ALS Environmental

Analytical Results

			Client Sample ID :	DUP20	BHF/3.6	BHF/1.0	BH12A/4.2	TRIP SPIKE 1
			Sample Matrix Type / Description :	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Date / Time :	16 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00
			Laboratory Sample ID :	ES0612955-011	ES0612955-012	ES0612955-013	ES0612955-014	ES0612955-015
Analyte	CAS number	LOR	Units					
EP080/071: Total Petroleum Hydrocarbons								
C29 - C36 Fraction		100	mg/kg	<100	<100	320	810	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	20.0	0.5
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	<0.2	53.0	8.4
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	<0.2	8.3	1.4
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	<0.2	68.7	6.9
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	<0.2	26.2	2.9
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	126	118	116	110	----
2-Chlorophenol-D4	93951-73-6	0.1	%	130	122	120	114	----
2.4.6-Tribromophenol	118-79-6	0.1	%	78.2	63.2	87.4	109	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	110	108	110	104	----
Anthracene-d10	1719-06-8	0.1	%	110	110	109	102	----
4-Terphenyl-d14	1718-51-0	0.1	%	118	115	112	104	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	103	102	105	90.2	88.4
Toluene-D8	2037-26-5	0.1	%	104	102	102	89.2	103
4-Bromofluorobenzene	460-00-4	0.1	%	99.9	97.9	102	98.8	102

ALS Environmental

Analytical Results

			Client Sample ID :	TRIP BLANK 1	TRIP SPIKE CONTROL			
			Sample Matrix Type / Description :	SOIL	SOIL			
			Sample Date / Time :	17 Oct 2006 15:00	16 Oct 2006 15:00			
			Laboratory Sample ID :					
Analyte	CAS number	LOR	Units	ES0612955-016	ES0612955-017			
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	3.7	2.0			
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction		2	mg/kg	<2	27			
C10 - C14 Fraction		50	mg/kg	<50	<50			
C15 - C28 Fraction		100	mg/kg	<100	<100			
C29 - C36 Fraction		100	mg/kg	<100	<100			
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	0.7			
Toluene	108-88-3	0.2	mg/kg	<0.2	10.4			
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	1.6			
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	8.3			
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	2.7			
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	106	86.0			
Toluene-D8	2037-26-5	0.1	%	96.1	98.2			
4-Bromofluorobenzene	460-00-4	0.1	%	90.2	96.0			

ALS Environmental

Surrogate Control Limits

Matrix Type: SOIL - Surrogate Control Limits ***Surrogate Control Limits***

Method name	*Analyte name*	*Lower Limit*	*Upper Limit*
EP075(SIM): PAH/Phenols (SIM)			
EP075(SIM)S: Phenolic Compound Surrogates	Phenol-d6	24	113
	2-Chlorophenol-D4	23	134
	2,4,6-Tribromophenol	19	122
EP075(SIM)T: PAH Surrogates	2-Fluorobiphenyl	30	115
	Anthracene-d10	27	133
	4-Terphenyl-d14	18	137
EP080: TPH Volatiles/BTEX			
EP080S: TPH(V)/BTEX Surrogates	1,2-Dichloroethane-D4	80	120
	Toluene-D8	81	117
	4-Bromofluorobenzene	74	121

Laboratory Quotation #

(1/2)

CH2MHILL ACN 050 070 892

CHAIN OF CUSTODY RECORD

Level 7, 9 Help Street, Chatswood, NSW 2067 Australia Tel (61 2) 9950 0200 Fax (61 2) 9950 0600

COC # [redacted]

Project # 347496	Purchase Order # SY/148/06
Project Name: Macdonaldtown Gasworks	
Company Name: ALS	
Project Manager or Contact & Phone #: Adam Sullivan 0400 500 264	Report Copy to: →
Requested Completion Date: standard TAT	Site ID: Macdonaldtown
Sample Disposal: Dispose ☑ Return ☐	

Sampling Date	Sampling Time	Type	Matrix	CLIENT SAMPLE ID (9 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	S-7	Phenols	EK026	S-4	HOLD				
						Preservative									
16/10			SOIL	① BHA/5.0			X	X							
				② BHA/7.0			X	X							
				18 BHA/8.4							X				
				19 BHA/9.6							X				
				③ BHA/10.2			X	X							
				④ BHA1/7.0			X	X							
				20 BHA1/9.6							X				
				⑤ BHA1/10.2			X	X							
				⑥ BHA2/7.0			X	X							
				⑦ BHA2/10.2			X	X							
17/10				⑧ BHB/6.0			X	X							
17/10				21 BHE/1.6							X				

Requested Analytical Method #

QA REQUIREMENTS

Matrix Spike	☐ Yes	☐ No
Matrix Duplicate	☐ Yes	☐ No
Laboratory Duplicate	☐ Yes	☐ No
Lab Blank	☐ Yes	☐ No
Surrogate Spike	☐ Yes	☐ No
RPDs	☐ Yes	☐ No
Spike Recovery Data	☐ Yes	☐ No

LAB USE ONLY

Custody Seals	☐ Yes	☐ No
ICE	☐ Yes	☐ No

Comments	Lab ID

ALS Environmental
Sydney
Work Order
ES0612955
Telephone : +61 (02) 8784 8555

Sampled By and Title: ASull & K Scott	(Please sign and print name) KScott	Date/Time 17/10/06 13:30	Relinquished By: KATIE SCOTT (Please sign and print name) KScott	Date/Time 17/10/06 13:30
Received by: [illegible]	(Please sign and print name)	Date/Time 17/10/6 4:20pm	Relinquished By	(Please sign and print name)	Date/Time
Received by	(Please sign and print name)	Date/Time	Shipped Via	Shipping #

Special Instructions:

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - CH2MHILL

Laboratory Quotation #

2/2

CH2MHILL ACN 050 070 892

CHAIN OF CUSTODY RECORD

Level 7, 9 Help Street, Chatswood, NSW 2067 Australia Tel (61 2) 9950 0200 Fax (61 2) 9950 0600

COC # [redacted]

Project # 3447496	Purchase Order # SY/148/06
Project Name: Macdonaldtown Gasworks	
Company Name: ALS	
Project Manager or Contact & Phone #: Adam Sullivan 0400 500 264	Report Copy to: →
Requested Completion Date: Standard TAT	Site ID: Macdonaldtown
Sample Disposal: Dispose ☑ Return ☐	

Sampling Date	Sampling Time	Type	Matrix (SOIL)	CLIENT SAMPLE ID (9 CHARACTERS)	LAB QC	TOTAL # OF CONTAINERS	S-7	Phenols	EK026	S-4	HOLD				
							Preservative								
17/10				(9) BHE/2-2			X	X	X						
17/10				(10) BHE/3-5			X	X	X						
16/10				(11) DUP 2 0			X	X							
17/10				22 (12) BHF/2-6							X				
17/10				(12) BHF/3-6			X	X	X						
17/10				(13) BHF/1-0			X	X	X						
17/10				(14) BH12A/4-2			X	X	X						
17/10				(15) TRIPSPIKE 1						X					
17/10				(16) TRIPBLANK 1						X					
				(17) TRIP SPIKE (control)											

QA REQUIREMENTS		
Matrix Spike	☐ Yes	☐ No
Matrix Duplicate	☐ Yes	☐ No
Laboratory Duplicate	☐ Yes	☐ No
Lab Blank	☐ Yes	☐ No
Surrogate Spike	☐ Yes	☐ No
RPDs	☐ Yes	☐ No
Spike Recovery Data	☐ Yes	☐ No

LAB USE ONLY		
Custody Seals	☐ Yes	☐ No
ICE	☐ Yes	☐ No

Comments	Lab ID

Sampled By and Title: A.S Project Supervisor & K.S. (Please sign and print name)	Date/Time 17/10/06 13:30	Relinquished By: KATIE SCOTT (Please sign and print name)	Date/Time 17/10/06 13:30
Received by: (Please sign and print name) ALS. 4:20pm	Date/Time 17/10/6	Relinquished By: (Please sign and print name)	Date/Time
Received by: (Please sign and print name)	Date/Time	Shipped Via	Shipping #

Special Instructions:

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - CH2MHILL

ALS Environmental

QUALITY CONTROL REPORT

Client	:	**CH2M HILL PTY LTD**	**Laboratory**	: ALS Environmental Sydney	**Page**	:	**1 of 18**
Contact	:	MR ADAM SULLIVAN	**Contact**	: Greg Vogel			
Address	:	PO BOX 5392 CHATSWOOD NSW AUSTRALIA 1515	**Address**	: 277-289 Woodpark Road Smithfield NSW Australia 2164	**Work order**	:	**ES0612955**
					Amendment No.	:	**1**
Project	:	347496 MACDONALDTOWN GASWORKS	**Quote number**	: ----	**Date received**	:	17 Oct 2006
Order number	:	- Not provided -			**Date issued**	:	25 Oct 2006
C-O-C number	:	- Not provided -					
Site	:	- Not provided -					
E-mail	:	adam.sullivan@ch2m.com.au	**E-mail**	: Greg.Vogel@alsenviro.com	**No. of samples**		
Telephone	:	02 9950 0200	**Telephone**	: +61 (02) 8784 8555	**Received**	:	22
Facsimile	:	02 9950 0600	**Facsimile**	: +61 (02) 8784 8500	**Analysed**	:	17

This final report for the ALSE work order reference ES0612955 supersedes any previous reports with this reference.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- Laboratory Duplicates (DUP); Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Samples (LCS); Recovery and Acceptance Limits
- Matrix Spikes (MS); Recovery and Acceptance Limits

Work order specific comments

The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.

ALSE - Excellence in Analytical Testing

NATA Accredited Laboratory - 825

This document is issued in accordance with NATA's accreditation requirements.

Accredited for compliance with ISO/IED 17025

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	Department
PHALAK INTHAKESONE	Organics - NATA 825 (10911 - Sydney)
Sarah Millington	Inorganics - NATA 825 (10911 - Sydney)

Quality Control Report - Laboratory Duplicates (DUP)

The quality control term **Laboratory Duplicate** refers to an intralaboratory split sample randomly selected from the sample batch. Laboratory duplicates provide information on method precision and sample heterogeneity.
- Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** = *Limit of Reporting,* ***RPD*** = *Relative Percent Difference.*
* Indicates failed QC. The permitted ranges for the RPD of Laboratory Duplicates (relative percent deviation) 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%

Matrix Type: SOIL ***Laboratory Duplicates (DUP) Report***

Laboratory Sample ID	*Client Sample ID*	*Analyte name*	*LOR*	*Original Result*	*Duplicate Result*	*RPD*
EA055: Moisture Content						
EA055: Moisture Content - (QC Lot: 291984)				**%**	**%**	**%**
ES0612944-020	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	19.7	19.7	0.0
ES0612944-029	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	17.7	18.2	2.3
EA055: Moisture Content - (QC Lot: 291985)				**%**	**%**	**%**
ES0612955-002	BHA/7.0	Moisture Content (dried @ 103°C)	1.0 %	19.8	19.2	3.0
ES0612970-004	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	5.5	5.5	0.0
EA055: Moisture Content - (QC Lot: 292337)				**%**	**%**	**%**
ES0612955-008	BHB/6.0	Moisture Content (dried @ 103°C)	1.0 %	21.7	20.1	7.9
ES0612959-002	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	23.1	23.7	2.3
EA055: Moisture Content - (QC Lot: 293037)				**%**	**%**	**%**
ES0612955-011	DUP20	Moisture Content (dried @ 103°C)	1.0 %	19.5	17.7	9.7
ES0612957-008	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	12.0	11.3	5.9
EK026G: Total Cyanide By Discrete Analyser						
EK026G: Total Cyanide By Discrete Analyser - (QC Lot: 292318)				**mg/kg**	**mg/kg**	**%**
ES0612955-009	BHE/2.2	Total Cyanide	1.0 mg/kg	<1.0	<1.0	0.0
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292440)				**mg/kg**	**mg/kg**	**%**
ES0612955-001	BHA/5.0	Phenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		3- & 4-Methylphenol	1.0 mg/kg	<1.0	<1.0	0.0
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP075(SIM)A: Phenolic Compounds - continued						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292440) - continued				mg/kg	mg/kg	%
ES0612955-001	BHA/5.0	2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
ES0612996-001	Anonymous	Phenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		3- & 4-Methylphenol	1.0 mg/kg	<1.0	<1.0	0.0
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292541)				mg/kg	mg/kg	%
ES0612955-004	BHA1/7.0	Phenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		3- & 4-Methylphenol	1.0 mg/kg	<1.0	<1.0	0.0
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
ES0612955-014	BH12A/4.2	Phenol	0.5 mg/kg	6.9	6.4	8.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP075(SIM)A: Phenolic Compounds - continued						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292541) - continued				mg/kg	mg/kg	%
ES0612955-014	BH12A/4.2	2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	8.1	7.1	12.7
		3- & 4-Methylphenol	1.0 mg/kg	12.7	11.2	12.5
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	16.2	14.0	14.9
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292440)				mg/kg	mg/kg	%
ES0612955-001	BHA/5.0	Naphthalene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluorene	0.5 mg/kg	<0.5	<0.5	0.0
		Phenanthrene	0.5 mg/kg	<0.5	<0.5	0.0
		Anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Chrysene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(b)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(k)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(g,h,i)perylene	0.5 mg/kg	<0.5	<0.5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292440) - continued				mg/kg	mg/kg	%
ES0612996-001	Anonymous	Naphthalene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluorene	0.5 mg/kg	<0.5	<0.5	0.0
		Phenanthrene	0.5 mg/kg	<0.5	<0.5	0.0
		Anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Chrysene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(b)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(k)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(g,h,i)perylene	0.5 mg/kg	<0.5	<0.5	0.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292541)				mg/kg	mg/kg	%
ES0612955-004	BHA1/7.0	Naphthalene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluorene	0.5 mg/kg	<0.5	<0.5	0.0
		Phenanthrene	0.5 mg/kg	<0.5	<0.5	0.0
		Anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Chrysene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(b)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(k)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292541) - continued				mg/kg	mg/kg	%
ES0612955-004	BHA1/7.0	Benzo(a)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(g,h,i)perylene	0.5 mg/kg	<0.5	<0.5	0.0
ES0612955-014	BH12A/4.2	Naphthalene	0.5 mg/kg	166	139	17.7
		Acenaphthylene	0.5 mg/kg	12.1	10.4	15.3
		Acenaphthene	0.5 mg/kg	8.1	6.8	18.1
		Fluorene	0.5 mg/kg	42.3	35.6	17.3
		Phenanthrene	0.5 mg/kg	78.6	67.0	16.0
		Anthracene	0.5 mg/kg	32.2	27.2	16.9
		Fluoranthene	0.5 mg/kg	49.8	42.6	15.6
		Pyrene	0.5 mg/kg	38.8	33.2	15.6
		Benz(a)anthracene	0.5 mg/kg	22.5	19.0	17.0
		Chrysene	0.5 mg/kg	16.5	13.2	22.3
		Benzo(b)fluoranthene	0.5 mg/kg	13.9	11.8	17.0
		Benzo(k)fluoranthene	0.5 mg/kg	9.4	7.9	17.3
		Benzo(a)pyrene	0.5 mg/kg	13.9	11.6	17.3
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	4.9	4.1	18.5
		Dibenz(a,h)anthracene	0.5 mg/kg	1.6	1.4	7.3
		Benzo(g,h,i)perylene	0.5 mg/kg	5.0	4.1	18.2
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 291820)				mg/kg	mg/kg	%
ES0612895-041	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0
ES0612944-005	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292069)				mg/kg	mg/kg	%
ES0612957-012	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0
ES0612971-030	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292200)				mg/kg	mg/kg	%
ES0612990-008	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP080/071: Total Petroleum Hydrocarbons - continued						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292200) - continued				mg/kg	mg/kg	%
ES0612996-001	Anonymous	C6 - C9 Fraction	2 mg/kg	<2	<2	0.0
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292441)				mg/kg	mg/kg	%
ES0612955-001	BHA/5.0	C10 - C14 Fraction	50 mg/kg	<50	<50	0.0
		C15 - C28 Fraction	100 mg/kg	<100	<100	0.0
		C29 - C36 Fraction	100 mg/kg	<100	<100	0.0
ES0612996-001	Anonymous	C10 - C14 Fraction	50 mg/kg	<50	<50	0.0
		C15 - C28 Fraction	100 mg/kg	<100	<100	0.0
		C29 - C36 Fraction	100 mg/kg	<100	<100	0.0
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292540)				mg/kg	mg/kg	%
ES0612955-004	BHA1/7.0	C10 - C14 Fraction	50 mg/kg	<50	<50	0.0
		C15 - C28 Fraction	100 mg/kg	<100	<100	0.0
		C29 - C36 Fraction	100 mg/kg	<100	<100	0.0
ES0612955-014	BH12A/4.2	C10 - C14 Fraction	50 mg/kg	1190	1050	12.5
		C15 - C28 Fraction	100 mg/kg	3350	2750	19.8
		C29 - C36 Fraction	100 mg/kg	810	840	3.4
EP080: BTEX						
EP080: BTEX - (QC Lot: 291820)				mg/kg	mg/kg	%
ES0612895-041	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0
		Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
ES0612944-005	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0
		Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
EP080: BTEX - (QC Lot: 292069)				mg/kg	mg/kg	%
ES0612957-012	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP080: BTEX - continued						
EP080: BTEX - (QC Lot: 292069) - continued				**mg/kg**	**mg/kg**	**%**
ES0612957-012	Anonymous	Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
ES0612971-030	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0
		Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
EP080: BTEX - (QC Lot: 292200)				**mg/kg**	**mg/kg**	**%**
ES0612990-008	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0
		Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
ES0612996-001	Anonymous	Benzene	0.2 mg/kg	<0.2	<0.2	0.0
		Toluene	0.2 mg/kg	<0.2	<0.2	0.0
		Ethylbenzene	0.2 mg/kg	<0.2	<0.2	0.0
		meta- & para-Xylene	0.2 mg/kg	<0.2	<0.2	0.0
		ortho-Xylene	0.2 mg/kg	<0.2	<0.2	0.0

Quality Control Report - Method Blank (MB) and Laboratory Control Samples (LCS)

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 type is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a known, interference free matrix spiked with target analytes or certified reference material. The purpose of this QC type is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of actual laboratory data. Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. Abbreviations: LOR = Limit of reporting.

Matrix Type: SOIL

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

		Method blank result	Actual Results		Recovery Limits	
			Spike concentration	Spike Recovery	Dynamic Recovery Limits	
Analyte name	LOR			LCS	Low	High
EK026G: Total Cyanide By Discrete Analyser						
EK026G: Total Cyanide By Discrete Analyser - (QC Lot: 292318)		mg/kg	mg/kg	%	%	%
Total Cyanide	1.0 mg/kg	<1.0	----	----	----	----
	1 mg/kg	----	50	104	70	130
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292440)		mg/kg	mg/kg	%	%	%
2,4,5-Trichlorophenol	0.5 mg/kg	----	4	72.4	68.9	112
	0.5 mg/kg	<0.5	----	----	----	----
2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	72.3	62.2	115
2,4-Dichlorophenol	0.5 mg/kg	----	4	86.4	71.6	113
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	90.2	74.5	119
2,6-Dichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	86.5	74.8	115
2-Chlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	87.2	80.2	115
2-Methylphenol	0.5 mg/kg	----	4	85.3	76.8	114
	0.5 mg/kg	<0.5	----	----	----	----
2-Nitrophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	83.8	60.3	117
3- & 4-Methylphenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	8	87.4	72	119
4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	86.5	76.4	114

Matrix Type: SOIL

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

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)A: Phenolic Compounds - continued						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292440) - continued		mg/kg	mg/kg	%	%	%
Pentachlorophenol	1.0 mg/kg	----	8	26.7	1.23	91.6
	1.0 mg/kg	<1.0	----	----	----	----
Phenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	85.3	73.9	115
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292541)		mg/kg	mg/kg	%	%	%
2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	92.0	68.9	112
2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	83.5	62.2	115
2,4-Dichlorophenol	0.5 mg/kg	----	4	90.5	71.6	113
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	94.3	74.5	119
2,6-Dichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	93.2	74.8	115
2-Chlorophenol	0.5 mg/kg	----	4	98.9	80.2	115
	0.5 mg/kg	<0.5	----	----	----	----
2-Methylphenol	0.5 mg/kg	----	4	97.8	76.8	114
	0.5 mg/kg	<0.5	----	----	----	----
2-Nitrophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	82.3	60.3	117
3- & 4-Methylphenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	8	96.4	72	119
4-Chloro-3-Methylphenol	0.5 mg/kg	----	4	87.0	76.4	114
	0.5 mg/kg	<0.5	----	----	----	----
Pentachlorophenol	1.0 mg/kg	----	8	22.2	1.23	91.6
	1.0 mg/kg	<1.0	----	----	----	----
Phenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	99.2	73.9	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						

Matrix Type: SOIL

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

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292440)		mg/kg	mg/kg	%	%	%
Acenaphthene	0.5 mg/kg	----	4	98.0	81.5	112
	0.5 mg/kg	<0.5	----	----	----	----
Acenaphthylene	0.5 mg/kg	----	4	101	79.6	113
	0.5 mg/kg	<0.5	----	----	----	----
Anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	100	81.1	112
Benz(a)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	96.5	77.2	112
Benzo(a)pyrene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	99.2	76.4	113
Benzo(b)fluoranthene	0.5 mg/kg	----	4	107	71.8	118
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	0.5 mg/kg	----	4	97.8	72.4	114
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	90.0	74.2	117
Chrysene	0.5 mg/kg	----	4	97.5	79.8	114
	0.5 mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	96.0	71.7	113
Fluoranthene	0.5 mg/kg	----	4	100	78.8	113
	0.5 mg/kg	<0.5	----	----	----	----
Fluorene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	99.2	79.9	112
Indeno(1,2,3,cd)pyrene	0.5 mg/kg	----	4	99.1	71	113
	0.5 mg/kg	<0.5	----	----	----	----
Naphthalene	0.5 mg/kg	----	4	100	81.9	113
	0.5 mg/kg	<0.5	----	----	----	----
Phenanthrene	0.5 mg/kg	----	4	101	79.4	114
	0.5 mg/kg	<0.5	----	----	----	----

Matrix Type: SOIL

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

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292440) - continued		mg/kg	mg/kg	%	%	%
Pyrene	0.5 mg/kg	----	4	99.7	78.9	113
	0.5 mg/kg	<0.5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292541)		mg/kg	mg/kg	%	%	%
Acenaphthene	0.5 mg/kg	----	4	105	81.5	112
	0.5 mg/kg	<0.5	----	----	----	----
Acenaphthylene	0.5 mg/kg	----	4	105	79.6	113
	0.5 mg/kg	<0.5	----	----	----	----
Anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	104	81.1	112
Benz(a)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	104	77.2	112
Benzo(a)pyrene	0.5 mg/kg	----	4	103	76.4	113
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	0.5 mg/kg	----	4	101	71.8	118
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	0.5 mg/kg	----	4	103	72.4	114
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	0.5 mg/kg	----	4	109	74.2	117
	0.5 mg/kg	<0.5	----	----	----	----
Chrysene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	109	79.8	114
Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	103	71.7	113
Fluoranthene	0.5 mg/kg	----	4	104	78.8	113
	0.5 mg/kg	<0.5	----	----	----	----
Fluorene	0.5 mg/kg	----	4	104	79.9	112
	0.5 mg/kg	<0.5	----	----	----	----
Indeno(1,2,3,cd)pyrene	0.5 mg/kg	----	4	102	71	113
	0.5 mg/kg	<0.5	----	----	----	----

Matrix Type: SOIL

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

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292541) - continued		mg/kg	mg/kg	%	%	%
Naphthalene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	107	81.9	113
Phenanthrene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	104	79.4	114
Pyrene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	4	97.6	78.9	113
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 291820)		mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	2 mg/kg	<2	----	----	----	----
	2 mg/kg	----	26	94.8	68.4	128
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292069)		mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	2 mg/kg	<2	----	----	----	----
	2 mg/kg	----	26	110	68.4	128
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292200)		mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	2 mg/kg	<2	----	----	----	----
	2 mg/kg	----	26	100	68.4	128
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292441)		mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	50 mg/kg	<50	----	----	----	----
	50 mg/kg	----	200	100	75.2	116
C15 - C28 Fraction	100 mg/kg	<100	----	----	----	----
	100 mg/kg	----	200	86.9	75.3	113
C29 - C36 Fraction	100 mg/kg	----	200	100	72.6	117
	100 mg/kg	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292540)		mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	50 mg/kg	<50	----	----	----	----
	50 mg/kg	----	200	99.4	75.2	116
C15 - C28 Fraction	100 mg/kg	<100	----	----	----	----
	100 mg/kg	----	200	92.7	75.3	113

Matrix Type: SOIL

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

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP080/071: Total Petroleum Hydrocarbons - continued						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292540) - continued		mg/kg	mg/kg	%	%	%
C29 - C36 Fraction	100 mg/kg	----	200	107	72.6	117
	100 mg/kg	<100	----	----	----	----
EP080: BTEX						
EP080: BTEX - (QC Lot: 291820)		mg/kg	mg/kg	%	%	%
Benzene	0.2 mg/kg	----	1	80.5	67.5	125
	0.2 mg/kg	<0.2	----	----	----	----
Ethylbenzene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	1	87.6	65.3	126
meta- & para-Xylene	0.2 mg/kg	----	2	87.4	66.5	124
	0.2 mg/kg	<0.2	----	----	----	----
ortho-Xylene	0.2 mg/kg	----	1	89.0	66.7	123
	0.2 mg/kg	<0.2	----	----	----	----
Toluene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	1	78.2	69	122
EP080: BTEX - (QC Lot: 292069)		mg/kg	mg/kg	%	%	%
Benzene	0.2 mg/kg	----	1	91.9	67.5	125
	0.2 mg/kg	<0.2	----	----	----	----
Ethylbenzene	0.2 mg/kg	----	1	92.0	65.3	126
	0.2 mg/kg	<0.2	----	----	----	----
meta- & para-Xylene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	2	94.9	66.5	124
ortho-Xylene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	1	93.6	66.7	123
Toluene	0.2 mg/kg	----	1	92.1	69	122
	0.2 mg/kg	<0.2	----	----	----	----
EP080: BTEX - (QC Lot: 292200)		mg/kg	mg/kg	%	%	%
Benzene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	1	87.1	67.5	125

Matrix Type: SOIL

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

Analyte name	*LOR*	*Method blank result*	*Actual Results*		*Recovery Limits*	
			Spike concentration	*Spike Recovery*	*Dynamic Recovery Limits*	
				LCS	*Low*	*High*
EP080: BTEX - continued						
EP080: BTEX - (QC Lot: 292200) - continued		mg/kg	mg/kg	%	%	%
Ethylbenzene	0.2 mg/kg	----	1	92.6	65.3	126
	0.2 mg/kg	<0.2	----	----	----	----
meta- & para-Xylene	0.2 mg/kg	----	2	91.8	66.5	124
	0.2 mg/kg	<0.2	----	----	----	----
ortho-Xylene	0.2 mg/kg	<0.2	----	----	----	----
	0.2 mg/kg	----	1	91.9	66.7	123
Toluene	0.2 mg/kg	----	1	83.9	69	122
	0.2 mg/kg	<0.2	----	----	----	----

ALS Environmental

Quality Control Report - Matrix Spikes (MS)

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 type is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQO's). 'Ideal' recovery ranges stated may be waived in the event of sample matrix interferences. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** *= Limit of Reporting,* ***RPD*** *= Relative Percent Difference.*

* Indicates failed QC

Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
Analyte name	*Laboratory Sample ID*	*Client Sample ID*	*LOR*	*Spike Concentration*		*MS*	*Low*	*High*
EK026G: Total Cyanide By Discrete Analyser								
EK026G: Total Cyanide By Discrete Analyser - (QC Lot: 292318)				mg/kg	mg/kg	%	%	%
Total Cyanide	ES0612955-009	BHE/2.2	1 mg/kg	50	<1.0	101	70	130
EP075(SIM)A: Phenolic Compounds								
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292440)				mg/kg	mg/kg	%	%	%
Phenol	ES0612941-001	Anonymous	0.5 mg/kg	10	<0.5	74.9	70	130
2-Chlorophenol			0.5 mg/kg	10	<0.5	74.8	70	130
2-Nitrophenol			0.5 mg/kg	10	<0.5	78.8	60	130
4-Chloro-3-Methylphenol			0.5 mg/kg	10	<0.5	75.8	70	130
Pentachlorophenol			2.0 mg/kg	10	<2.0	67.5	20	130
EP075(SIM)A: Phenolic Compounds - (QC Lot: 292541)				mg/kg	mg/kg	%	%	%
Phenol	ES0612955-004	BHA1/7.0	0.5 mg/kg	10	<0.5	98.8	70	130
2-Chlorophenol			0.5 mg/kg	10	<0.5	90.3	70	130
2-Nitrophenol			0.5 mg/kg	10	<0.5	89.1	60	130
4-Chloro-3-Methylphenol			0.5 mg/kg	10	<0.5	85.2	70	130
Pentachlorophenol			2.0 mg/kg	10	<2.0	98.2	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292440)				mg/kg	mg/kg	%	%	%
Acenaphthene	ES0612941-001	Anonymous	0.5 mg/kg	10	<0.5	80.1	70	130
Pyrene			0.5 mg/kg	10	<0.5	82.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 292541)				mg/kg	mg/kg	%	%	%
Acenaphthene	ES0612955-004	BHA1/7.0	0.5 mg/kg	10	<0.5	98.8	70	130
Pyrene			0.5 mg/kg	10	<0.5	95.4	70	130
EP080/071: Total Petroleum Hydrocarbons								
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 291820)				mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	ES0612895-041	Anonymous	2 mg/kg	26	<2	88.2	70	130

Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
Analyte name	Laboratory Sample ID	Client Sample ID	LOR	Spike Concentration		MS	Low	High
EP080/071: Total Petroleum Hydrocarbons - continued								
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292069)				mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	ES0612971-030	Anonymous	2 mg/kg	26	<2	106	70	130
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292200)				mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	ES0612990-008	Anonymous	2 mg/kg	26	<2	106	70	130
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292441)				mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	ES0612941-001	Anonymous	50 mg/kg	700	<50	73.0	70	130
C15 - C28 Fraction			100 mg/kg	3400	<100	98.4	70	130
C29 - C36 Fraction			100 mg/kg	3600	<100	95.2	70	130
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 292540)				mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	ES0612955-004	BHA1/7.0	50 mg/kg	700	<50	90.4	70	130
C15 - C28 Fraction			100 mg/kg	3400	<100	114	70	130
C29 - C36 Fraction			100 mg/kg	3600	<100	87.8	70	130
EP080: BTEX								
EP080: BTEX - (QC Lot: 291820)				mg/kg	mg/kg	%	%	%
Benzene	ES0612895-041	Anonymous	0.2 mg/kg	2.5	<0.2	76.4	70	130
Toluene			0.2 mg/kg	2.5	<0.2	72.4	70	130
Ethylbenzene			0.2 mg/kg	2.5	<0.2	76.1	70	130
meta- & para-Xylene			0.2 mg/kg	2.5	<0.2	76.7	70	130
ortho-Xylene			0.2 mg/kg	2.5	<0.2	79.5	70	130
EP080: BTEX - (QC Lot: 292069)				mg/kg	mg/kg	%	%	%
Benzene	ES0612971-030	Anonymous	0.2 mg/kg	2.5	<0.2	77.5	70	130
Toluene			0.2 mg/kg	2.5	<0.2	70.8	70	130
Ethylbenzene			0.2 mg/kg	2.5	<0.2	85.7	70	130
meta- & para-Xylene			0.2 mg/kg	2.5	<0.2	85.2	70	130
ortho-Xylene			0.2 mg/kg	2.5	<0.2	84.1	70	130
EP080: BTEX - (QC Lot: 292200)				mg/kg	mg/kg	%	%	%
Benzene	ES0612990-008	Anonymous	0.2 mg/kg	2.5	<0.2	91.5	70	130
Toluene			0.2 mg/kg	2.5	<0.2	79.3	70	130
Ethylbenzene			0.2 mg/kg	2.5	<0.2	93.0	70	130

Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
Analyte name	*Laboratory Sample ID*	*Client Sample ID*	*LOR*	*Spike Concentration*		*MS*	*Low*	*High*
EP080: BTEX - continued								
EP080: BTEX - (QC Lot: 292200) - continued				mg/kg	mg/kg	%	%	%
meta- & para-Xylene	ES0612990-008	Anonymous	0.2 mg/kg	2.5	<0.2	91.6	70	130
ortho-Xylene			0.2 mg/kg	2.5	<0.2	89.1	70	130

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Client	:	**CH2M HILL PTY LTD**	**Laboratory**	:	ALS Environmental Sydney	**Page**	:	**1 of 6**
Contact	:	MR ADAM SULLIVAN	**Contact**	:	Greg Vogel			
Address	:	PO BOX 5392 CHATSWOOD NSW AUSTRALIA 1515	**Address**	:	Smithfield NSW Australia 2164	**Work order**	:	**ES0612955**
						Amendment No.	:	**1**
Project	:	347496 MACDONALDTOWN GASWORKS	**Quote number**	:	----	**Date received**	:	17 Oct 2006
Order number	:	- Not provided -				**Date issued**	:	25 Oct 2006
C-O-C number	:	- Not provided -						
Site	:	- Not provided -						
E-mail	:	adam.sullivan@ch2m.com.au	**E-mail**	:	Greg.Vogel@alsenviro.com	**No. of samples**		
Telephone	:	02 9950 0200	**Telephone**	:	+61 (02) 8784 8555	**Received**	:	22
Facsimile	:	02 9950 0600	**Facsimile**	:	+61 (02) 8784 8500	**Analysed**	:	17

This Interpretive Quality Control Report was issued on 25 Oct 2006 for the ALS work order reference ES0612955 and supersedes any previous reports with this reference.
This report contains the following information:

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

Interpretive Quality Control Report - Analysis Holding Time

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 preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: SOIL ***Analysis Holding Time and Preservation***

Method / **Container /** Client Sample ID(s)		**Date Sampled**	**Extraction / Preparation**			**Analysis**		
			Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content								
Soil Glass Jar - Unpreserved								
BHA/5.0,	BHA/7.0,	**16 Oct 2006**	----	----	----	**18 Oct 2006**	23 Oct 2006	Pass
BHA/10.2,	BHA1/7.0,							
BHA1/10.2,	BHA2/7.0,							
BHA2/10.2								
Soil Glass Jar - Unpreserved								
DUP20,	TRIP SPIKE CONTROL	**16 Oct 2006**	----	----	----	**20 Oct 2006**	23 Oct 2006	Pass
Soil Glass Jar - Unpreserved								
BHB/6.0,	BHE/2.2,	**17 Oct 2006**	----	----	----	**19 Oct 2006**	24 Oct 2006	Pass
BHE/3.5,	BHF/3.6,							
BHF/1.0,	BH12A/4.2,							
TRIP SPIKE 1,	TRIP BLANK 1							
EK026G: Total Cyanide By Discrete Analyser								
Soil Glass Jar - Unpreserved								
BHE/2.2,	BHE/3.5,	**17 Oct 2006**	**19 Oct 2006**	24 Oct 2006	Pass	**19 Oct 2006**	2 Nov 2006	Pass
BHF/3.6,	BHF/1.0,							
BH12A/4.2								
EP071: TPH - Semivolatile Fraction								
Soil Glass Jar - Unpreserved								
BHA/5.0,	BHA/7.0,	**16 Oct 2006**	**19 Oct 2006**	30 Oct 2006	Pass	**20 Oct 2006**	28 Nov 2006	Pass
BHA/10.2								
Soil Glass Jar - Unpreserved								
BHA1/7.0,	BHA1/10.2,	**16 Oct 2006**	**20 Oct 2006**	30 Oct 2006	Pass	**20 Oct 2006**	29 Nov 2006	Pass
BHA2/7.0,	BHA2/10.2,							
DUP20,	TRIP SPIKE CONTROL							
Soil Glass Jar - Unpreserved								
BHB/6.0,	BHE/2.2,	**17 Oct 2006**	**20 Oct 2006**	31 Oct 2006	Pass	**20 Oct 2006**	29 Nov 2006	Pass
BHE/3.5,	BHF/3.6,							
BHF/1.0,	BH12A/4.2,							
TRIP SPIKE 1,	TRIP BLANK 1							
EP075(SIM): PAH/Phenols (SIM)								
Soil Glass Jar - Unpreserved								
BHA/5.0,	BHA/7.0,	**16 Oct 2006**	**19 Oct 2006**	30 Oct 2006	Pass	**20 Oct 2006**	28 Nov 2006	Pass
BHA/10.2								

Matrix Type: SOIL

Analysis Holding Time and Preservation

Method / **Container /** Client Sample ID(s)		**Date Sampled**	**Extraction / Preparation**			**Analysis**		
			Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EP075(SIM): PAH/Phenols (SIM) **- continued**								
Soil Glass Jar - Unpreserved								
BHA1/7.0,	BHA1/10.2,	**16 Oct 2006**	**20 Oct 2006**	30 Oct 2006	Pass	**20 Oct 2006**	29 Nov 2006	Pass
BHA2/7.0,	BHA2/10.2,							
DUP20								
Soil Glass Jar - Unpreserved								
BHB/6.0,	BHE/2.2,	**17 Oct 2006**	**20 Oct 2006**	31 Oct 2006	Pass	**20 Oct 2006**	29 Nov 2006	Pass
BHE/3.5,	BHF/3.6,							
BHF/1.0,	BH12A/4.2							
EP080: TPH Volatiles/BTEX								
Soil Glass Jar - Unpreserved								
BHA/5.0,	BHA/7.0,	**16 Oct 2006**	**18 Oct 2006**	30 Oct 2006	Pass	**18 Oct 2006**	30 Oct 2006	Pass
BHA/10.2,	BHA1/7.0,							
BHA1/10.2,	BHA2/7.0,							
BHA2/10.2,	DUP20							
Soil Glass Jar - Unpreserved								
TRIP SPIKE CONTROL		**16 Oct 2006**	**18 Oct 2006**	30 Oct 2006	Pass	**19 Oct 2006**	30 Oct 2006	Pass
Soil Glass Jar - Unpreserved								
BHB/6.0,	BHE/2.2,	**17 Oct 2006**	**18 Oct 2006**	31 Oct 2006	Pass	**18 Oct 2006**	31 Oct 2006	Pass
BHE/3.5,	BHF/3.6,							
BHF/1.0,	BH12A/4.2,							
TRIP SPIKE 1								
Soil Glass Jar - Unpreserved								
TRIP BLANK 1		**17 Oct 2006**	**18 Oct 2006**	31 Oct 2006	Pass	**19 Oct 2006**	31 Oct 2006	Pass

Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

Matrix Type: SOIL ***Frequency of Quality Control Samples***

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	**Actual**	**Expected**	
Laboratory Duplicates (DUP)					
EA055-103: Moisture Content	8	69	**11.6**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EK026G: Total Cyanide By Discrete Analyser	1	6	**16.7**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	4	26	**15.4**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	4	37	**10.8**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	6	59	**10.2**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Laboratory Control Samples (LCS)					
EK026G: Total Cyanide By Discrete Analyser	1	6	**16.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	2	26	**7.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	2	37	**5.4**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	3	59	**5.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Method Blanks (MB)					
EK026G: Total Cyanide By Discrete Analyser	1	6	**16.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	2	26	**7.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	2	37	**5.4**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	3	59	**5.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Matrix Spikes (MS)					
EK026G: Total Cyanide By Discrete Analyser	1	6	**16.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	2	26	**7.7**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	2	37	**5.4**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	3	59	**5.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Interpretive Quality Control Report - Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

Non-surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Laboratory Duplicates (DUP)							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	SOIL	ES0612955-014	BH12A/4.2	Chrysene	22.3 %	0-20 %	RPD exceeds LOR based limits

- **For all matrices, no method blank result outliers occur.**
- **For all matrices, no laboratory spike recoveries breaches occur.**
- **For all matrices, no matrix spike recoveries breaches occur.**

Surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Surrogates							
EP075(SIM)S: Phenolic Compound Surrogates	SOIL	ES0612955-004	BHA1/7.0	Phenol-d6	116 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-005	BHA1/10.2	Phenol-d6	115 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-006	BHA2/7.0	Phenol-d6	117 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-007	BHA2/10.2	Phenol-d6	123 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-008	BHB/6.0	Phenol-d6	125 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-009	BHE/2.2	Phenol-d6	124 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-010	BHE/3.5	Phenol-d6	117 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-011	DUP20	Phenol-d6	126 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-012	BHF/3.6	Phenol-d6	118 %	24-113 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-013	BHF/1.0	Phenol-d6	116 %	24-113 %	Recovery greater than upper data quality objective
EP075(SIM)T: PAH Surrogates	SOIL	ES0612955-008	BHB/6.0	2-Fluorobiphenyl	116 %	30-115 %	Recovery greater than upper data quality objective
	SOIL	ES0612955-009	BHE/2.2	2-Fluorobiphenyl	117 %	30-115 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

- **No holding time outliers occur.**

Outliers : Frequency of Quality Control Samples

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- **No frequency outliers occur.**

Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure 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 herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: SOIL ***Method Reference Summary***

Preparation Methods

EK026PR : NaOH leach for TCN in Soils - APHA 20th ed., 4500 CN- C & N. Samples are extracted by end-over-end tumbling with NaOH.

ORG16 : Methanolic Extraction of Soils for Purge and Trap - (USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

ORG17B : Tumbler Extraction of Solids (Option B - Non-concentrating) - 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.

Analytical Methods

EA055-103 : Moisture Content - A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)

EK026G : Total Cyanide By Discrete Analyser - APHA 20th 4500 CN - C & N. Caustic leach extracts of the sample are distilled with sulphuric acid, converting all CN species to HCN. The distillates are analyzed for CN by Seal. This method is compliant with NEPM (1999) Schedule B(3) (Method 403)

EP071 : TPH - Semivolatile Fraction - (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)

EP075(SIM) : PAH/Phenols (SIM) - (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)

EP080 : TPH Volatiles/BTEX - (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)

AUSTRALIAN LABORATORY SERVICES PTY LTD ABN 84 009 936 029
277-289 Woodpark Road Smithfield NSW 2164 Australia
Telephone: +61 (02) 8784 8555 Facsimile: +61 (02) 8784 8500 http://www.alsenviro.com/

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive report

Client Details

Client	:	**CH2M HILL PTY LTD**
Contact	:	**MR ADAM SULLIVAN**
Address	:	PO BOX 5392 CHATSWOOD NSW AUSTRALIA 1515
Project	:	**347496 MACDONALDTOWN GASWORK**
Order number	:	**- Not provided -**
C-O-C Number	:	**- Not provided -**
Site	:	**- Not provided -**
Sampler	:	**- Not provided -**
E-mail	:	adam.sullivan@ch2m.com.au
Telephone	:	02 9950 0200
Facsimile	:	02 9950 0600

Laboratory Details

Laboratory	:	**ALS Environmental Sydney**
Manager	:	**Greg Vogel**
Address	:	277-289 Woodpark Road Smithfield NSW Australia 2164
Quote number	:	----
Work order	:	**ES0612955**
E-mail	:	Greg.Vogel@alsenviro.com
Telephone	:	+61 (02) 8784 8555
Facsimile	:	+61 (02) 8784 8500

Dates

Date Samples Received	:	17 Oct 2006	**SRA Issue Date**	:	17 Oct 2006
Scheduled Reporting Date	:	**25 Oct 2006**	**Client Requested Date**	:	25 Oct 2006

Delivery Details

Mode of Delivery	:	Carrier.	**Temperature**	:	CHILLED - Ice present
No. of coolers/boxes	:	1 HARD	**No. of samples** - **Received**		22
Security Seal	:	Intact.	- **Analysed**		17

Comments

- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**

- Analytical work for this work order will be conducted at ALSE Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Please direct any turn around / technical queries to the laboratory contact designated above.
- When the sampling time is not supplied on the COC documentation, ALSE defaults the sampling time to that of the COC 'relinquishment' time (if supplied). If this also is not supplied, ALSE defaults the sampling time to the 'time of receipt at Laboratory'.

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Client	: CH2M HILL PTY LTD	**Work Order**	: ES0612955
Project	: 347496 MACDONALDTOWN GASWORKS	**ALS Quote Reference**	: ----

Summary of Sample(s) / Container(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as moisture and preparation tasks, that form an implicit part of that package.

ALS Sample ID.	Client Sample ID - Sample Date	**Requested Analysis**									
		EA055-103 - SOIL Moisture Content	**EK026G (Solids) - SOIL** Total Cyanide By Discrete Analyser	**S-04 - SOIL** TPH/BTEX	**S-14A - SOIL** PAH/Phenols (16 PAH - SIM)						
ES0612955-001	**BHA/5.0 - 16 Oct 2006**			]	]						
ES0612955-002	**BHA/7.0 - 16 Oct 2006**			]	]						
ES0612955-003	**BHA/10.2 - 16 Oct 2006**			]	]						
ES0612955-004	**BHA1/7.0 - 16 Oct 2006**			]	]						
ES0612955-005	**BHA1/10.2 - 16 Oct 2006**			]	]						
ES0612955-006	**BHA2/7.0 - 16 Oct 2006**			]	]						
ES0612955-007	**BHA2/10.2 - 16 Oct 2006**			]	]						
ES0612955-008	**BHB/6.0 - 17 Oct 2006**			]	]						
ES0612955-009	**BHE/2.2 - 17 Oct 2006**	]	]	]	]						
ES0612955-010	**BHE/3.5 - 17 Oct 2006**	]	]	]	]						
ES0612955-011	**DUP20 - 16 Oct 2006**			]	]						
ES0612955-012	**BHF/3.6 - 17 Oct 2006**	]	]	]	]						
ES0612955-013	**BHF/1.0 - 17 Oct 2006**	]	]	]	]						
ES0612955-014	**BH12A/4.2 - 17 Oct 2006**	]	]	]	]						
ES0612955-015	**TRIP SPIKE 1 - 17 Oct 2006**			]							
ES0612955-016	**TRIP BLANK 1 - 17 Oct 2006**			]							
ES0612955-017	**TRIP SPIKE CONTROL - 16 Oct 2006**			]							
ES0612955-018	**BHA/8.4 - 16 Oct 2006**										
ES0612955-019	**BHA/9.6 - 16 Oct 2006**										
ES0612955-020	**BHA1/9.6 - 16 Oct 2006**										
ES0612955-021	**BHE/1.6 - 17 Oct 2006**										
ES0612955-022	**BHF/2.6 - 17 Oct 2006**										
	Total(s) :	**5**	**5**	**17**	**14**						

Client	: CH2M HILL PTY LTD	**Work Order**	: ES0612955
Project	: 347496 MACDONALDTOWN GASWORKS	**ALS Quote Reference**	: ----

Requested Reports

l	**ALL ACCOUNTS**		
-	Invoice	Email	mogibu.rahman@ch2m.com.au
l	**MR ADAM SULLIVAN**		
-	A4 - Certificate of Analysis - NEPM format	Email	adam.sullivan@ch2m.com.au
-	A4 - Quality Control Report - NEPM format	Email	adam.sullivan@ch2m.com.au
-	A4 - Interpretive Quality Control Report - NEPM format	Email	adam.sullivan@ch2m.com.au
-	ENMRG Export Format	Email	adam.sullivan@ch2m.com.au
-	ESDAT Export Format	Email	adam.sullivan@ch2m.com.au
-	Chain of Custody Acknowledgement	Email	adam.sullivan@ch2m.com.au
-	A4 - Sample Receipt Notification - Comprehensive format	Email	adam.sullivan@ch2m.com.au

Sample Container(s) / Preservation Non-Compliance Log

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

l **No sample container / preservation non-compliance exist.**

ALS Environmental

CERTIFICATE OF ANALYSIS

Client	: **CH2M HILL PTY LTD**	*Laboratory*	: **ALS Environmental Sydney**	*Page*	: **1 of 11**
Contact	: **MR ADAM SULLIVAN**	*Contact*	: **Greg Vogel**	*Work Order*	: **ES0613014**
Address	: **PO BOX 5392 CHATSWOOD NSW AUSTRALIA 1515**	*Address*	: **277-289 Woodpark Road Smithfield NSW Australia 2164**		
E-mail	: **adam.sullivan@ch2m.com.au**	*E-mail*	: **Greg.Vogel@alsenviro.com**		
Telephone	: **02 9950 0200**	*Telephone*	: **+61 (02) 8784 8555**		
Facsimile	: **02 9950 0600**	*Facsimile*	: **+61 (02) 8784 8500**		
Project	: **347496 Macdonaldtown Gasworks**	*Quote number*	: **----**	*Date received*	: **18 Oct 2006**
Order number	: **- Not provided -**			*Date issued*	: **25 Oct 2006**
C-O-C number	: **- Not provided -**			*No. of samples* - *Received*	: **19**
Site	: **- Not provided -**			*Analysed*	: **16**

ALSE - Excellence in Analytical Testing

NATA Accredited Laboratory 825

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Accredited for compliance with ISO/IEC 17025.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	*Position*	*Department*
PHALAK INTHAKESONE	**Organics Co-ordinator**	**Organics - NATA 825 (10911 - Sydney)**
Sarah Millington	**Senior Inorganic Chemist**	**Inorganics - NATA 825 (10911 - Sydney)**

Comments

This report for the ALSE reference ES0613014 supersedes any previous reports with this reference. Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- **Analytical Results for Samples Submitted**
- **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental 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 herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insuffient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. * Indicates failed Surrogate Recoveries.

Specific comments for Work Order **ES0613014**

The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.

ALS Environmental

Analytical Results

				Client Sample ID :	TP15A/6.0	TP15A/7.0	MG09A1/0.7	MG09A1/3.6	MG09A1/4.8
				Sample Matrix Type / Description :	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date / Time :	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00
				Laboratory Sample ID :	ES0613014-001	ES0613014-002	ES0613014-003	ES0613014-004	ES0613014-005
Analyte	*CAS number*	*LOR*	*Units*						
EA055: Moisture Content									
Moisture Content (dried @ 103°C)		1.0	%		13.1	16.8	20.8	15.5	12.8
EK026G: Total Cyanide By Discrete Analyser									
Total Cyanide	57-12-5	1.0	mg/kg		<1.0	<1.0	23.6	<1.0	<1.0
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	2.0	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	1.8	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg		<1.0	<1.0	3.2	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	4.0	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		0.8	<0.5	182	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	27.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	6.8	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	26.0	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	54.3	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	22.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	24.4	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	24.6	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	12.2	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	9.8	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg		<0.5	<0.5	8.7	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	2.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	8.2	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	2.9	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	0.8	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	3.4	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction		2	mg/kg		<2	<2	39	<2	<2
C10 - C14 Fraction		50	mg/kg		<50	<50	850	<50	<50
C15 - C28 Fraction		100	mg/kg		<100	<100	2110	<100	<100

ALS Environmental

Analytical Results

			Client Sample ID :	TP15A/6.0	TP15A/7.0	MG09A1/0.7	MG09A1/3.6	MG09A1/4.8
			Sample Matrix Type / Description :	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Date / Time :	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00	17 Oct 2006 15:00
			Laboratory Sample ID :	ES0613014-001	ES0613014-002	ES0613014-003	ES0613014-004	ES0613014-005
Analyte	*CAS number*	*LOR*	*Units*					
EP080/071: Total Petroleum Hydrocarbons								
C29 - C36 Fraction		100	mg/kg	<100	<100	560	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	1.7	<0.2	<0.2
Toluene	108-88-3	0.2	mg/kg	<0.2	<0.2	6.6	<0.2	<0.2
Ethylbenzene	100-41-4	0.2	mg/kg	<0.2	<0.2	2.4	<0.2	<0.2
meta- & para-Xylene	108-38-3 106-42-3	0.2	mg/kg	<0.2	<0.2	14.5	<0.2	<0.2
ortho-Xylene	95-47-6	0.2	mg/kg	<0.2	<0.2	6.5	<0.2	<0.2
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	116	115	118	118	113
2-Chlorophenol-D4	93951-73-6	0.1	%	104	107	107	110	106
2.4.6-Tribromophenol	118-79-6	0.1	%	72.1	68.4	84.3	81.8	72.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	101	98.5	102	103	98.0
Anthracene-d10	1719-06-8	0.1	%	99.6	98.8	98.8	102	97.8
4-Terphenyl-d14	1718-51-0	0.1	%	106	106	104	105	99.8
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	80.7	80.2	84.0	105	114
Toluene-D8	2037-26-5	0.1	%	88.3	85.3	89.1	83.1	93.8
4-Bromofluorobenzene	460-00-4	0.1	%	86.2	92.1	90.1	85.2	78.2

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Analytical Results

			Client Sample ID :	MG10B/1.8	MG10B/3.0	BH14A/1.4	BH14A/2.4	BHF/7.0
			Sample Matrix Type / Description :	SOIL	SOIL	SOIL	SOIL	SOIL
			Sample Date / Time :	18 Oct 2006 15:00	18 Oct 2006 15:00	18 Oct 2006 15:00	18 Oct 2006 15:00	18 Oct 2006 15:00
			Laboratory Sample ID :	ES0613014-006	ES0613014-007	ES0613014-008	ES0613014-009	ES0613014-010
Analyte	*CAS number*	*LOR*	*Units*					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%	19.0	14.9	20.0	16.2	12.4
EK026G: Total Cyanide By Discrete Analyser								
Total Cyanide	57-12-5	1.0	mg/kg	----	----	----	----	<1.0
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	3.1	<0.5	0.7	<0.5	0.8
Acenaphthylene	208-96-8	0.5	mg/kg	1.1	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	2.0	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	3.0	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	7.9	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	2.6	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	4.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	5.1	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	2.0	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	1.6	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	1.3	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.7	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.6	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.6	<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
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction		2	mg/kg	<2	<2	9	<2	7
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100