1718-51-0	41.8	172.2
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	52.7	133.7
Toluene-D8	2037-26-5	60.3	131.1
4-Bromofluorobenzene	460-00-4	59.2	126.6
Sub-Matrix: WATER			
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	40.4	134.4
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	41.8	143.3
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10.0	71.9
2-Chlorophenol-D4	93951-73-6	26.8	130.2
2,4,6-Tribromophenol	118-79-6	19.3	180.8
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	13.9	146.1
Anthracene-d10	1719-06-8	34.6	137.4
4-Terphenyl-d14	1718-51-0	36.2	154.2
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	66.1	137.9
Toluene-D8	2037-26-5	79.2	119.6
4-Bromofluorobenzene	460-00-4	74.2	118.0



Environmental Division



QUALITY CONTROL REPORT

Work Order : EB1228782

Client : GOLDER ASSOCIATES

Contact : MR STUART DERHAM

Address : P O BOX 5569
55 KINGSFORD SMITH PARADE
MAROOCHYDORE QLD, AUSTRALIA 4558

E-mail : sderham@golder.com.au

Telephone : +61 07 5475 5900

Facsimile : +61 07 5475 5901

Project : 127683017 Task 2003

Site : SCA

C-O-C number : 127683017-1

Sampler : BS

Order number : MQ8154

Quote number : EN/002/12

Page : 1 of 18

Laboratory : Environmental Division Brisbane

Contact : Loren Schiavon

Address : 32 Shand Street Stafford QLD Australia 4053

E-mail : loren.schiavon@alsglobal.com

Telephone : +61 2 8784 8503

Facsimile : +61 2 8784 8500

QC Level : NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Date Samples Received : 05-NOV-2012

Issue Date : 13-NOV-2012

No. of samples received : 43

No. of samples analysed : 21


This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.



WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Andrew Epps	Metals Production Chemist	Brisbane Inorganics
Danielle White	Committal	WRG Subcontracting
Matt Frost	Senior Organic Chemist	Brisbane Inorganics
Matt Frost	Senior Organic Chemist	Brisbane Organics

Address: 32 Shand Street Stafford QLD Australia 4053 | PHONE +61-7-3243 7222 | Facsimile +61-7-3243 7218
Environmental Division Brisbane ABN 84 009 936 029 Part of the ALS Group A Campbell Brothers Limited Company

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Page : 2 of 18
Work Order : EB1228782
Client : GOLDR ASSOCIATES
Project : 127863017 Task 2003

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :

Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC



Page : 3 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
EA055: Moisture Content (QC Lot: 2582638)									
EB1228782-001	BH1-0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.1	1.7	21.6	No Limit
EB1228782-011	BH4-0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.9	15.8	0.0	0% - 50%
EA055: Moisture Content (QC Lot: 2582639)									
EB1228784-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.9	18.1	1.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2582611)									
Anonymous									
EB1228660-016		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	42	35	17.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	28	77	# 92.4	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	19	56.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	25	12.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	25.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	74	102	# 31.4	0% - 20%
EB1228782-016	BH6-0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	14	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	87	94	8.7	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	16	17	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	41	40	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2582612)									
EB1228660-016	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB1228782-016	BH6-0	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.6	0.0	No Limit
EK055: Ammonia as N (QC Lot: 2584377)									
EB1228424-002	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit
EB1228777-008	Anonymous	EK055: Ammonia as N	7664-41-7	20	mg/kg	160	150	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2582635)									
EB1228782-015	BH5-1.0	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2582642)									
EB1228661-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	460	470	3.3	0% - 20%
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2582641)									
EB1228782-001	BH1-0	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit



Page : 4 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
Sub-Matrix: SOIL									
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2582641) - continued									
EB1228782-001	BH1-0	EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2582641)									
EB1228782-001	BH1-0	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.13	<0.13	0.0	No Limit



Page : 5 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
Sub-Matrix: SOIL									
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2582641) - continued									
EB1228782-001	BH1-0	EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.13	<0.13	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2582618)									
EB1228782-001	BH1-0	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Page : 6 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
Sub-Matrix: SOIL									
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2582618) - continued									
EB1228782-001	BH1-0	EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (WHO)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2582617)									
EB1228650-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	4290	3910	9.2	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	960	1010	4.9	0% - 50%
		EP071: C10 - C14 Fraction	----	50	mg/kg	3280	3280	0.0	0% - 20%
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	8530	8200	3.9	0% - 20%
EB1228782-001	BH1-0	EP071: C15 - C28 Fraction	----	100	mg/kg	400	310	24.9	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	480	390	21.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
		EP071: C10 - C36 Fraction (sum)	----	50	mg/kg	880	700	22.8	0% - 50%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2582623)									
EB1228782-001	BH1-0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB1228782-043	QA6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2582617)									
EB1228650-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	3860	3590	7.1	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	570	640	12.5	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	4080	4020	1.5	0% - 20%
EB1228782-001	BH1-0	EP071: >C16 - C34 Fraction	----	100	mg/kg	760	600	23.3	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	200	170	18.1	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2582623)									
EB1228782-001	BH1-0	EP080: C6 - C10 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EB1228782-043	QA6	EP080: C6 - C10 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 2582623)									
EB1228782-001	BH1-0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Page : 7 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: SOIL		Method: Compound		Laboratory Duplicate (DUP) Report		Recovery Limits (%)		
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	
EP080: BTEXN (QC Lot: 2582623) - continued								
EB1228782-001	BH1-0	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene						
		EP080: ortho-Xylene	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	1	mg/kg	<1	<1	0.0	No Limit
		EP080: Benzene	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	1	mg/kg	<1	<1	0.0	No Limit
Sub-Matrix: WATER								
Laboratory sample ID	Client sample ID	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 2583218)								
EB1228726-001	Anonymous	7440-43-9 7440-38-2 7440-47-3 7440-50-8 7439-92-1 7440-02-0 7440-66-6 7440-43-9 7440-38-2 7440-47-3 7440-50-8 7439-92-1 7440-02-0 7440-66-6	0.0001 0.001 0.001 0.001 0.001 0.001 0.005 0.0001 0.001 0.001 0.001 0.001 0.001 0.001 0.005	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<0.0001 0.009 0.009 0.009 0.009 0.006 0.005 0.0001 0.001 0.001 0.001 0.001 0.001 0.005	<0.0001 0.009 0.009 0.009 0.009 0.007 0.005 0.0001 0.001 0.001 0.001 0.001 0.001 0.005	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit No Limit
		EG020A-T: Cadmium						
		EG020A-T: Arsenic						
		EG020A-T: Chromium						
		EG020A-T: Copper						
		EG020A-T: Lead						
		EG020A-T: Nickel						
		EG020A-T: Zinc						
		EG020A-T: Cadmium						
		EG020A-T: Arsenic						
		EG020A-T: Chromium						
		EG020A-T: Copper						
		EG020A-T: Lead						
		EG020A-T: Nickel						
		EG020A-T: Zinc						
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2586857)								
EB1228738-003	Anonymous	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EB1228768-007	Anonymous	7439-97-6	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2584340)								
EB1228710-025	Anonymous	----	20	µg/L	<20	<20	0.0	No Limit
EB1228785-001	Anonymous	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2584340)								
EB1228710-025	Anonymous	----	20	µg/L	<20	<20	0.0	No Limit
EB1228785-001	Anonymous	----	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 2584340)								
EB1228710-025	Anonymous	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Benzene						

APPENDIX B3:K



Page : 8 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
EB1228710-025	Anonymous	EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EB1228785-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit



Page : 9 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Method/Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
				Result	Spike Concentration	Spike Recovery (%)	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2582611)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	111	77	127
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	106	76	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	123	73	127
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	80	122
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	103	77	121
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	115	80	126
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	77	127
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2582612)								
EG035T: Mercury	7439-97-6	0.10	mg/kg	<0.1	2.57 mg/kg	101	70	130
EK0055: Ammonia as N (QCLot: 2584377)								
EK0055: Ammonia as N	7664-41-7	20	mg/kg	<20	500 mg/kg	100	90	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2582635)								
EK059G: Nitrite + Nitrate as N (Sol)	----	0.1	mg/kg	<0.1	2.50 mg/kg	103	72	124
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2582642)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	1000 mg/kg	83.8	70	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 2582641)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	58	121
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	# 143	57	112
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	54	121
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	60	140
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	66	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	110	70	130
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.0	75	130
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	108	58	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	59	119
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	49	125
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	108	58	118
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.0	72	136
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	67	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	65	150
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	61	123
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	60	122
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	35	125
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	52	125



Page : 10 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: SOIL		Method Blank (MB) Report			Laboratory Control Spike (LCS) Report		
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)
				Low	High		
EP068A: Organochlorine Pesticides (OC) (QCLot: 2582641) - continued							
EP068: 4,4'-DDT	50-29-3	0.05	mg/kg	-----	0.5 mg/kg	87.0	80
		0.2	mg/kg	<0.2	-----	-----	-----
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	55
EP068: Methoxychlor	72-43-5	0.05	mg/kg	-----	0.5 mg/kg	91.6	47
		0.2	mg/kg	<0.2	-----	-----	-----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2582641)							
EP068: Dieldrin	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	40
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	20.3
EP068: Monocrotophos	6923-22-4	0.05	mg/kg	-----	0.5 mg/kg	75.6	30
		0.2	mg/kg	<0.2	-----	-----	-----
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	44
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	107	70
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	106	70
EP068: Parathion-methyl	298-00-0	0.05	mg/kg	-----	0.5 mg/kg	96.2	50
		0.2	mg/kg	<0.2	-----	-----	-----
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	115	59
EP068: Fenitrothion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	111	63
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	66
EP068: Parathion	56-38-2	0.05	mg/kg	-----	0.5 mg/kg	# 125	53
		0.2	mg/kg	<0.2	-----	-----	-----
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	116	70
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	80
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	40
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	108	80
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	114	61
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	109	52
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	# 21.5	40
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2582618)							
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	5.0 mg/kg	102	66
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	5.0 mg/kg	107	62
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	5.0 mg/kg	101	80
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	5.0 mg/kg	98.3	71
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	5.0 mg/kg	99.3	67
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	5.0 mg/kg	101	65
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	5.0 mg/kg	101	64
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	5.0 mg/kg	101	64
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	5.0 mg/kg	106	56
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	5.0 mg/kg	102	57
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	5.0 mg/kg	101	44



Page : 11 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Concentration	Spike Recovery (%)	LCS	Low	High
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 2582618) - continued									
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	5.0 mg/kg	92.4	59	129	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	5.0 mg/kg	95.7	60	121	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.0 mg/kg	109	51	135	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	5.0 mg/kg	109	45	134	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	5.0 mg/kg	107	53	133	
EP075(SIM): Benzo(a)pyrene TEQ (WHO)	----	0.5	mg/kg	<0.5	-----	-----	-----	-----	
EP080/074: Total Petroleum Hydrocarbons (QCLot: 2582617)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	312 mg/kg	110	84	117	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	500 mg/kg	110	80	118	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	-----	-----	-----	-----	
EP080/074: Total Petroleum Hydrocarbons (QCLot: 2582623)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	86.1	66	129	
EP080/074: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582617)									
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	413 mg/kg	114	86	117	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	360 mg/kg	105	69	113	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	-----	-----	-----	-----	
EP080/074: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582623)									
EP080: C6 - C10 Fraction	----	10	mg/kg	<10	18.5 mg/kg	88.3	66	131	
EP080: BTEXN (QCLot: 2582623)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.8	73	108	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.1	73	111	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	88.6	67	110	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	83.9	66	112	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.1	68	110	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	82.2	72	115	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Concentration	Spike Recovery (%)	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2583218)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	87.9	80	116	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	91.6	84	112	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.100 mg/L	90.9	87	119	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.200 mg/L	91.0	85	121	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.100 mg/L	93.4	89	116	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.100 mg/L	90.5	86	120	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.200 mg/L	87.5	77	119	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2586857)									



Page : 12 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report		
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2586857) - continued							
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	98.0	78 120
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2584534)							
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	87.3	50 128
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	93.1	46 116
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	78.5	44 129
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	84.5	48 129
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	80.8	44 115
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.1	38 118
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	85.4	52 123
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	89.6	52 124
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	88.0	48 125
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	80.8	48 134
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	88.3	47 125
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	81.3	46 127
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	82.7	50 123
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	90.8	44 129
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	81.2	49 126
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	87.2	49 124
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	84.7	49 132
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	95.7	42 124
EP068: 4,4'-DDT	50-29-3	2.0	µg/L	<2	5 µg/L	77.0	35 135
EP068: Endrin ketone	53484-70-5	0.5	µg/L	<0.5	5 µg/L	88.0	38 129
EP068: Methoxychlor	72-43-5	2.0	µg/L	<2	5 µg/L	73.8	15 139
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2584534)							
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	82.2	49 115
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	73.1	44 118
EP068: Monocrotophos	6923-22-4	2.0	µg/L	<2	5 µg/L	# 5.7	21.2 49
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	70.2	46 111
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	97.9	44 129
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	89.7	50 118
EP068: Parathion-methyl	298-00-0	2.0	µg/L	<2	5 µg/L	83.6	42 122
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	98.5	46 122
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	90.2	48 121
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	81.1	53 119
EP068: Parathion	56-38-2	2.0	µg/L	<2	5 µg/L	96.1	43 127
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	92.6	50 127
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	92.3	50 127
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	89.8	50 124
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	93.7	43 121



Page : 13 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			Recovery Limits (%)	
				Result	Concentration	Spike Recovery (%)	LCS	Low	High	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2584534) - continued										
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	86.5	49	126		
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	95.9	50	127		
EP068: Carbofenthothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	94.0	48	128		
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	69.4	49	135		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2584533)										
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	73.9	47	109		
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	75.5	46	118		
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	77.7	50	109		
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	75.6	50	114		
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	76.9	49	115		
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	74.7	44	120		
EP075(SIM): Fluoranthene	208-44-0	1	µg/L	<1.0	10 µg/L	76.2	46	122		
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	76.9	46	122		
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	80.7	48	125		
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	80.3	43	119		
EP075(SIM): Benzo(b)fluoranthene	205-99-2	1	µg/L	<1.0	10 µg/L	84.4	43	138		
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	81.2	40	132		
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	81.1	40	125		
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	87.2	40	137		
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	87.8	42	140		
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	85.3	37	136		
EP075(SIM): Benzo(a)pyrene TEQ (WHO)	----	0.5	µg/L	<0.5	-----	-----	-----	-----		
EP080/074: Total Petroleum Hydrocarbons (QCLot: 2584340)										
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	104	71	129		
EP080/074: Total Petroleum Hydrocarbons (QCLot: 2584532)										
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1275 µg/L	102	42	116		
EP071: C15 - C28 Fraction	----	100	µg/L	<100	1850 µg/L	115	53	135		
EP071: C29 - C36 Fraction	----	50	µg/L	<50	-----	-----	-----	-----		
EP080/074: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2584340)										
EP080: C6 - C10 Fraction	----	20	µg/L	<20	185 µg/L	106	70	130		
EP080: C6 - C10 Fraction minus BTEX (F1)	----	20	µg/L	<20	-----	-----	-----	-----		
EP080/074: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2584532)										
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1670 µg/L	108	47	125		
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1285 µg/L	107	47	133		
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	-----	-----	-----	-----		
EP080: BTEXN (QCLot: 2584340)										
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	101	76	124		
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	108	75	125		



Page : 14 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
EP080: BTEXN (QCLot: 2584340) - continued									
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	108	75	124	124
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	20 µg/L	107	76	126	126
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	76	124	124
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	*****	*****	*****	*****	*****
EP080: Sum of BTEX	-----	1	µg/L	<1	*****	*****	*****	*****	*****
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	104	74	124	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QCLot: 2582611)						
EB1228782-001	BH1-0	EG005T: Arsenic	7440-38-2	50 mg/kg	# 58.3	70 130
		EG005T: Cadmium	7440-43-9	25 mg/kg	79.4	70 130
		EG005T: Chromium	7440-47-3	50 mg/kg	# Not Determined	70 130
		EG005T: Copper	7440-50-8	50 mg/kg	# Not Determined	70 130
		EG005T: Lead	7439-92-1	50 mg/kg	# Not Determined	70 130
		EG005T: Nickel	7440-02-0	50 mg/kg	# 66.4	70 130
		EG005T: Zinc	7440-66-6	50 mg/kg	# Not Determined	70 130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2582612)						
EB1228782-001	BH1-0	EG035T: Mercury	7439-97-6	5.0 mg/kg	72.3	70 130
EK055: Ammonia as N (QCLot: 2584377)						
EB1228424-001	Anonymous	EK055: Ammonia as N	7664-41-7	100 mg/kg	98.0	70 130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2582635)						
EB1228782-016	BH6-0	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.0 mg/kg	97.2	70 130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2582642)						
EB1228661-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	92.3	70 130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2582641)						
EB1228782-002	BH1-0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.4	70 130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	111	70 130
		EP068: Aldrin	309-00-2	0.5 mg/kg	80.0	70 130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	92.4	70 130
		EP068: Endrin	72-20-8	2 mg/kg	103	70 130



Page : 15 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2582641) - continued						
EB1228782-002	BH1-0.5	EP068: 4,4'-DDT	50-29-3	2 mg/kg	85.7	70 130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2582641)						
EB1228782-002	BH1-0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	112	70 130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	107	70 130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	118	70 130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	91.9	70 130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	108	70 130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2582618)						
EB1228782-002	BH1-0.5	EP075(SIM): Acenaphthene	83-32-9	2.5 mg/kg	99.5	70 130
		EP075(SIM): Pyrene	129-00-0	2.5 mg/kg	110	70 130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2582617)						
EB1228652-001	Anonymous	EP071: C10 - C14 Fraction	----	312 mg/kg	# Not Determined	70 130
		EP071: C15 - C28 Fraction	----	500 mg/kg	# Not Determined	70 130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2582623)						
EB1228782-002	BH1-0.5	EP080: C6 - C9 Fraction	----	8 mg/kg	75.9	70 130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582617)						
EB1228652-001	Anonymous	EP071: >C10 - C16 Fraction	----	413 mg/kg	# Not Determined	70 130
		EP071: >C16 - C34 Fraction	----	360 mg/kg	# Not Determined	70 130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582623)						
EB1228782-002	BH1-0.5	EP080: C6 - C10 Fraction	----	8 mg/kg	71.6	70 130
EP080: BTEXN (QCLot: 2582623)						
EB1228782-002	BH1-0.5	EP080: Benzene	71-43-2	2 mg/kg	74.3	70 130
		EP080: Toluene	108-88-3	2 mg/kg	77.6	70 130
Sub-Matrix: WATER						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High
EG020T: Total Metals by ICP-MS (QCLot: 2583218)						
EB1228726-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1,000 mg/L	106	70 130
		EG020A-T: Cadmium	7440-43-9	0.500 mg/L	101	70 130
		EG020A-T: Chromium	7440-47-3	1,000 mg/L	92.4	70 130
		EG020A-T: Copper	7440-50-8	1,000 mg/L	93.6	70 130
		EG020A-T: Lead	7439-92-1	1,000 mg/L	93.2	70 130
		EG020A-T: Nickel	7440-02-0	1,000 mg/L	97.4	70 130
		EG020A-T: Zinc	7440-66-6	1,000 mg/L	104	70 130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2586857)						
EB1228738-004	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	105	70 130



Page : 16 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report	
				Spike Concentration	Recovery Limits (%)
		MS	Low	High	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2584340)					
EB1228710-026	Anonymous	EP080: C6 - C9 Fraction	104	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2584340)					
EB1228710-026	Anonymous	EP080: C6 - C10 Fraction	109	70	130
EP080: BTEXN (QCLot: 2584340)					
EB1228710-026	Anonymous	EP080: Benzene	99.0	70	130
		EP080: Toluene	101	70	130

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report		RPDs (%)	
				Spike Concentration	MSD	Recovery Limits (%)	Control Limit
		MS	MSD	Low	High	Value	
EG005T: Total Metals by ICP-AES (QCLot: 2582611)							
EB1228782-001	BH1-0	EG005T: Arsenic	7440-38-2	# 58.3	70	130	*****
		EG005T: Cadmium	7440-43-9	79.4	70	130	*****
		EG005T: Chromium	7440-47-3	# Not Determined	70	130	*****
		EG005T: Copper	7440-50-8	# Not Determined	70	130	*****
		EG005T: Lead	7439-92-1	# Not Determined	70	130	*****
		EG005T: Nickel	7440-02-0	# 66.4	70	130	*****
		EG005T: Zinc	7440-66-6	# Not Determined	70	130	*****
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2582612)							
EB1228782-001	BH1-0	EG035T: Mercury	7439-97-6	72.3	70	130	*****
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2582617)							
EB1228652-001	Anonymous	EP071: C10 - C14 Fraction		# Not Determined	70	130	*****
		EP071: C15 - C28 Fraction		# Not Determined	70	130	*****
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582617)							
EB1228652-001	Anonymous	EP071: >C10 - C16 Fraction		# Not Determined	70	130	*****
		EP071: >C16 - C34 Fraction		# Not Determined	70	130	*****
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2582618)							
EB1228782-002	BH1-0.5	EP075(SIM): Acenaphthene	83-32-9	99.5	70	130	*****
		EP075(SIM): Pyrene	129-00-0	110	70	130	*****
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2582623)							
EB1228782-002	BH1-0.5	EP080: C6 - C9 Fraction		75.9	70	130	*****
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2582623)							
EB1228782-002	BH1-0.5	EP080: C6 - C10 Fraction		71.6	70	130	*****



Page : 17 of 18
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: SOIL

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPDs (%)		
					MS	MSD	High	Low	High	Value	Control Limit		
EP080: BTEXN (QCLot: 2582623)													
EB1228782-002	BH1-0.5	EP080: Benzene	71-43-2	2 mg/kg	74.3	-----	70	130	-----	-----	-----	-----	
		EP080: Toluene	108-88-3	2 mg/kg	77.6	-----	70	130	-----	-----	-----	-----	
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2582635)													
EB1228782-016	BH6-0	EK059G: Nitrite + Nitrate as N (Sol.)	-----	2.0 mg/kg	97.2	-----	70	130	-----	-----	-----	-----	
EP068A: Organochlorine Pesticides (OC) (QCLot: 2582641)													
EB1228782-002	BH1-0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.4	-----	70	130	-----	-----	-----	-----	
		EP068: Heptachlor	76-44-8	0.5 mg/kg	111	-----	70	130	-----	-----	-----	-----	
		EP068: Aldrin	309-00-2	0.5 mg/kg	80.0	-----	70	130	-----	-----	-----	-----	
		EP068: Dieldrin	60-57-1	0.5 mg/kg	92.4	-----	70	130	-----	-----	-----	-----	
		EP068: Endrin	72-20-8	2 mg/kg	103	-----	70	130	-----	-----	-----	-----	
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	85.7	-----	70	130	-----	-----	-----	-----	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2582641)													
EB1228782-002	BH1-0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	112	-----	70	130	-----	-----	-----	-----	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	107	-----	70	130	-----	-----	-----	-----	
		EP068: Pimphos-ethyl	23505-41-1	0.5 mg/kg	118	-----	70	130	-----	-----	-----	-----	
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	91.9	-----	70	130	-----	-----	-----	-----	
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	108	-----	70	130	-----	-----	-----	-----	
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2582642)													
EB1228661-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	-----	500 mg/kg	92.3	-----	70	130	-----	-----	-----	-----	
EK055: Ammonia as N (QCLot: 2584377)													
EB1228424-001	Anonymous	EK055: Ammonia as N	7664-41-7	100 mg/kg	98.0	-----	70	130	-----	-----	-----	-----	

Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)			Recovery Limits (%)			RPDs (%)		
					MS	MSD	High	Low	High	Value	Control Limit		
EG020T: Total Metals by ICP-MS (QCLot: 2583218)													
EB1228726-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1.000 mg/L	106	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Cadmium	7440-43-9	0.500 mg/L	101	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Chromium	7440-47-3	1.000 mg/L	92.4	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Copper	7440-50-8	1.000 mg/L	93.6	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Lead	7439-92-1	1.000 mg/L	93.2	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Nickel	7440-02-0	1.000 mg/L	97.4	-----	70	130	-----	-----	-----	-----	
		EG020A-T: Zinc	7440-66-6	1.000 mg/L	104	-----	70	130	-----	-----	-----	-----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2584340)													
EB1228710-026	Anonymous	EP080: C6 - C9 Fraction	-----	40 µg/L	104	-----	70	130	-----	-----	-----	-----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2584340)													
EB1228710-026	Anonymous	EP080: C6 - C10 Fraction	-----	40 µg/L	109	-----	70	130	-----	-----	-----	-----	
EP080: BTEXN (QCLot: 2584340)													

APPENDIX B3:K



Page : 18 of 18
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			RPDs (%)		
					MS	MSD	Recovery Limits (%)	High	Low	Value
EP080: BTEXN (QCLot: 2584340) - continued EB1228710-026	Anonymous	EP080: Benzene	71-43-2	10 µg/L	99.0	*****	70	130	*****	*****
		EP080: Toluene	108-88-3	10 µg/L	101	*****	70	130	*****	*****
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2586857) EB1228738-004	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	105	*****	70	130	*****	*****



Environmental Division



INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB1228782	Page	: 1 of 11
Client	: GOLDER ASSOCIATES	Laboratory	: Environmental Division Brisbane
Contact	: MR STUART DERHAM	Contact	: Loren Schiavon
Address	: P O BOX 5569 55 KINGSFORD SMITH PARADE MAROOCHYDORE QLD, AUSTRALIA 4558	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sderham@golder.com.au	E-mail	: loren.schiavon@alsglobal.com
Telephone	: +61 07 5475 5900	Telephone	: +61 2 8784 8503
Facsimile	: +61 07 5475 5901	Facsimile	: +61 2 8784 8500
Project	: 127683017 Task 2003	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: SCA	Date Samples Received	: 05-NOV-2012
C-O-C number	: 127683017-1	Issue Date	: 13-NOV-2012
Sampler	: BS	No. of samples received	: 43
Order number	: MQ8154	No. of samples analysed	: 21
Quote number	: EN/002/12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



Page : 2 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
		Date extracted	Due for extraction	Date analysed	Due for analysis
EA055: Moisture Content					
Soil Glass Jar - Unpreserved (EA055-103)					
BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, BH5-1.0, BH6-0, BH7-1.0, BH8-1.0, BH9-0, BH10-0, BH11-0, BH12-0, QA1, QA3	02-NOV-2012	*****	*****	06-NOV-2012	16-NOV-2012
					✓
EG005T: Total Metals by ICP-AES					
Soil Glass Jar - Unpreserved (EG005T)					
BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, BH5-1.0, BH6-0, BH7-1.0, BH8-1.0, BH9-0, BH10-0, BH11-0, BH12-0, QA1, QA3	02-NOV-2012	08-NOV-2012	01-MAY-2013	08-NOV-2012	01-MAY-2013
					✓
EG035T: Total Recoverable Mercury by FIMS					
Soil Glass Jar - Unpreserved (EG035T)					
BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, BH5-1.0, BH6-0, BH7-1.0, BH8-1.0, BH9-0, BH10-0, BH11-0, BH12-0, QA1, QA3	02-NOV-2012	08-NOV-2012	30-NOV-2012	08-NOV-2012	30-NOV-2012
					✓



Page : 3 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Evaluation	Date analysed	Due for analysis	Evaluation
		Date extracted	Due for extraction				
EK055: Ammonia as N							
Soil Glass Jar - Unpreserved (EK055) BH6-0, BH7-1.0, BH8-1.0	02-NOV-2012	****	****	****	08-NOV-2012	01-MAY-2013	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G) BH6-0, BH7-1.0, BH8-1.0	02-NOV-2012	09-NOV-2012	01-MAY-2013	✓	12-NOV-2012	01-MAY-2013	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Soil Glass Jar - Unpreserved (EK061G) BH5-1.0, BH7-1.0, BH8-1.0	02-NOV-2012	07-NOV-2012	01-MAY-2013	✓	08-NOV-2012	01-MAY-2013	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) BH1-0, BH2-0, BH3-0, BH4-0, BH4-0.5, BH9-0, BH11-0, BH12-0, BH13-0, QA3	02-NOV-2012	08-NOV-2012	16-NOV-2012	✓	09-NOV-2012	18-DEC-2012	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) BH1-0, BH2-0, BH3-0, BH4-0, BH4-0.5, BH9-0, BH11-0, BH13-0, QA3	02-NOV-2012	08-NOV-2012	16-NOV-2012	✓	09-NOV-2012	18-DEC-2012	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft							
Soil Glass Jar - Unpreserved (EP071) BH1-0, BH2-0, BH3-0, BH4-0, BH4-0.5, QA1, QA3	02-NOV-2012	07-NOV-2012	16-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) BH1-0, BH2-0, BH3-0, BH4-0, BH4-0.5, QA1, QA3	02-NOV-2012	07-NOV-2012	16-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓



Page : 4 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Matrix: **SOIL** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Evaluation	Analysis		
		Date extracted	Due for extraction		Date analysed	Due for analysis	
EP080: BTEX Soil Glass Jar - Unpreserved (EP080) BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, QA3, QA6	02-NOV-2012	06-NOV-2012	16-NOV-2012	✓	08-NOV-2012	16-NOV-2012	✓
EP080: BTEXN Soil Glass Jar - Unpreserved (EP080) BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, QA3, QA6	02-NOV-2012	06-NOV-2012	16-NOV-2012	✓	08-NOV-2012	16-NOV-2012	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft Soil Glass Jar - Unpreserved (EP080) BH1-0.5, BH2-0.5, BH3-0.5, BH4-0.5, QA1, QA6	02-NOV-2012	06-NOV-2012	16-NOV-2012	✓	08-NOV-2012	16-NOV-2012	✓

Matrix: **WATER** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Evaluation	Analysis		
		Date extracted	Due for extraction		Date analysed	Due for analysis	
EG020T: Total Metals by ICP-MS Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) QA5	02-NOV-2012	07-NOV-2012	01-MAY-2013	✓	07-NOV-2012	01-MAY-2013	✓
EG035T: Total Recoverable Mercury by FIMS Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) QA5	02-NOV-2012	*****	*****	*****	09-NOV-2012	30-NOV-2012	✓
EP068A: Organochlorine Pesticides (OC) Amber Glass Bottle - Unpreserved (EP068) QA5	02-NOV-2012	07-NOV-2012	09-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓
EP068B: Organophosphorus Pesticides (OP) Amber Glass Bottle - Unpreserved (EP068) QA5	02-NOV-2012	07-NOV-2012	09-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓
EP080/071: Total Petroleum Hydrocarbons Amber Glass Bottle - Unpreserved (EP071) QA5	02-NOV-2012	07-NOV-2012	09-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓

APPENDIX B3:K



Page : 5 of 11
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Matrix: **WATER** Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Evaluation	Analysis		
		Date extracted	Due for extraction		Date analysed	Due for analysis	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons Amber Glass Bottle - Unpreserved (EP075(SIM)) QA5	02-NOV-2012	07-NOV-2012	09-NOV-2012	✓	07-NOV-2012	17-DEC-2012	✓
EP080: BTEXN Amber VOC Vial - Sulfuric Acid (EP080) QA5	02-NOV-2012	08-NOV-2012	16-NOV-2012	✓	08-NOV-2012	16-NOV-2012	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft Amber VOC Vial - Sulfuric Acid (EP080) QA5	02-NOV-2012	08-NOV-2012	16-NOV-2012	✓	08-NOV-2012	16-NOV-2012	✓



Page : 6 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(when) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL** Evaluation: * = Quality Control frequency not within specification; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count			Rate (%)		Evaluation	Quality Control Specification
		QC	Regular	Actual	Expected			
Laboratory Duplicates (DUP)								
Buchi Ammonia	EK055	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Moisture Content	EA055-103	3	30	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	25.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	1	10	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Pesticides by GCMS	EP068	2	15	13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TKN as N By Discrete Analyser	EK061G	1	6	16.7	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH Volatiles/BTEX	EP080	2	11	18.2	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Laboratory Control Samples (LCS)								
Buchi Ammonia	EK055	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Pesticides by GCMS	EP068	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TKN as N By Discrete Analyser	EK061G	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH Volatiles/BTEX	EP080	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Method Blanks (MB)								
Buchi Ammonia	EK055	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Pesticides by GCMS	EP068	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TKN as N By Discrete Analyser	EK061G	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
TPH Volatiles/BTEX	EP080	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Matrix Spikes (MS)								
Buchi Ammonia	EK055	1	18	5.6	5.0	✓	ALS QCS3 requirement	
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	25.0	5.0	✓	ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	1	10	10.0	5.0	✓	ALS QCS3 requirement	
Pesticides by GCMS	EP068	1	15	6.7	5.0	✓	ALS QCS3 requirement	
TKN as N By Discrete Analyser	EK061G	1	6	16.7	5.0	✓	ALS QCS3 requirement	
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	ALS QCS3 requirement	
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	ALS QCS3 requirement	
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	ALS QCS3 requirement	
TPH Volatiles/BTEX	EP080	1	11	9.1	5.0	✓	ALS QCS3 requirement	



Page : 7 of 11
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Matrix: **SOIL** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Quality Control Specification
		QC	Regular	Actual	Expected	
Analytical Methods						
Matrix Spikes (MS) - Continued						
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	ALS QCS3 requirement ✓
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	ALS QCS3 requirement ✓
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	ALS QCS3 requirement ✓
TPH Volatiles/BTEX	EP080	1	11	9.1	5.0	ALS QCS3 requirement ✓

Matrix: **WATER** Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Quality Control Specification
		QC	Regular	Actual	Expected	
Analytical Methods						
Laboratory Duplicates (DUP)						
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Laboratory Control Samples (LCS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Pesticides by GCMS	EP068	1	1	100.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Method Blanks (MB)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.5	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Pesticides by GCMS	EP068	1	1	100.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement ✓
Matrix Spikes (MS)						
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	ALS QCS3 requirement ✓
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	ALS QCS3 requirement ✓
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	ALS QCS3 requirement ✓



Page : 8 of 11
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127683017 Task 2003

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Buchi Ammonia	EK055	SOIL	APHA 21st ed., 4500 NH ₃ -B&G, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Nitrite and Nitrate as N (NO _x - Soluble by Discrete Analyser	EK059G	SOIL	APHA 21st ed., 4500 NO ₃ - F. Combined oxidised Nitrogen (NO ₂ +NO ₃) in a water extract is determined by Chemical Reduction, and direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	APHA 21st ed., 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NO _x) By Discrete Analyser	EK062G	SOIL	APHA 21st ed., 4500 Norg/NO ₃ - Total Nitrogen is determined as the sum of TKN and Oxidised Nitrogen, each determined separately as N.
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Faecal Coliforms MPN	* MM616	SOIL	Microbiological analysis subcontracted to ALS Scoresby (NATA Accredited Laboratory No. 992)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020; ALS QWI-ENEG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)



Page : 9 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Analytical Methods	Method	Matrix	Method Descriptions
Pesticides by GCMS	EP088	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	APHA 21st ed., 4500 Norg- D; APHA 21st ed., 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house. Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house. Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.



Page : 10 of 11
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES
 Project : 127683017 Task 2003

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	EB1228660-016	Anonymous	Nickel	7440-02-0	92.4 %	0-20%	RPD exceeds LOR based limits
EG005T: Total Metals by ICP-AES	EB1228660-016	Anonymous	Zinc	7440-66-6	31.4 %	0-20%	RPD exceeds LOR based limits
Laboratory Control Spike (LCS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	3062850-002	---	Hexachlorobenzene (HCB)	118-74-1	143 %	57-112%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	3062850-002	---	Parathion	56-38-2	125 %	53-118%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	3062850-002	---	Azinphos Methyl	86-50-0	21.5 %	40-135%	Recovery less than lower control limit
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Arsenic	7440-38-2	58.3 %	70-130%	Recovery less than lower data quality objective
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Chromium	7440-47-3	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Copper	7440-50-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Lead	7439-92-1	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Nickel	7440-02-0	66.4 %	70-130%	Recovery less than lower data quality objective
EG005T: Total Metals by ICP-AES	EB1228782-001	BH1-0	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Petroleum Hydrocarbons	EB1228652-001	Anonymous	C10 - C14 Fraction	---	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Petroleum Hydrocarbons	EB1228652-001	Anonymous	C15 - C28 Fraction	---	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EB1228652-001	Anonymous	>C10 - C16 Fraction	---	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	EB1228652-001	Anonymous	>C16 - C34 Fraction	---	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.



Page : 11 of 11
 Work Order : EB1228782
 Client : GOLDR ASSOCIATES
 Project : 127883017 Task 2003

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068B: Organophosphorus Pesticides (OP)	3065233-018	---	Monocrotophos	6923-22-4	5.7 %	21.2-49%	Recovery less than lower control limit

- For all matrices, no Method Blank value outliers occur.

Regular Sample Surrogates

Sub-Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	EB1228782-004	BH2-0	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068S: Organochlorine Pesticide Surrogate	EB1228782-010	BH4-0	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068S: Organochlorine Pesticide Surrogate	EB1228782-040	QA1	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068S: Organochlorine Pesticide Surrogate	EB1228782-007	BH3-0	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068S: Organochlorine Pesticide Surrogate	EB1228782-041	QA3	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1228782-004	BH2-0	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1228782-010	BH4-0	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1228782-040	QA1	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1228782-007	BH3-0	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1228782-041	QA3	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



Environmental Division



SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: EB1228782	Laboratory	: Environmental Division Brisbane
Client	: GOLDER ASSOCIATES	Contact	: Loren Schiavon
Contact	: MR STUART DERHAM	Address	: 32 Shand Street Stafford QLD Australia
Address	: P O BOX 5569 55 KINGSFORD SMITH PARADE MAROOCHYDORE QLD, AUSTRALIA 4558		4053
E-mail	: sderham@golder.com.au	E-mail	: loren.schiavon@alsglobal.com
Telephone	: +61 07 5475 5900	Telephone	: +61 2 8784 8503
Facsimile	: +61 07 5475 5901	Facsimile	: +61 2 8784 8500
Project	: 127683017 Task 2003	Page	: 1 of 4
Order number	: MQ8154	Quote number	: ES2012GOLASS0442 (EN/002/12)
C-O-C number	: 127683017-1	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: SCA		
Sampler	: BS		

Dates

Date Samples Received : 05-NOV-2012
 Issue Date : 06-NOV-2012 10:32
 Client Requested Due Date : 12-NOV-2012
 Scheduled Reporting Date : **12-NOV-2012**

Delivery Details

Mode of Delivery : Carrier
 Temperature : 1.6°C - Ice present

APPENDIX B3:K

Issue Date : 06-NOV-2012 10:32
 Page : 2 of 4
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EK065 (solids) Ammonia as N	SOIL - EK062G (Solids) Total Nitrogen as N (TKN + NOX) By Discrete Analyser	SOIL - M4 FC & E.coli by MPN	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides	SOIL - S-18 (NO MOIST) TPH(C6-C9)/BTEX with No Moisture for TBs	SOIL - S-26 8 metals/TPH/BTEX/PAH
EB1228782-001	02-NOV-2012 15:00	BH1-0						✓		✓
EB1228782-002	02-NOV-2012 15:00	BH1-0.5						✓		✓
EB1228782-003	02-NOV-2012 15:00	BH1-1.0	✓							
EB1228782-004	02-NOV-2012 15:00	BH2-0						✓		✓
EB1228782-005	02-NOV-2012 15:00	BH2-0.5						✓		✓
EB1228782-006	02-NOV-2012 15:00	BH2-1.0	✓							
EB1228782-007	02-NOV-2012 15:00	BH3-0						✓		✓
EB1228782-008	02-NOV-2012 15:00	BH3-0.5						✓		✓
EB1228782-009	02-NOV-2012 15:00	BH3-1.0	✓							
EB1228782-010	02-NOV-2012 15:00	BH4-0						✓		✓
EB1228782-011	02-NOV-2012 15:00	BH4-0.5						✓		✓
EB1228782-012	02-NOV-2012 15:00	BH4-1.0	✓							
EB1228782-013	02-NOV-2012 15:00	BH5-0	✓							
EB1228782-014	02-NOV-2012 15:00	BH5-0.5	✓							
EB1228782-015	02-NOV-2012 15:00	BH5-1.0		✓	✓	✓	✓			
EB1228782-016	02-NOV-2012 15:00	BH6-0		✓	✓	✓	✓			
EB1228782-017	02-NOV-2012 15:00	BH6-0.5	✓							
EB1228782-018	02-NOV-2012 15:00	BH6-1.0	✓							
EB1228782-019	02-NOV-2012 15:00	BH7-0	✓							
EB1228782-020	02-NOV-2012 15:00	BH7-0.5	✓							
EB1228782-021	02-NOV-2012 15:00	BH7-1.0		✓	✓		✓			
EB1228782-022	02-NOV-2012 15:00	BH8-0	✓							
EB1228782-023	02-NOV-2012 15:00	BH8-0.5	✓							
EB1228782-024	02-NOV-2012 15:00	BH8-1.0		✓	✓		✓			
EB1228782-025	02-NOV-2012 15:00	BH9-0					✓	✓		
EB1228782-026	02-NOV-2012 15:00	BH9-0.5	✓							
EB1228782-027	02-NOV-2012 15:00	BH9-1.0	✓							
EB1228782-028	02-NOV-2012 15:00	BH10-0					✓	✓		
EB1228782-029	02-NOV-2012 15:00	BH10-0.5	✓							
EB1228782-030	02-NOV-2012 15:00	BH10-1.0	✓							
EB1228782-031	02-NOV-2012 15:00	BH11-0					✓	✓		
EB1228782-032	02-NOV-2012 15:00	BH11-0.5	✓							
EB1228782-033	02-NOV-2012 15:00	BH11-1.0	✓							
EB1228782-034	02-NOV-2012 15:00	BH12-0					✓	✓		
EB1228782-035	02-NOV-2012 15:00	BH12-0.5	✓							

APPENDIX B3:K

Issue Date : 06-NOV-2012 10:32
 Page : 3 of 4
 Work Order : EB1228782
 Client : GOLDER ASSOCIATES



			(On Hold) SOIL No analysis requested	SOIL - EK055 (solids) Ammonia as N	SOIL - EK062G (Solids) Total Nitrogen as N (TKN + NOx) By Discrete Analyser	SOIL - M4 FC & E.coli by MPN	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides	SOIL - S-18 (NO MOIST) TPH(C6-C9)/BTEX with No Moisture for TBs	SOIL - S-26 8 metals/TPH/BTEX/PAH
EB1228782-036	02-NOV-2012 15:00	BH12-1.0	✓							
EB1228782-037	02-NOV-2012 15:00	BH13-0					✓	✓		
EB1228782-038	02-NOV-2012 15:00	BH13-0.5	✓							
EB1228782-039	02-NOV-2012 15:00	BH13-1.0	✓							
EB1228782-040	02-NOV-2012 15:00	QA1						✓		✓
EB1228782-041	02-NOV-2012 15:00	QA3						✓		✓
EB1228782-043	02-NOV-2012 15:00	QA6							✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-12 OC/OP Pesticides	WATER - W-26T TPH/BTEX/PAH/total 8 Metals
EB1228782-042	02-NOV-2012 15:00	QA5	✓	✓

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method	Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
					Date	Evaluation	Date	Evaluation
MW008S: Thermotolerant Coliforms & E.coli by MPN								
BH5-1.0		Sterile Plastic Jar	----	04-NOV-2012	05-NOV-2012	✗	----	----
BH6-0		Sterile Plastic Jar	----	04-NOV-2012	05-NOV-2012	✗	----	----

APPENDIX B3:K

Issue Date : 06-NOV-2012 10:32
Page : 4 of 4
Work Order : EB1228782
Client : GOLDER ASSOCIATES



Requested Deliverables

MR BLAKE SKELHORN

- *AU Certificate of Analysis - NATA	Email	bskelhorn@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	bskelhorn@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	bskelhorn@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT	Email	bskelhorn@golder.com.au
- Chain of Custody (CoC)	Email	bskelhorn@golder.com.au
- EDI Format - ENMRG	Email	bskelhorn@golder.com.au
- EDI Format - EQUIS V5 Generic	Email	bskelhorn@golder.com.au
- EDI Format - ESDAT	Email	bskelhorn@golder.com.au
- EDI Format - GOLDER_EXCEL	Email	bskelhorn@golder.com.au

MR STUART DERHAM

- *AU Certificate of Analysis - NATA (COA)	Email	sderham@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	sderham@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	sderham@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	sderham@golder.com.au
- Chain of Custody (CoC) (COC)	Email	sderham@golder.com.au
- EDI Format - ENMRG (ENMRG)	Email	sderham@golder.com.au
- EDI Format - EQUIS V5 Generic (EQUIS_V5)	Email	sderham@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	sderham@golder.com.au
- EDI Format - GOLDER_EXCEL (GOLDER_EXCEL)	Email	sderham@golder.com.au

THE ACCOUNTS PAYABLE (MRCHYDRE)

- A4 - AU Tax Invoice (INV)	Email	apmaroochydore@golder.com.au
-------------------------------	-------	------------------------------

APPENDIX B3:K



TEST REQUEST FORM

ALS
32 Stand Street
Stairford QLD 4053
Phone: (07) 2343-7222
Fax: (07) 3243 7218

GOLDER ASSOCIATES PTY LTD
55 Kingsford Smith Parade
Maroochydore Qld 4558
PO Box 5569 Maroochydore BC 4558
Phone: (07) 5475 5900
Fax: (07) 5475 5901

Order No.: MQ8154 TR 00000001
Project No.: 127683017 Task 2003
Project Name: SCA
C.O.C. No.: 127683017-1 Quotation No. EN-002-12
Sampled By: BS Contact Name: Stuart Derham
Email Report to: sderham@golder.com.au, bskelhorn@golder.com.au
Prior Storage: Ice

SAMPLE ID	Sample Depth (m)	Media	No. of Jars	SAMPLE DATE	S28 (TRH, BTEX, PAH, 8 metals)		S2 (8 metals)	Ammonia as N, Total Nitrogen as N	E. coli plus Faecal Coliforms	S18 (TPH, CS, CB, BTEX)	W28 (TRH, BTEX, PAH, 8 metals)	Remarks and/or Other Details
					✓	✓						
1 BH1-0	0	soil	1	2/11/2012	✓	✓						
2 BH1-0.5	0.5	soil	1	2/11/2012	✓	✓						
3 BH1-1.0	1	soil	1	2/11/2012	✓	✓						
4 BH2-0	0	soil	1	2/11/2012	✓	✓						
5 BH2-0.5	0.5	soil	1	2/11/2012	✓	✓						
6 BH2-1.0	1	soil	1	2/11/2012	✓	✓						
7 BH3-0	0	soil	1	2/11/2012	✓	✓						
8 BH3-0.5	0.5	soil	1	2/11/2012	✓	✓						
9 BH3-1.0	1	soil	1	2/11/2012	✓	✓						
10 BH4-0	0	soil	1	2/11/2012	✓	✓						
11 BH4-0.5	0.5	soil	1	2/11/2012	✓	✓						
12 BH4-1.0	1	soil	1	2/11/2012	✓	✓						
13 BH5-0	0	soil	1	2/11/2012								
14 BH5-0.5	0.5	soil	1	2/11/2012								
15 BH5-1.0	1	soil	1	2/11/2012								
16 BH6-0	0	soil	1	2/11/2012			✓	✓	✓			
17 BH6-0.5	0.5	soil	1	2/11/2012			✓	✓	✓			
18 BH6-1.0	1	soil	1	2/11/2012								
19 BH7-0	0	soil	1	2/11/2012								
20 BH7-0.5	0.5	soil	1	2/11/2012								
21 BH7-1.0	1	soil	1	2/11/2012			✓	✓				
22 BH8-0	0	soil	1	2/11/2012								
23 BH8-0.5	0.5	soil	1	2/11/2012								
24 BH8-1.0	1	soil	1	2/11/2012			✓	✓				

Environmental Division
Brisbane
Work Order
EB1228782

Telephone : +61-7-3243 7222

Relinquished by: SD Checked by: _____
Date Sent from Maroochydore Lab: 5/11/12

Please Return Signed Copy By Facsimile:
Date Received By ALS:
0700 of 05/11/12 14:55

Golder Form No. 6824 R1.2 issued July 2010



Certificate of Analysis

Golder Associates Pty Ltd
 55 Kingsford Smith Parade
 Maroochydore
 QLD 4558



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:Stuart Derham

Report **358004-S**
 Client Reference SCA 127683017 TASK 2003
 Received Date Nov 05, 2012

Client Sample ID	G01 QA2	G01 QA4
Sample Matrix	Soil	Soil
mgt-LabMark Sample No.	B12-No03177	B12-No03178
Date Sampled	Nov 02, 2012	Nov 02, 2012
Test/Reference	LOR	Unit
Total Recoverable Hydrocarbons - 1999 NEPM Fractions		
TRH C6-C9	20	mg/kg < 20
TRH C10-C14	20	mg/kg 3000
TRH C15-C28	50	mg/kg 81000
TRH C29-C36	50	mg/kg 900
TRH C10-36 (Total)	50	mg/kg 85000
BTEX		
Benzene	0.05	mg/kg < 2
Toluene	0.05	mg/kg < 2
Ethylbenzene	0.05	mg/ka < 0.05

APPENDIX B3:K



Client Sample ID			^{G01} QA2	^{G01} QA4
Sample Matrix			Soil	Soil
mgt-LabMark Sample No.			B12-No03177	B12-No03178
Date Sampled			Nov 02, 2012	Nov 02, 2012
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Total PAH	0.5	mg/kg	85	< 0.5
p-Terphenyl-d14 (surr.)	1	%	107	91
2-Fluorobiphenyl (surr.)	1	%	83	88
Organochlorine Pesticides				
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
Chlordane	0.1	mg/kg	< 0.1	< 0.1
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	114	112
Tetrachloro-m-xylene (surr.)	1	%	126	80
Organophosphorous Pesticides				
Bolstar	0.2	mg/kg	< 2	< 20
Chlorpyrifos	0.2	mg/kg	< 2	< 20
Demeton-O	0.2	mg/kg	< 2	< 20
Diazinon	0.2	mg/kg	< 2	< 20
Dichlorvos	0.2	mg/kg	< 2	< 20
Disulfoton	0.2	mg/kg	< 2	< 20
Ethion	0.2	mg/kg	< 2	< 20
Ethoprop	0.2	mg/kg	< 2	< 20
Fenitrothion	0.2	mg/kg	< 2	< 20
Fensulfothion	0.2	mg/kg	< 2	< 20
Fenthion	0.2	mg/kg	< 2	< 20
Merphos	0.2	mg/kg	< 2	< 20
Methyl azinphos	0.2	mg/kg	< 2	< 20
Methyl parathion	0.2	mg/kg	< 2	< 20
Mevinphos	0.2	mg/kg	< 2	< 20
Naled	0.5	mg/kg	< 2	< 20
Phorate	0.2	mg/kg	< 2	< 20
Ronnel	0.2	mg/kg	< 2	< 20
Tokuthion	0.2	mg/kg	< 2	< 20
Trichloronate	0.2	mg/kg	< 2	< 20
Triphenylphosphate (surr.)	1	%	int	int

APPENDIX B3:K



Client Sample ID			G01 QA2	G01 QA4
Sample Matrix			Soil	Soil
mgt-LabMark Sample No.			B12-No03177	B12-No03178
Date Sampled			Nov 02, 2012	Nov 02, 2012
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	< 2	2.8
Cadmium	0.5	mg/kg	< 0.5	0.5
Chromium	5	mg/kg	< 5	21
Copper	5	mg/kg	< 5	94
Lead	5	mg/kg	< 5	32
Mercury	0.1	mg/kg	0.8	< 0.1
Nickel	5	mg/kg	< 5	7.9
Zinc	5	mg/kg	< 5	250
% Moisture	0.1	%	7.1	9.8

APPENDIX B3:K



Sample History

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

Description	Testing Site	Extracted	Holding Time
mgt-LabMark Suite 7			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - MGT 100A	Brisbane	Nov 07, 2012	14 Day
BTEX - Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons	Brisbane	Nov 07, 2012	14 Day
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * - Method: LM-LTM-ORG2010	Brisbane	Nov 09, 2012	14 Day
Polycyclic Aromatic Hydrocarbons - Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons	Brisbane	Nov 07, 2012	14 Day
Metals M8 - Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury	Brisbane	Nov 07, 2012	28 Day
mgt-LabMark Suite 14			
Organochlorine Pesticides - Method: USEPA 8081 Organochlorine Pesticides	Melbourne	Nov 12, 2012	14 Day
Organophosphorous Pesticides - Method: USEPA 8141 Organophosphorus Pesticides	Melbourne	Nov 12, 2012	14 Day
% Moisture - Method: Method 102 - ANZECC - % Moisture	Brisbane	Nov 07, 2012	14 Day

APPENDIX B3:K

Company Name: Golder Associates Pty Ltd (Maroochydore)
Address: 55 Kingsford Smith Parade
 Maroochydore
 QLD 4558
Client Job No.: SCA 127683017 TASK 2003

Order No.: MQ8155
Report #: 358004
Phone: (07) 5475 5900
Fax: (07) 5475 5901

Received: Nov 5, 2012 1:00 PM
Due: Nov 12, 2012
Priority: 5 Day
Contact Name: Stuart Derham

mgt-LabMark Client Manager: Onur Mehmet

Sample Detail			
Sample ID	Sample Date	Sampling Time	LAB ID
A2	Nov 02, 2012	Soil	B12-No03177
A4	Nov 02, 2012	Soil	B12-No03178
Laboratory where analysis is conducted Melbourne Laboratory - NATA Site # 1254 & 14271 Sydney Laboratory - NATA Site # 18217 Brisbane Laboratory - NATA Site # 20794 Internal Laboratory			
mgt-LabMark Suite 7			
mgt-LabMark Suite 14			
% Moisture			
			X
		X	
			X



APPENDIX B3:K



mgt-LabMark Internal Quality Control Review

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 PQLs are matrix dependant. Quoted PQLs 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 Acknowledgment.

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: 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 Environment Protection Authority
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 was performed on samples not pertaining to this report, however QC is representative of the sequence or batch that client samples were analysed within

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.
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.

APPENDIX B3:K



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A						
TRH C6-C9	mg/kg	< 20		20	Pass	
TRH C10-C14	mg/kg	< 20		20	Pass	
TRH C15-C28	mg/kg	< 50		50	Pass	
TRH C29-C36	mg/kg	< 50		50	Pass	
Method Blank						
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010						
TRH C6-C10	mg/kg	< 20		20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20		20	Pass	
TRH >C10-C16	mg/kg	< 50		50	Pass	
TRH >C16-C34	mg/kg	< 100		100	Pass	
TRH >C34-C40	mg/kg	< 100		100	Pass	
Method Blank						
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons						
Acenaphthene	mg/kg	< 0.5		0.5	Pass	
Acenaphthylene	mg/kg	< 0.5		0.5	Pass	
Anthracene	mg/kg	< 0.5		0.5	Pass	
Benzo(a)anthracene	mg/kg	< 0.5		0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5		0.5	Pass	
Benzo(b)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5		0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Chrysene	mg/kg	< 0.5		0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5		0.5	Pass	
Fluoranthene	mg/kg	< 0.5		0.5	Pass	
Fluorene	mg/kg	< 0.5		0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5		0.5	Pass	
Naphthalene	mg/kg	< 0.5		0.5	Pass	
Phenanthrene	mg/kg	< 0.5		0.5	Pass	
Pyrene	mg/kg	< 0.5		0.5	Pass	
Method Blank						
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides						
4,4'-DDD	mg/kg	< 0.05		0.05	Pass	
4,4'-DDE	mg/kg	< 0.05		0.05	Pass	
4,4'-DDT	mg/kg	< 0.05		0.05	Pass	
a-BHC	mg/kg	< 0.05		0.05	Pass	
Aldrin	mg/kg	< 0.05		0.05	Pass	
b-BHC	mg/kg	< 0.05		0.05	Pass	
Chlordane	mg/kg	< 0.1		0.1	Pass	
d-BHC	mg/kg	< 0.05		0.05	Pass	
Dieldrin	mg/kg	< 0.05		0.05	Pass	
Endosulfan I	mg/kg	< 0.05		0.05	Pass	
Endosulfan II	mg/kg	< 0.05		0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05		0.05	Pass	
Endrin	mg/kg	< 0.05		0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05		0.05	Pass	
Endrin ketone	mg/kg	< 0.05		0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05		0.05	Pass	
Heptachlor	mg/kg	< 0.05		0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05		0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05		0.05	Pass	

APPENDIX B3:K



Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	mg/kg	< 0.05	0.05	Pass	
Toxaphene	mg/kg	< 0.1	0.1	Pass	
Method Blank					
Organophosphorous Pesticides USEPA 8141 Organophosphorus Pesticides					
Bolstar	mg/kg	< 0.2	0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2	0.2	Pass	
Demeton-O	mg/kg	< 0.2	0.2	Pass	
Diazinon	mg/kg	< 0.2	0.2	Pass	
Dichlorvos	mg/kg	< 0.2	0.2	Pass	
Disulfoton	mg/kg	< 0.2	0.2	Pass	
Ethion	mg/kg	< 0.2	0.2	Pass	
Ethoprop	mg/kg	< 0.2	0.2	Pass	
Fenitrothion	mg/kg	< 0.2	0.2	Pass	
Fensulfothion	mg/kg	< 0.2	0.2	Pass	
Fenthion	mg/kg	< 0.2	0.2	Pass	
Merphos	mg/kg	< 0.2	0.2	Pass	
Methyl azinphos	mg/kg	< 0.2	0.2	Pass	
Methyl parathion	mg/kg	< 0.2	0.2	Pass	
Mevinphos	mg/kg	< 0.2	0.2	Pass	
Naled	mg/kg	< 0.5	0.5	Pass	
Phorate	mg/kg	< 0.2	0.2	Pass	
Ronnel	mg/kg	< 0.2	0.2	Pass	
Tokuthion	mg/kg	< 0.2	0.2	Pass	
Trichloronate	mg/kg	< 0.2	0.2	Pass	
Method Blank					
Metals M8 USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury					
Arsenic	mg/kg	< 2	2	Pass	
Cadmium	mg/kg	< 0.5	0.5	Pass	
Chromium	mg/kg	< 5	5	Pass	
Copper	mg/kg	< 5	5	Pass	
Lead	mg/kg	< 5	5	Pass	
Mercury	mg/kg	< 0.1	0.1	Pass	
Nickel	mg/kg	< 5	5	Pass	
Zinc	mg/kg	< 5	5	Pass	
LCS - % Recovery					
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A					
TRH C6-C9	%	104	70-130	Pass	
TRH C10-C14	%	78	70-130	Pass	
LCS - % Recovery					
BTEX USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons					
Benzene	%	107	70-130	Pass	
Toluene	%	105	70-130	Pass	
Ethylbenzene	%	105	70-130	Pass	
Total m+p-Xylenes	%	107	70-130	Pass	
Xylenes(ortho.meta and para)	%	107	70-130	Pass	
LCS - % Recovery					
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions * LM-LTM-ORG2010					
TRH C6-C10	%	102	70-130	Pass	
TRH >C10-C16	%	81	70-130	Pass	
LCS - % Recovery					
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons					
Acenaphthene	%	96	70-130	Pass	
Acenaphthylene	%	93	70-130	Pass	

APPENDIX B3:K



Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
Anthracene	%	95	70-130	Pass			
Benz(a)anthracene	%	93	70-130	Pass			
Benzo(a)pyrene	%	90	70-130	Pass			
Benzo(b)fluoranthene	%	85	70-130	Pass			
Benzo(g,h,i)perylene	%	97	70-130	Pass			
Benzo(k)fluoranthene	%	85	70-130	Pass			
Chrysene	%	96	70-130	Pass			
Dibenz(a,h)anthracene	%	90	70-130	Pass			
Fluoranthene	%	94	70-130	Pass			
Fluorene	%	93	70-130	Pass			
Indeno(1,2,3-cd)pyrene	%	92	70-130	Pass			
Naphthalene	%	100	70-130	Pass			
Phenanthrene	%	92	70-130	Pass			
Pyrene	%	93	70-130	Pass			
LCS - % Recovery							
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides							
4,4'-DDD	%	116	70-130	Pass			
4,4'-DDE	%	109	70-130	Pass			
4,4'-DDT	%	115	70-130	Pass			
α-BHC	%	123	70-130	Pass			
Aldrin	%	120	70-130	Pass			
β-BHC	%	112	70-130	Pass			
δ-BHC	%	127	70-130	Pass			
Dieldrin	%	118	70-130	Pass			
Endosulfan I	%	119	70-130	Pass			
Endosulfan II	%	114	70-130	Pass			
Endosulfan sulphate	%	109	70-130	Pass			
Endrin	%	106	70-130	Pass			
Endrin aldehyde	%	108	70-130	Pass			
Endrin ketone	%	115	70-130	Pass			
γ-BHC (Lindane)	%	123	70-130	Pass			
Heptachlor	%	108	70-130	Pass			
Heptachlor epoxide	%	115	70-130	Pass			
Hexachlorobenzene	%	108	70-130	Pass			
Methoxychlor	%	113	70-130	Pass			
LCS - % Recovery							
Organophosphorous Pesticides USEPA 8141 Organophosphorous Pesticides							
Diazinon	%	123	70-130	Pass			
Ethion	%	124	70-130	Pass			
Fenitrothion	%	112	70-130	Pass			
Methyl parathion	%	117	70-130	Pass			
Mevinphos	%	94	70-130	Pass			
LCS - % Recovery							
Metals M8 USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury							
Arsenic	%	114	80-120	Pass			
Cadmium	%	112	80-120	Pass			
Chromium	%	110	80-120	Pass			
Copper	%	116	80-120	Pass			
Lead	%	113	80-120	Pass			
Mercury	%	88	70-130	Pass			
Nickel	%	111	80-120	Pass			
Zinc	%	110	80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery							

APPENDIX B3:K



Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	B12-No05228	NCP	%	103		70-130	Pass	
TRH C10-C14	B12-No01333	NCP	%	78		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	B12-No05228	NCP	%	93		70-130	Pass	
Toluene	B12-No05228	NCP	%	96		70-130	Pass	
Ethylbenzene	B12-No05228	NCP	%	95		70-130	Pass	
o-Xylene	B12-No05228	NCP	%	95		70-130	Pass	
Total m+p-Xylenes	B12-No05228	NCP	%	95		70-130	Pass	
Xylenes(ortho.meta and para)	B12-No05228	NCP	%	95		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1				
TRH C6-C10	B12-No05228	NCP	%	101		70-130	Pass	
TRH >C10-C16	B12-No01333	NCP	%	81		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B12-No05198	NCP	%	93		70-130	Pass	
Acenaphthylene	B12-No05198	NCP	%	91		70-130	Pass	
Anthracene	B12-No05198	NCP	%	94		70-130	Pass	
Benz(a)anthracene	B12-No05198	NCP	%	92		70-130	Pass	
Benzo(a)pyrene	B12-No05198	NCP	%	89		70-130	Pass	
Benzo(b)fluoranthene	B12-No05198	NCP	%	104		70-130	Pass	
Benzo(g,h,i)perylene	B12-No05198	NCP	%	86		70-130	Pass	
Benzo(k)fluoranthene	B12-No05198	NCP	%	96		70-130	Pass	
Chrysene	B12-No05198	NCP	%	98		70-130	Pass	
Dibenz(a,h)anthracene	B12-No05198	NCP	%	85		70-130	Pass	
Fluoranthene	B12-No05198	NCP	%	90		70-130	Pass	
Fluorene	B12-No05198	NCP	%	90		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B12-No05198	NCP	%	85		70-130	Pass	
Naphthalene	B12-No05198	NCP	%	98		70-130	Pass	
Phenanthrene	B12-No05198	NCP	%	88		70-130	Pass	
Pyrene	B12-No05198	NCP	%	90		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
4,4'-DDD	M12-No06834	NCP	%	101		70-130	Pass	
4,4'-DDE	M12-No06834	NCP	%	99		70-130	Pass	
4,4'-DDT	M12-No06834	NCP	%	104		70-130	Pass	
a-BHC	M12-No06834	NCP	%	119		70-130	Pass	
Aldrin	M12-No06834	NCP	%	104		70-130	Pass	
b-BHC	M12-No06834	NCP	%	104		70-130	Pass	
d-BHC	M12-No06834	NCP	%	106		70-130	Pass	
Dieldrin	M12-No06834	NCP	%	103		70-130	Pass	
Endosulfan I	M12-No06834	NCP	%	100		70-130	Pass	
Endosulfan II	M12-No06834	NCP	%	94		70-130	Pass	
Endosulfan sulphate	M12-No06834	NCP	%	95		70-130	Pass	
Endrin	M12-No06834	NCP	%	108		70-130	Pass	
Endrin aldehyde	M12-No06834	NCP	%	87		70-130	Pass	
Endrin ketone	M12-No06834	NCP	%	93		70-130	Pass	
g-BHC (Lindane)	M12-No06834	NCP	%	114		70-130	Pass	
Heptachlor	M12-No06834	NCP	%	101		70-130	Pass	
Heptachlor epoxide	M12-No06834	NCP	%	99		70-130	Pass	
Hexachlorobenzene	M12-No06834	NCP	%	103		70-130	Pass	
Methoxychlor	M12-No06834	NCP	%	97		70-130	Pass	
Spike - % Recovery								

APPENDIX B3:K



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organophosphorous Pesticides				Result 1					
Diazinon	M12-No04154	NCP	%	128			70-130	Pass	
Ethion	M12-No04154	NCP	%	125			70-130	Pass	
Fenitrothion	M12-No04154	NCP	%	128			70-130	Pass	
Methyl parathion	M12-No04154	NCP	%	129			70-130	Pass	
Mevinphos	M12-No04154	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Cadmium	B12-No02945	NCP	%	100			75-125	Pass	
Copper	B12-No02077	NCP	%	97			75-125	Pass	
Lead	B12-No02945	NCP	%	119			75-125	Pass	
Mercury	B12-No02668	NCP	%	83			70-130	Pass	
Nickel	B12-No02077	NCP	%	92			75-125	Pass	
Zinc	B12-No02945	NCP	%	74			75-125	Fail	Q13
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B12-No05228	NCP	mg/kg	< 20	< 20	7.0	30%	Pass	
TRH C10-C14	B12-No03892	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B12-No03892	NCP	mg/kg	< 50	< 50	1.0	30%	Pass	
TRH C29-C36	B12-No03892	NCP	mg/kg	120	130	5.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B12-No05228	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toluene	B12-No05228	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Ethylbenzene	B12-No05228	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
o-Xylene	B12-No05228	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Total m+p-Xylenes	B12-No05228	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes(ortho.meta and para)	B12-No05228	NCP	mg/kg	< 0.15	< 0.15	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - Draft 2010 NEPM Fractions *				Result 1	Result 2	RPD			
Naphthalene	B12-No05228	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B12-No05228	NCP	mg/kg	< 20	< 20	9.0	30%	Pass	
TRH C6-C10 less BTEX (F1)	B12-No05228	NCP	mg/kg	< 20	< 20	9.0	30%	Pass	
TRH >C10-C16	B12-No03892	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B12-No03892	NCP	mg/kg	130	130	5.0	30%	Pass	
TRH >C34-C40	B12-No03892	NCP	mg/kg	< 100	< 100	13	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b)fluoranthene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B12-No05198	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

APPENDIX B3:K



Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
4.4'-DDD	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Chlordane	M12-No06437	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
d-BHC	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M12-No06437	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M12-No06437	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Organophosphorous Pesticides				Result 1	Result 2	RPD		
Bolstar	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl azinphos	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Naled	M12-No04154	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phorate	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	M12-No04154	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Metals M8				Result 1	Result 2	RPD		
Arsenic	B12-No02945	NCP	mg/kg	19	18	3.0	30%	Pass
Cadmium	B12-No02945	NCP	mg/kg	< 0.5	< 0.5	8.0	30%	Pass
Chromium	B12-No02945	NCP	mg/kg	14	13	5.0	30%	Pass
Copper	B12-No02945	NCP	mg/kg	100	100	4.0	30%	Pass
Lead	B12-No02945	NCP	mg/kg	6.8	6.2	9.0	30%	Pass
Mercury	B12-No02668	NCP	mg/kg	0.30	0.20	18	30%	Pass
Nickel	B12-No02945	NCP	mg/kg	60	58	4.0	30%	Pass
Zinc	B12-No02945	NCP	mg/kg	110	110	6.0	30%	Pass

APPENDIX B3:K



Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatiles (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. All other QC has passed in this test batch

Authorised By

Onur Mehmet	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Richard Corner	Senior Analyst-Organic (QLD)
Richard Corner	Senior Analyst-Volatile (QLD)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical 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

mgt-LabMark 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 mgt-LabMark 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.



ABN – 50 005 085 521 e.mail : enviro@mgtlabmark.com.au web : www.mgtlabmark.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Golder Associates Pty Ltd (Maroochydore)**
Contact name: Stuart Derham
Client job number: SCA 127683017 TASK 2003
COC number: 127683017-1
Turn around time: 5 Day
Date/Time received: Nov 5, 2012 1:00 PM
mgt-LabMark reference: **358004**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- Sample Temperature of a random sample selected from the batch as recorded by mgt-LabMark Sample Receipt : 16.2 degrees Celsius.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Organic samples had Teflon liners.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Onur Mehmet on Phone : (+61) (7) 3902 4600 or by e.mail: onur.mehmet@mgtlabmark.com.au

Results will be delivered electronically via e.mail to Stuart Derham - sderham@golder.com.au.

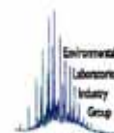
mgt-LabMark Sample Receipt



Environmental Laboratory
Air Analysis
Water Analysis
Soil Contamination Analysis

NATA Accreditation
Stack Emission Sampling & Analysis
Trade Waste Sampling & Analysis
Groundwater Sampling & Analysis

35Years of Environmental Analysis & Experience – fully Australian Owned



GOLDER ASSOCIATES PTY LTD
 55 Kingsford Smith Parade
 Maroochydore Qld 4568
 PO Box 5569 Maroochydore BC 4558
 Phone: (07) 5475 5900
 Fax: (07) 5475 5901

TEST REQUEST FORM
 MGT/Labmark Phone: (07) 3902 4600
 1/21 Smallwood Pl Fax:
 Murrumbidgee QLD 4172



Order No.: MQ8155 TR 00000001
 Project No.: 127683017 Task 2003
 Project Name: SCA
 C.O.C. No.: 127683017-1 Quotation No. Jan-12
 Sampled By: BS Contact Name: Stuart Derham
 Email Report to: sderham@golder.com.au, bskelhorn@golder.com.au
 Prior Storage: Ice

SAMPLE ID	Sample Depth (m)	Media	No. of Jars	SAMPLE DATE	Analytes		Remarks and or Other Details
					B7 (TRH, BTEX, PAH, 8 metals)	B14 (OCP/OPP)	
QA2	-	soil	1	2/11/2012	✓		
QA4	-	soil	1	2/11/2012	✓		

Relinquished by: SND Checked by: _____
 Date Sent from Maroochydore Lab: 5/11/12
 Date Received By MGT: _____

Golder Form No. 68004 R12 Issued July 2010
Myles Clagh 5/11/12
m-a Clagh 358004