

# **Attachment C14(e)**

**Proponent Phase I and Phase II  
Environmental Site Assessment (5/8)**



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH10_0.15-0.25 [21-Aug-2015] ES1529109-037 Result	BH09_0.25-0.35 [21-Aug-2015] ES1529109-038 Result	BH12_0.15-0.25 [21-Aug-2015] ES1529109-039 Result	BH01_0.3-0.4 [21-Aug-2015] ES1529109-040 Result	BH01_1.0-1.1 [21-Aug-2015] ES1529109-041 Result
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>					
2-Chlorotoluene	95-49-8	0.5	mg/kg	****	****
4-Chlorotoluene	106-43-4	0.5	mg/kg	****	****
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	****	****
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	****	****
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	****	****
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	****	****
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	****	****
<b>EP074G: Trihalomethanes</b>					
Chloroform	67-66-3	0.5	mg/kg	****	****
Bromodichloromethane	75-27-4	0.5	mg/kg	****	****
Dibromochloromethane	124-48-1	0.5	mg/kg	****	****
Bromoform	75-25-2	0.5	mg/kg	****	****
<b>EP075(SIM)A: Phenolic Compounds</b>					
Phenol	108-95-2	0.5	mg/kg	****	****
2-Chlorophenol	95-57-8	0.5	mg/kg	****	****
2-Methylphenol	95-48-7	0.5	mg/kg	****	****
3- & 4-Methylphenol	1319-77-3	1	mg/kg	****	****
2-Nitrophenol	88-75-5	0.5	mg/kg	****	****
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	****	****
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	****	****
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	****	****
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	****	****
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	****	****
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	****	****
Pentachlorophenol	87-86-5	2	mg/kg	****	****
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>					
Naphthalene	91-20-3	0.5	mg/kg	<0.5	0.6
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	2.4
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	9.2
Anthracene	120-12-7	0.5	mg/kg	<0.5	4.6
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	40.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	53.1



□□□□□□ □□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH10_0.15-0.25 [21-Aug-2015] ES1529109-037	BH09_0.25-0.35 [21-Aug-2015] ES1529109-038	BH12_0.15-0.25 [21-Aug-2015] ES1529109-039	BH01_0.3-0.4 [21-Aug-2015] ES1529109-040	BH01_1.0-1.1 [21-Aug-2015] ES1529109-041
		Result	Result	Result	Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>						
Benz(a)anthracene	56-55-3	0.5	<0.5	0.9	----	29.4
Chrysene	218-01-9	0.5	<0.5	1.1	----	29.2
Benzo(b+)fluoranthene	205-99-2	0.5	<0.5	1.4	----	33.6
Benzo(k)fluoranthene	207-08-9	0.5	<0.5	0.7	----	12.8
Benzo(a)pyrene	50-32-8	0.5	<0.5	1.1	----	29.1
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	<0.5	0.6	----	13.4
Dibenz(a,h)anthracene	53-70-3	0.5	<0.5	<0.5	----	3.4
Benzo(g,h,i)perylene	191-24-2	0.5	<0.5	0.9	----	16.2
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	<0.5	11.1	----	278
^ Benzo(a)pyrene TEQ (zero)	----	0.5	<0.5	1.5	----	41.9
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	0.6	1.7	----	41.9
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	1.2	2.0	----	41.9
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
C6 - C9 Fraction	----	10	----	----	----	<10
C10 - C14 Fraction	----	50	----	----	----	<50
C15 - C28 Fraction	----	100	----	----	----	540
C29 - C36 Fraction	----	100	----	----	----	450
^ C10 - C36 Fraction (sum)	----	50	----	----	----	990
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>						
C6 - C10 Fraction	C6_C10	10	----	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	----	----	----	<10
>C10 - C16 Fraction	>C10_C16	50	----	----	----	<50
>C16 - C34 Fraction	----	100	----	----	----	910
>C34 - C40 Fraction	----	100	----	----	----	240
^ >C10 - C40 Fraction (sum)	----	50	----	----	----	1150
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	----	----	----	<50
<b>EP080: BTEXN</b>						
Benzene	71-43-2	0.2	----	----	----	<0.2
Toluene	108-88-3	0.5	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	----	----	----	<0.5
meta- & para-Xylene	108-38-3	0.5	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	----	----	----	<0.5
^ Sum of BTEX	----	0.2	----	----	----	<0.2



□□□□□□ □□□□ □□□□ □□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH10_0.15-0.25 [21-Aug-2015] ES1529109-037 Result	BH09_0.25-0.35 [21-Aug-2015] ES1529109-038 Result	BH12_0.15-0.25 [21-Aug-2015] ES1529109-039 Result	BH01_0.3-0.4 [21-Aug-2015] ES1529109-040 Result	BH01_1.0-1.1 [21-Aug-2015] ES1529109-041 Result
<b>EP080: BTEXN - Continued</b>						
^ Total Xylenes	1330-20-7	0.5	mg/kg	-----	-----	<0.5
Naphthalene	91-20-3	1	mg/kg	-----	-----	<1
<b>EP066S: PCB Surrogate</b>						
Decachlorobiphenyl	2051-24-3	0.1	%	-----	-----	74.0
<b>EP068S: Organochlorine Pesticide Surrogate</b>						
Dibromo-DDE	21655-73-2	0.05	%	-----	-----	94.7
<b>EP068T: Organophosphorus Pesticide Surrogate</b>						
DEF	78-48-8	0.05	%	-----	-----	69.1
<b>EP074S: VOC Surrogates</b>						
1,2-Dichloroethane-D4	17060-07-0	0.5	%	-----	-----	-----
Toluene-D8	2037-26-5	0.5	%	-----	-----	-----
o,p-Bromofluorobenzene	460-00-4	0.5	%	-----	-----	-----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>						
Phenol-d6	13127-88-3	0.5	%	-----	-----	91.4
2-Chlorophenol-D4	93951-73-6	0.5	%	-----	-----	92.7
2,4,6-Tribromophenol	118-79-6	0.5	%	-----	-----	74.2
<b>EP075(SIM)T: PAH Surrogates</b>						
2-Fluorobiphenyl	321-60-8	0.5	%	-----	-----	96.3
Anthracene-d10	1719-06-8	0.5	%	-----	-----	104
4-Terphenyl-d14	1718-51-0	0.5	%	-----	-----	102
<b>EP080S: TPH(V)/BTEX Surrogates</b>						
1,2-Dichloroethane-D4	17060-07-0	0.2	%	-----	-----	104
Toluene-D8	2037-26-5	0.2	%	-----	-----	84.0
4-Bromofluorobenzene	460-00-4	0.2	%	-----	-----	87.2



Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EA055: Moisture Content</b>					
^ Moisture Content (dried @ 103°C)	28.6	21.3	27.6	21.9	20.3
<b>EA200: AS 4964 - 2004 Identification of Asbestos in Soils</b>					
Asbestos Detected	1332-21-4			Yes	
Asbestos Type	1332-21-4			Ch	
Sample weight (dry)	0.01			17.3	
APPROVED IDENTIFIER:				S.SPOONER	
<b>EG005T: Total Metals by ICP-AES</b>					
Arsenic	7440-38-2	49	62	31	39
Cadmium	7440-43-9	15	16	1	1
Chromium	7440-47-3	429	54	12	10
Copper	7440-50-8	5480	26400	155	140
Lead	7439-92-1	2250	6060	234	201
Nickel	7440-02-0	520	1320	23	33
Zinc	7440-66-6	11600	21400	367	382
<b>EG035T: Total Recoverable Mercury by FIMS</b>					
Mercury	7439-97-6	0.4	0.1	0.3	0.3
<b>EP066: Polychlorinated Biphenyls (PCB)</b>					
Total Polychlorinated biphenyls		<0.1			
<b>EP068A: Organochlorine Pesticides (OC)</b>					
alpha-BHC	319-84-6	<0.05			
Hexachlorobenzene (HCB)	118-74-1	<0.05			
beta-BHC	319-85-7	<0.05			
gamma-BHC	58-89-9	<0.05			
delta-BHC	319-86-8	<0.05			
Heptachlor	76-44-8	<0.05			
Aldrin	309-00-2	<0.05			
Heptachlor epoxide	1024-57-3	<0.05			
^ Total Chlordane (sum)		<0.05			
trans-Chlordane	5103-74-2	<0.05			
alpha-Endosulfan	959-98-8	<0.05			
cis-Chlordane	5103-71-9	<0.05			
Dieldrin	60-57-1	<0.05			
4,4'-DDE	72-55-9	<0.05			
Endrin	72-20-8	<0.05			



□□□□□□ □□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>					
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	****
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	****
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	****
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	****
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	****
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	****
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	****
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	****
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	****
^ Sum of DDD + DDE + DDT	****	0.05	mg/kg	<0.05	****
<b>EP068B: Organophosphorus Pesticides (OP)</b>					
OP Dichlorvos	62-73-7	0.05	mg/kg	<0.05	****
OP Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	****
OP Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	****
Dimethoate	60-51-5	0.05	mg/kg	<0.05	****
Diazinon	333-41-5	0.05	mg/kg	<0.05	****
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	****
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	****
Malathion	121-75-5	0.05	mg/kg	<0.05	****
Fenthion	55-38-9	0.05	mg/kg	<0.05	****
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	****
Parathion	56-38-2	0.2	mg/kg	<0.2	****
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	****
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	****
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	****
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	****
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	****
Ethion	563-12-2	0.05	mg/kg	<0.05	****
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	****
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	****
<b>EP074D: Fumigants</b>					
2,2-Dichloropropane	594-20-7	0.5	mg/kg	****	****
1,2-Dichloropropane	78-87-5	0.5	mg/kg	****	****
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	****	****



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EP074D: Fumigants - Continued</b>					
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	****	****
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	****	****
<b>EP074E: Halogenated Aliphatic Compounds</b>					
Dichlorodifluoromethane	75-71-8	5	mg/kg	****	****
Chloromethane	74-87-3	5	mg/kg	****	****
Vinyl chloride	75-01-4	5	mg/kg	****	****
Bromomethane	74-83-9	5	mg/kg	****	****
Chloroethane	75-00-3	5	mg/kg	****	****
Trichlorofluoromethane	75-69-4	5	mg/kg	****	****
1,1-Dichloroethene	75-35-4	0.5	mg/kg	****	****
Iodomethane	74-88-4	0.5	mg/kg	****	****
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	****	****
cis-1,2-Dichloroethene	75-34-3	0.5	mg/kg	****	****
1,1,1-Trichloroethane	156-59-2	0.5	mg/kg	****	****
1,1-Dichloropropylene	71-55-6	0.5	mg/kg	****	****
Carbon Tetrachloride	563-58-6	0.5	mg/kg	****	****
1,2-Dichloroethane	56-23-5	0.5	mg/kg	****	****
Trichloroethene	107-06-2	0.5	mg/kg	****	****
Dibromomethane	79-01-6	0.5	mg/kg	****	****
1,1,2-Trichloroethane	74-95-3	0.5	mg/kg	****	****
1,3-Dichloropropane	79-00-5	0.5	mg/kg	****	****
Tetrachloroethene	142-28-9	0.5	mg/kg	****	****
1,1,1,2-Tetrachloroethane	127-18-4	0.5	mg/kg	****	****
trans-1,4-Dichloro-2-butene	630-20-6	0.5	mg/kg	****	****
cis-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	****	****
1,1,2,2-Tetrachloroethane	1476-11-5	0.5	mg/kg	****	****
1,2,3-Trichloropropane	79-34-5	0.5	mg/kg	****	****
Pentachloroethane	96-18-4	0.5	mg/kg	****	****
1,2-Dibromo-3-chloropropane	76-01-7	0.5	mg/kg	****	****
Hexachlorobutadiene	96-12-8	0.5	mg/kg	****	****
	87-68-3	0.5	mg/kg	****	****
<b>EP074F: Halogenated Aromatic Compounds</b>					
Chlorobenzene	108-90-7	0.5	mg/kg	****	****
Bromobenzene	108-86-1	0.5	mg/kg	****	****



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>					
2-Chlorotoluene	95-49-8	0.5	mg/kg	*****	*****
4-Chlorotoluene	106-43-4	0.5	mg/kg	*****	*****
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	*****	*****
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	*****	*****
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	*****	*****
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	*****	*****
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	*****	*****
<b>EP074G: Trihalomethanes</b>					
Chloroform	67-66-3	0.5	mg/kg	*****	*****
Bromodichloromethane	75-27-4	0.5	mg/kg	*****	*****
Dibromochloromethane	124-48-1	0.5	mg/kg	*****	*****
Bromoform	75-25-2	0.5	mg/kg	*****	*****
<b>EP075(SIM)A: Phenolic Compounds</b>					
Phenol	108-95-2	0.5	mg/kg	*****	*****
2-Chlorophenol	95-57-8	0.5	mg/kg	*****	*****
2-Methylphenol	95-48-7	0.5	mg/kg	*****	*****
3- & 4-Methylphenol	1319-77-3	1	mg/kg	*****	*****
2-Nitrophenol	88-75-5	0.5	mg/kg	*****	*****
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	*****	*****
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	*****	*****
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	*****	*****
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	*****	*****
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	*****	*****
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	*****	*****
Pentachlorophenol	87-86-5	2	mg/kg	*****	*****
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>					
Naphthalene	91-20-3	0.5	mg/kg	<0.5	57.3
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	174
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	24.8
Fluorene	86-73-7	0.5	mg/kg	<0.5	132
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	386
Anthracene	120-12-7	0.5	mg/kg	<0.5	139
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	335
Pyrene	129-00-0	0.5	mg/kg	<0.5	239
					50.0
					181
					26.0
					135
					433
					163
					390
					275





□□□□□□ □□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>					
Benz(a)anthracene	56-55-3 0.5 mg/kg	<0.5	----	171	175
Chrysene	218-01-9 0.5 mg/kg	<0.5	----	105	115
Benzo(b+)fluoranthene	205-99-2 0.5 mg/kg	<0.5	----	139	130
Benzo(k)fluoranthene	207-08-9 0.5 mg/kg	<0.5	----	49.3	54.2
Benzo(a)pyrene	50-32-8 0.5 mg/kg	<0.5	----	102	106
Indeno(1,2,3-cd)pyrene	193-39-5 0.5 mg/kg	<0.5	----	45.8	36.8
Dibenz(a,h)anthracene	53-70-3 0.5 mg/kg	<0.5	----	15.4	11.4
Benzo(g,h,i)perylene	191-24-2 0.5 mg/kg	<0.5	----	52.3	39.6
^ Sum of polycyclic aromatic hydrocarbons	----	<0.5	----	2170	2320
^ Benzo(a)pyrene TEQ (zero)	----	<0.5	----	159	158
^ Benzo(a)pyrene TEQ (half LOR)	----	0.6	----	159	158
^ Benzo(a)pyrene TEQ (LOR)	----	1.2	----	159	158
<b>EP080/071: Total Petroleum Hydrocarbons</b>					
C6 - C9 Fraction	10 mg/kg	<10	<10	<10	<10
C10 - C14 Fraction	50 mg/kg	<50	<50	3720	1500
C15 - C28 Fraction	100 mg/kg	<100	<100	37000	25100
C29 - C36 Fraction	100 mg/kg	<100	<100	17800	11600
^ C10 - C36 Fraction (sum)	50 mg/kg	<50	<50	58500	38200
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>					
C6 - C10 Fraction	10 mg/kg	<10	<10	<10	<10
C6 - C10 Fraction minus BTEX (F1)	10 mg/kg	<10	<10	<10	<10
>C10 - C16 Fraction	50 mg/kg	<50	<50	7440	3740
>C16 - C34 Fraction	100 mg/kg	<100	<100	47500	31900
>C34 - C40 Fraction	100 mg/kg	<100	<100	10100	6230
^ >C10 - C40 Fraction (sum)	50 mg/kg	<50	<50	65000	41900
^ >C10 - C16 Fraction minus Naphthalene (F2)	50 mg/kg	<50	<50	7400	3720
<b>EP080: BTEXN</b>					
Benzene	71-43-2 0.2 mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3 0.5 mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4 0.5 mg/kg	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 0.5 mg/kg	<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
^ Sum of BTEX	0.2 mg/kg	<0.2	<0.2	<0.2	<0.2



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	BH01_3.8-3.9 [21-Aug-2015] ES1529109-042 Result	BH16_0.7-0.8 [21-Aug-2015] ES1529109-043 Result	BH17_1.0-1.1 [21-Aug-2015] ES1529109-044 Result	BH21_0.7-0.8 [21-Aug-2015] ES1529109-045 Result	QC202 [21-Aug-2015] ES1529109-046 Result
<b>EP080: BTEXN - Continued</b>					
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	38
<b>EP066S: PCB Surrogate</b>					
Decachlorobiphenyl	2051-24-3	0.1	%	70.9	-----
<b>EP068S: Organochlorine Pesticide Surrogate</b>					
Dibromo-DDE	21655-73-2	0.05	%	115	-----
<b>EP068T: Organophosphorus Pesticide Surrogate</b>					
DEF	78-48-8	0.05	%	81.5	-----
<b>EP074S: VOC Surrogates</b>					
1,2-Dichloroethane-D4	17060-07-0	0.5	%	-----	-----
Toluene-D8	2037-26-5	0.5	%	-----	-----
o,p-Bromofluorobenzene	460-00-4	0.5	%	-----	-----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>					
Phenol-d6	13127-88-3	0.5	%	100	93.3
2-Chlorophenol-D4	93951-73-6	0.5	%	106	91.0
2,4,6-Tribromophenol	118-79-6	0.5	%	79.9	110
<b>EP075(SIM)T: PAH Surrogates</b>					
2-Fluorobiphenyl	321-60-8	0.5	%	101	89.0
Anthracene-d10	1719-06-8	0.5	%	105	109
4-Terphenyl-d14	1718-51-0	0.5	%	108	111
<b>EP080S: TPH(V)/BTEX Surrogates</b>					
1,2-Dichloroethane-D4	17060-07-0	0.2	%	114	96.6
Toluene-D8	2037-26-5	0.2	%	93.4	93.8
4-Bromofluorobenzene	460-00-4	0.2	%	95.8	86.3
				86.2	81.7
				73.0	78.1
				81.2	87.4
				81.7	92.0



Sub-Matrix: SOIL (Matrix: SOIL)	QC102 [21-Aug-2015] ES1529109-047 Result 34.1	BH21_2.7-2.8 [22-Aug-2015] ES1529109-048 Result 20.9	BH21_3.0-3.1 [22-Aug-2015] ES1529109-049 Result 20.4	BH19_2.0-2.2 [22-Aug-2015] ES1529109-050 Result 17.8	BH17_2.0-2.1 [22-Aug-2015] ES1529109-051 Result 16.0
<b>EA055: Moisture Content</b>					
^ Moisture Content (dried @ 103°C)	----	1	%	34.1	16.0
<b>EA200: AS 4964 - 2004 Identification of Asbestos in Soils</b>					
Asbestos Detected	1332-21-4	0.1	g/kg	----	----
Asbestos Type	1332-21-4	-	--	----	----
Sample weight (dry)	----	0.01	g	----	----
APPROVED IDENTIFIER:	----	-	--	----	----
<b>EG005T: Total Metals by ICP-AES</b>					
Arsenic	7440-38-2	5	mg/kg	28	62
Cadmium	7440-43-9	1	mg/kg	3	4
Chromium	7440-47-3	2	mg/kg	244	607
Copper	7440-50-8	5	mg/kg	337	12200
Lead	7439-92-1	5	mg/kg	4430	1150
Nickel	7440-02-0	2	mg/kg	86	738
Zinc	7440-66-6	5	mg/kg	3170	2560
<b>EG035T: Total Recoverable Mercury by FIMS</b>					
Mercury	7439-97-6	0.1	mg/kg	3.2	0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>					
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----
<b>EP068A: Organochlorine Pesticides (OC)</b>					
alpha-BHC	319-84-6	0.05	mg/kg	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	----
Aldrin	309-00-2	0.05	mg/kg	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----
Dieldrin	60-57-1	0.05	mg/kg	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	----	----
Endrin	72-20-8	0.05	mg/kg	----	----



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	QC102 [21-Aug-2015] ES1529109-047 Result	BH21_2.7-2.8 [22-Aug-2015] ES1529109-048 Result	BH21_3.0-3.1 [22-Aug-2015] ES1529109-049 Result	BH19_2.0-2.2 [22-Aug-2015] ES1529109-050 Result	BH17_2.0-2.1 [22-Aug-2015] ES1529109-051 Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>					
beta-Endosulfan	33213-65-9	0.05	mg/kg	.....	.....
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	.....	.....
4,4'-DDD	72-54-8	0.05	mg/kg	.....	.....
Endrin aldehyde	7421-93-4	0.05	mg/kg	.....	.....
Endosulfan sulfate	1031-07-8	0.05	mg/kg	.....	.....
4,4'-DDT	50-29-3	0.2	mg/kg	.....	.....
Endrin ketone	53494-70-5	0.05	mg/kg	.....	.....
Methoxychlor	72-43-5	0.2	mg/kg	.....	.....
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	.....	.....
^ Sum of DDD + DDE + DDT	.....	0.05	mg/kg	.....	.....
<b>EP068B: Organophosphorus Pesticides (OP)</b>					
DDichlorvos	62-73-7	0.05	mg/kg	.....	.....
DDDemeton-S-methyl	919-86-8	0.05	mg/kg	.....	.....
DDMonocrotophos	6923-22-4	0.2	mg/kg	.....	.....
Dimethoate	60-51-5	0.05	mg/kg	.....	.....
Diazinon	333-41-5	0.05	mg/kg	.....	.....
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	.....	.....
Parathion-methyl	298-00-0	0.2	mg/kg	.....	.....
Malathion	121-75-5	0.05	mg/kg	.....	.....
Fenthion	55-38-9	0.05	mg/kg	.....	.....
Chlorpyrifos	2921-88-2	0.05	mg/kg	.....	.....
Parathion	56-38-2	0.2	mg/kg	.....	.....
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	.....	.....
Chlorfenvinphos	470-90-6	0.05	mg/kg	.....	.....
Bromophos-ethyl	4824-78-6	0.05	mg/kg	.....	.....
Fenamiphos	22224-92-6	0.05	mg/kg	.....	.....
Prothiofos	34643-46-4	0.05	mg/kg	.....	.....
Ethion	563-12-2	0.05	mg/kg	.....	.....
Carbophenothion	786-19-6	0.05	mg/kg	.....	.....
Azinphos Methyl	86-50-0	0.05	mg/kg	.....	.....
<b>EP074D: Fumigants</b>					
2,2-Dichloropropane	594-20-7	0.5	mg/kg	.....	.....
1,2-Dichloropropane	78-87-5	0.5	mg/kg	.....	.....
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	.....	.....



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	QC102 [21-Aug-2015] ES1529109-047 Result	BH21_2.7-2.8 [22-Aug-2015] ES1529109-048 Result	BH21_3.0-3.1 [22-Aug-2015] ES1529109-049 Result	BH19_2.0-2.2 [22-Aug-2015] ES1529109-050 Result	BH17_2.0-2.1 [22-Aug-2015] ES1529109-051 Result
<b>EP074D: Fumigants - Continued</b>					
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	****	****
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	****	****
<b>EP074E: Halogenated Aliphatic Compounds</b>					
Dichlorodifluoromethane	75-71-8	5	mg/kg	****	****
Chloromethane	74-87-3	5	mg/kg	****	****
Vinyl chloride	75-01-4	5	mg/kg	****	****
Bromomethane	74-83-9	5	mg/kg	****	****
Chloroethane	75-00-3	5	mg/kg	****	****
Trichlorofluoromethane	75-69-4	5	mg/kg	****	****
1,1-Dichloroethene	75-35-4	0.5	mg/kg	****	****
Iodomethane	74-88-4	0.5	mg/kg	****	****
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	****	****
cis-1,2-Dichloroethene	75-34-3	0.5	mg/kg	****	****
1,1,1-Trichloroethane	156-59-2	0.5	mg/kg	****	****
1,1-Dichloropropylene	71-55-6	0.5	mg/kg	****	****
Carbon Tetrachloride	563-58-6	0.5	mg/kg	****	****
1,2-Dichloroethane	56-23-5	0.5	mg/kg	****	****
Trichloroethene	107-06-2	0.5	mg/kg	****	****
Dibromomethane	79-01-6	0.5	mg/kg	****	****
1,1,2-Trichloroethane	74-95-3	0.5	mg/kg	****	****
1,3-Dichloropropane	79-00-5	0.5	mg/kg	****	****
Tetrachloroethene	142-28-9	0.5	mg/kg	****	****
1,1,1,2-Tetrachloroethane	127-18-4	0.5	mg/kg	****	****
trans-1,4-Dichloro-2-butene	630-20-6	0.5	mg/kg	****	****
cis-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	****	****
1,1,2,2-Tetrachloroethane	1476-11-5	0.5	mg/kg	****	****
1,2,3-Trichloropropane	79-34-5	0.5	mg/kg	****	****
Pentachloroethane	96-18-4	0.5	mg/kg	****	****
1,2-Dibromo-3-chloropropane	76-01-7	0.5	mg/kg	****	****
Hexachlorobutadiene	96-12-8	0.5	mg/kg	****	****
	87-68-3	0.5	mg/kg	****	****
<b>EP074F: Halogenated Aromatic Compounds</b>					
Chlorobenzene	108-90-7	0.5	mg/kg	****	****
Bromobenzene	108-86-1	0.5	mg/kg	****	****



□□□□□□ □□□□ □□□□ □□□□

Sub-Matrix: SOIL (Matrix: SOIL)	QC102 [21-Aug-2015] ES1529109-047 Result	BH21_2.7-2.8 [22-Aug-2015] ES1529109-048 Result	BH21_3.0-3.1 [22-Aug-2015] ES1529109-049 Result	BH19_2.0-2.2 [22-Aug-2015] ES1529109-050 Result	BH17_2.0-2.1 [22-Aug-2015] ES1529109-051 Result
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>					
2-Chlorotoluene	95-49-8	0.5	mg/kg	****	****
4-Chlorotoluene	106-43-4	0.5	mg/kg	****	****
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	****	****
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	****	****
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	****	****
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	****	****
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	****	****
<b>EP074G: Trihalomethanes</b>					
Chloroform	67-66-3	0.5	mg/kg	****	****
Bromodichloromethane	75-27-4	0.5	mg/kg	****	****
Dibromochloromethane	124-48-1	0.5	mg/kg	****	****
Bromoform	75-25-2	0.5	mg/kg	****	****
<b>EP075(SIM)A: Phenolic Compounds</b>					
Phenol	108-95-2	0.5	mg/kg	****	****
2-Chlorophenol	95-57-8	0.5	mg/kg	****	****
2-Methylphenol	95-48-7	0.5	mg/kg	****	****
3- & 4-Methylphenol	1319-77-3	1	mg/kg	****	****
2-Nitrophenol	88-75-5	0.5	mg/kg	****	****
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	****	****
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	****	****
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	****	****
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	****	****
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	****	****
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	****	****
Pentachlorophenol	87-86-5	2	mg/kg	****	****
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>					
Naphthalene	91-20-3	0.5	mg/kg	****	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	****	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	****	<0.5
Fluorene	86-73-7	0.5	mg/kg	****	1.9
Phenanthrene	85-01-8	0.5	mg/kg	****	3.2
Anthracene	120-12-7	0.5	mg/kg	****	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	****	1.0
Pyrene	129-00-0	0.5	mg/kg	****	0.8



□□□□□□ □□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)	QC102 [21-Aug-2015] ES1529109-047 Result	BH21_2.7-2.8 [22-Aug-2015] ES1529109-048 Result	BH21_3.0-3.1 [22-Aug-2015] ES1529109-049 Result	BH19_2.0-2.2 [22-Aug-2015] ES1529109-050 Result	BH17_2.0-2.1 [22-Aug-2015] ES1529109-051 Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>					
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.8	0.8
Chrysene	218-01-9	0.5	mg/kg	1.0	1.0
Benzo(b+)fluoranthene	205-99-2	205-82-3	0.5	mg/kg	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.5	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg	8.7	8.7
^ Benzo(a)pyrene TEQ (zero)	-----	0.5	mg/kg	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	-----	0.5	mg/kg	0.7	0.7
^ Benzo(a)pyrene TEQ (LOR)	-----	0.5	mg/kg	1.2	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>					
C6 - C9 Fraction	10	mg/kg	<10	<10	<10
C10 - C14 Fraction	50	mg/kg	<50	<50	1270
C15 - C28 Fraction	100	mg/kg	<100	<100	17800
C29 - C36 Fraction	100	mg/kg	<100	110	300
^ C10 - C36 Fraction (sum)	50	mg/kg	<50	110	550
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>					
C6 - C10 Fraction	10	mg/kg	<10	<10	16
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	16
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	2610
>C16 - C34 Fraction	-----	100	mg/kg	150	22300
>C34 - C40 Fraction	-----	100	mg/kg	<100	1620
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg	150	26500
^ >C10 - C16 Fraction minus Naphthalene (F2)	-----	50	mg/kg	<50	2610
<b>EP080: BTEXN</b>					
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5
^ Sum of BTEX	-----	0.2	mg/kg	<0.2	<0.2



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		QC102	BH21_2.7-2.8	BH21_3.0-3.1	BH19_2.0-2.2	BH17_2.0-2.1
		[21-Aug-2015]	[22-Aug-2015]	[22-Aug-2015]	[22-Aug-2015]	[22-Aug-2015]
		ES1529109-047	ES1529109-048	ES1529109-049	ES1529109-050	ES1529109-051
		Result	Result	Result	Result	Result
<b>EP080: BTEXN - Continued</b>						
^ 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
<b>EP066S: PCB Surrogate</b>						
Decachlorobiphenyl	2051-24-3	0.1	%	*****	*****	*****
<b>EP068S: Organochlorine Pesticide Surrogate</b>						
Dibromo-DDE	21655-73-2	0.05	%	*****	*****	*****
<b>EP068T: Organophosphorus Pesticide Surrogate</b>						
DEF	78-48-8	0.05	%	*****	*****	*****
<b>EP074S: VOC Surrogates</b>						
1,2-Dichloroethane-D4	17060-07-0	0.5	%	*****	*****	*****
Toluene-D8	2037-26-5	0.5	%	*****	*****	*****
o,p-Bromofluorobenzene	460-00-4	0.5	%	*****	*****	*****
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>						
Phenol-d6	13127-88-3	0.5	%	*****	*****	100
2-Chlorophenol-D4	93951-73-6	0.5	%	*****	*****	100
2,4,6-Tribromophenol	118-79-6	0.5	%	*****	*****	108
<b>EP075(SIM)T: PAH Surrogates</b>						
2-Fluorobiphenyl	321-60-8	0.5	%	*****	*****	94.6
Anthracene-d10	1719-06-8	0.5	%	*****	*****	104
4-Terphenyl-d14	1718-51-0	0.5	%	*****	*****	116
<b>EP080S: TPH(V)/BTEX Surrogates</b>						
1,2-Dichloroethane-D4	17060-07-0	0.2	%	99.0	96.4	88.4
Toluene-D8	2037-26-5	0.2	%	102	104	85.6
4-Bromofluorobenzene	460-00-4	0.2	%	110	111	96.7





Sub-Matrix: SOIL (Matrix: SOIL)	BH16_2.0-2.1 [22-Aug-2015]		ES1529109-052		Result	Result	Result	Result
<b>EA055: Moisture Content</b>								
^ Moisture Content (dried @ 103°C)	1	%	24.1					
<b>EA200: AS 4964 - 2004 Identification of Asbestos in Soils</b>								
Asbestos Detected	1332-21-4	0.1	g/kg					
Asbestos Type	1332-21-4	-	--					
Sample weight (dry)		0.01	g					
APPROVED IDENTIFIER:		-	--					
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	136				
Cadmium	7440-43-9	1	mg/kg	19				
Chromium	7440-47-3	2	mg/kg	109				
Copper	7440-50-8	5	mg/kg	3520				
Lead	7439-92-1	5	mg/kg	3290				
Nickel	7440-02-0	2	mg/kg	167				
Zinc	7440-66-6	5	mg/kg	7710				
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	20.4				
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls		0.1	mg/kg					
<b>EP068A: Organochlorine Pesticides (OC)</b>								
alpha-BHC	319-84-6	0.05	mg/kg					
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg					
beta-BHC	319-85-7	0.05	mg/kg					
gamma-BHC	58-89-9	0.05	mg/kg					
delta-BHC	319-86-8	0.05	mg/kg					
Heptachlor	76-44-8	0.05	mg/kg					
Aldrin	309-00-2	0.05	mg/kg					
Heptachlor epoxide	1024-57-3	0.05	mg/kg					
^ Total Chlordane (sum)		0.05	mg/kg					
trans-Chlordane	5103-74-2	0.05	mg/kg					
alpha-Endosulfan	959-98-8	0.05	mg/kg					
cis-Chlordane	5103-71-9	0.05	mg/kg					
Dieldrin	60-57-1	0.05	mg/kg					
4,4'-DDE	72-55-9	0.05	mg/kg					
Endrin	72-20-8	0.05	mg/kg					



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH16_2.0-2.1	
		[22-Aug-2015]	
		ES1529109-052	
		Result	Result
<b>EP068A: Organochlorine Pesticides (OC) - Continued</b>			
beta-Endosulfan	33213-65-9	0.05	mg/kg
^ Endosulfan (sum)	115-29-7	0.05	mg/kg
4,4'-DDD	72-54-8	0.05	mg/kg
Endrin aldehyde	7421-93-4	0.05	mg/kg
Endosulfan sulfate	1031-07-8	0.05	mg/kg
4,4'-DDT	50-29-3	0.2	mg/kg
Endrin ketone	53494-70-5	0.05	mg/kg
Methoxychlor	72-43-5	0.2	mg/kg
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg
^ Sum of DDD + DDE + DDT	-----	0.05	mg/kg
<b>EP068B: Organophosphorus Pesticides (OP)</b>			
OPDichlorvos	62-73-7	0.05	mg/kg
OPDemeton-S-methyl	919-86-8	0.05	mg/kg
OPMonocrotophos	6923-22-4	0.2	mg/kg
Dimethoate	60-51-5	0.05	mg/kg
Diazinon	333-41-5	0.05	mg/kg
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg
Parathion-methyl	298-00-0	0.2	mg/kg
Malathion	121-75-5	0.05	mg/kg
Fenthion	55-38-9	0.05	mg/kg
Chlorpyrifos	2921-88-2	0.05	mg/kg
Parathion	56-38-2	0.2	mg/kg
Pirimphos-ethyl	23505-41-1	0.05	mg/kg
Chlorfenvinphos	470-90-6	0.05	mg/kg
Bromophos-ethyl	4824-78-6	0.05	mg/kg
Fenamiphos	22224-92-6	0.05	mg/kg
Prothiofos	34643-46-4	0.05	mg/kg
Ethion	563-12-2	0.05	mg/kg
Carbophenothion	786-19-6	0.05	mg/kg
Azinphos Methyl	86-50-0	0.05	mg/kg
<b>EP074D: Fumigants</b>			
2,2-Dichloropropane	594-20-7	0.5	mg/kg
1,2-Dichloropropane	78-87-5	0.5	mg/kg
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg





□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH16_2.0-2.1	
		[22-Aug-2015]	
		ES1529109-052	
		Result	Result
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>			
2-Chlorotoluene	95-49-8	0.5	mg/kg
4-Chlorotoluene	106-43-4	0.5	mg/kg
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg
<b>EP074G: Trihalomethanes</b>			
Chloroform	67-66-3	0.5	mg/kg
Bromodichloromethane	75-27-4	0.5	mg/kg
Dibromochloromethane	124-48-1	0.5	mg/kg
O-Bromoform	75-25-2	0.5	mg/kg
<b>EP075(SIM)A: Phenolic Compounds</b>			
Phenol	108-95-2	0.5	mg/kg
2-Chlorophenol	95-57-8	0.5	mg/kg
2-Methylphenol	95-48-7	0.5	mg/kg
3- & 4-Methylphenol	1319-77-3	1	mg/kg
2-Nitrophenol	88-75-5	0.5	mg/kg
2,4-Dimethylphenol	105-67-9	0.5	mg/kg
2,4-Dichlorophenol	120-83-2	0.5	mg/kg
2,6-Dichlorophenol	87-65-0	0.5	mg/kg
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg
Pentachlorophenol	87-86-5	2	mg/kg
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>			
Naphthalene	91-20-3	0.5	mg/kg
Acenaphthylene	208-96-8	0.5	mg/kg
Acenaphthene	83-32-9	0.5	mg/kg
Fluorene	86-73-7	0.5	mg/kg
Phenanthrene	85-01-8	0.5	mg/kg
Anthracene	120-12-7	0.5	mg/kg
Fluoranthene	206-44-0	0.5	mg/kg
Pyrene	129-00-0	0.5	mg/kg



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH16_2.0-2.1	
		[22-Aug-2015]	
		ES1529109-052	
		Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>			
Benz(a)anthracene	56-55-3	0.5 mg/kg	*****
Chrysene	218-01-9	0.5 mg/kg	*****
Benzo(b+)fluoranthene	205-99-2	0.5 mg/kg	*****
Benzo(k)fluoranthene	207-08-9	0.5 mg/kg	*****
Benzo(a)pyrene	50-32-8	0.5 mg/kg	*****
Indeno(1,2,3-cd)pyrene	193-39-5	0.5 mg/kg	*****
Dibenz(a,h)anthracene	53-70-3	0.5 mg/kg	*****
Benzo(g,h,i)perylene	191-24-2	0.5 mg/kg	*****
^ Sum of polycyclic aromatic hydrocarbons		0.5 mg/kg	*****
^ Benzo(a)pyrene TEQ (zero)		0.5 mg/kg	*****
^ Benzo(a)pyrene TEQ (half LOR)		0.5 mg/kg	*****
^ Benzo(a)pyrene TEQ (LOR)		0.5 mg/kg	*****
<b>EP080/071: Total Petroleum Hydrocarbons</b>			
C6 - C9 Fraction		10 mg/kg	<10
C10 - C14 Fraction		50 mg/kg	<50
C15 - C28 Fraction		100 mg/kg	210
C29 - C36 Fraction		100 mg/kg	240
^ C10 - C36 Fraction (sum)		50 mg/kg	450
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>			
C6 - C10 Fraction	C6_C10	10 mg/kg	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10 mg/kg	<10
>C10 - C16 Fraction	>C10_C16	50 mg/kg	<50
>C16 - C34 Fraction		100 mg/kg	370
>C34 - C40 Fraction		100 mg/kg	220
^ >C10 - C40 Fraction (sum)		50 mg/kg	590
^ >C10 - C16 Fraction minus Naphthalene (F2)		50 mg/kg	<50
<b>EP080: BTEXN</b>			
Benzene	71-43-2	0.2 mg/kg	<0.2
Toluene	108-88-3	0.5 mg/kg	<0.5
Ethylbenzene	100-41-4	0.5 mg/kg	<0.5
meta- & para-Xylene	108-38-3	0.5 mg/kg	<0.5
ortho-Xylene	95-47-6	0.5 mg/kg	<0.5
^ Sum of BTEX		0.2 mg/kg	<0.2











Page : 2 of 25  
Work Order : ES1529109  
Client : AECOM Australia Pty Ltd  
Project : 60438840/1.1 Burrows

### 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

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



### 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 Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA055: Moisture Content (QC Lot: 193748)</b>									
ES1529100-017	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	18.0	18.1	0.624	0% - 50%
ES1529109-011	BH09_4.5-4.6	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	52.2	51.4	1.60	0% - 20%
<b>EA055: Moisture Content (QC Lot: 193749)</b>									
ES1529109-020	BH11_0.2-0.3	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	14.3	14.3	0.00	0% - 50%
ES1529109-031	QC200	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	35.0	36.5	4.20	0% - 20%
<b>EA055: Moisture Content (QC Lot: 193750)</b>									
ES1529109-042	BH01_3.8-3.9	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	28.6	31.9	10.8	0% - 20%
ES1529120-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	23.3	21.4	8.31	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 194934)</b>									
ES1529109-003	BH22_0.8-0.9	EG005T: Cadmium	7440-43-9	1	mg/kg	1	1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	15	26.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	11	0.00	No Limit
		EG005T: Arsenic	7440-39-2	5	mg/kg	357	321	10.6	0% - 20%
		EG005T: Copper	7440-50-8	5	mg/kg	444	395	11.8	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	554	# 447	21.2	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	862	# 698	21.0	0% - 20%
ES1529109-015	BH04_0.5-0.6	EG005T: Cadmium	7440-43-9	1	mg/kg	2	2	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	28	24	14.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	48	# 33	36.4	0% - 20%
		EG005T: Arsenic	7440-39-2	5	mg/kg	52	34	41.3	0% - 50%
		EG005T: Copper	7440-50-8	5	mg/kg	218	185	16.1	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	1030	# 2190	72.0	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	1590	1390	13.6	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 195095)</b>									
ES1529040-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	15	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	9	0.00	No Limit
		EG005T: Arsenic	7440-39-2	5	mg/kg	22	12	56.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	20	11	58.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	20	46.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	73	48	40.4	0% - 50%
ES1529108-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	18	27.4	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	23.7	No Limit
		EG005T: Arsenic	7440-39-2	5	mg/kg	11	11	0.00	No Limit



Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 195095) - continued</b>									
ES1529108-001	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	16	15	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	19	23.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	27	24	14.3	No Limit
<b>EG005T: Total Metals by ICP-AES (QC Lot: 195097)</b>									
ES1529109-052	BH16_2.0-2.1	EG005T: Cadmium	7440-43-9	1	mg/kg	19	19	0.00	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	109	94	14.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	167	179	7.11	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	136	148	8.52	0% - 20%
		EG005T: Copper	7440-50-8	5	mg/kg	3520	3000	15.7	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	3290	3740	12.8	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	7710	7300	5.44	0% - 20%
ES1529109-038	BH09_0.25-0.35	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	8	14.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	8	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	8	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	30	34	12.6	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 194935)</b>									
ES1529109-003	BH22_0.8-0.9	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.8	# 1.3	50.2	0% - 50%
ES1529109-015	BH04_0.5-0.6	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.0	0.8	19.2	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 195096)</b>									
ES1529040-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1529108-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 195098)</b>									
ES1529109-052	BH16_2.0-2.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	20.4	21.5	5.48	0% - 20%
ES1529109-038	BH09_0.25-0.35	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 193040)</b>									
ES1529109-043	BH16_0.7-0.8	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1529109-018	BH05_0.5-0.6	EP066: Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 193039)</b>									
ES1529109-043	BH16_0.7-0.8	EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit



Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP068A: Organochlorine Pesticides (OC) (QC Lot: 193039) - continued</b>										
ES1529109-043	BH16_0.7-0.8		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
			EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
			EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 193039)</b>										
ES1529109-043	BH16_0.7-0.8		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
			EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP068B: Organophosphorus Pesticides (OP) (QC Lot: 193039) - continued</b>											
ES1529109-043	BH16_0.7-0.8	EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit		
<b>EP074D: Fumigants (QC Lot: 193029)</b>											
ES1529109-009	BH14_4.0-4.1	EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 193029)</b>											



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 193029) - continued</b>											
ES1529109-009	BH14_4.0-4.1	EP074: 1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit		
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit		
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit		
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 193029)</b>											
ES1529109-009	BH14_4.0-4.1	EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
<b>EP074G: Trihalomethanes (QC Lot: 193029)</b>											
ES1529109-009	BH14_4.0-4.1	EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		



Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074G: Trihalomethanes (QC Lot: 193029) - continued</b>										
ES1529109-009	BH14_4.0-4.1		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 193037)</b>										
ES1529109-043	BH16_0.7-0.8		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
			EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
			EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
			EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 193042)</b>										
ES1529109-015	BH04_0.5-0.6		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
			EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOD	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 193042) - continued</b>											
ES1529109-015	BH04_0.5-0.6	EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit		
ES1529109-045	BH21_0.7-0.8	EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	38.0	39.2	3.12	No Limit		
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	11.8	13.0	9.44	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): Phenol	108-95-2	0.5	mg/kg	9.0	10.3	13.4	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	27	28	5.29	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<8	<8	0.00	No Limit		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 193045)</b>											
ES1529109-046	QC202	EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	41.8	43.5	4.00	0% - 50%		
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	14.0	14.6	4.31	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<4.0	<4.0	0.00	No Limit		
		EP075(SIM): Phenol	108-95-2	0.5	mg/kg	9.7	10.3	5.63	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	29	31	5.57	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<8	<8	0.00	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193037)</b>											
ES1529109-043	BH16_0.7-0.8	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
			205-82-3								
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		





Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193037) - continued</b>											
ES1529109-043	BH16_0.7-0.8	EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
ES1529109-018	BH05_0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.0	1.0	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.1	1.2	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	1.5	1.6	8.05	No Limit		
		EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	1.4	1.4	0.00	No Limit		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	0.7	1.0	31.7	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.5	0.6	0.00	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.0	1.0	0.00	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	1.9	1.8	0.00	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	0.6	0.7	27.9	No Limit		
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.0	0.8	17.8	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.0	1.9	7.29	No Limit		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	11.2	11.4	1.77	0% - 20%		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193042)</b>											
ES1529109-015	BH04_0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.4	1.4	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.6	1.5	0.00	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	2.1	2.0	5.36	No Limit		
		EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	1.9	1.9	0.00	No Limit		
		EP075(SIM): Benzo(g,h,i)perylene	205-82-3	0.5	mg/kg	1.2	1.2	0.00	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	191-24-2	0.5	mg/kg	0.8	0.8	0.00	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.4	1.3	8.27	No Limit		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		



Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOD	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193042) - continued</b>											
ES1529109-015	BH04_0.5-0.6	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	2.7	2.5	9.53	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	0.9	0.8	0.00	No Limit		
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.9	0.8	11.3	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.9	2.7	8.17	No Limit		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	15.7	14.9	5.23	0% - 20%		
ES1529109-045	BH21_0.7-0.8	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	24.8	23.5	5.52	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	174	174	0.297	0% - 20%		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	139	140	0.700	0% - 20%		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	171	161	5.95	0% - 20%		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	102	102	0.131	0% - 20%		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	159	159	0.491	0% - 20%		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	139	139	0.00	0% - 20%		
		EP075(SIM): Benzo(k)fluoranthene	205-82-3	0.5	mg/kg	52.3	52.2	0.00	0% - 50%		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	49.3	47.7	3.31	0% - 50%		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	105	104	0.952	0% - 20%		
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	15.4	15.8	2.50	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	335	337	0.555	0% - 20%		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	132	128	3.46	0% - 20%		
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	45.8	45.7	0.262	0% - 50%		
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	57.3	53.2	7.55	0% - 50%		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	386	387	0.121	0% - 20%		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	239	238	0.446	0% - 20%		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	2170	2150	0.871	0% - 20%		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193045)</b>											
ES1529109-046	QC202	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	26.0	26.9	3.40	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	181	187	3.08	0% - 20%		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	163	169	3.43	0% - 20%		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	175	180	2.94	0% - 20%		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	106	103	2.16	0% - 20%		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	158	161	1.49	0% - 20%		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	130	158	20.0	0% - 20%		
		EP075(SIM): Benzo(k)fluoranthene	205-82-3	0.5	mg/kg	39.6	40.6	2.42	0% - 50%		
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	54.2	56.7	4.66	0% - 50%		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	115	120	4.27	0% - 20%		



Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 193045) - continued</b>									
ES1529109-046	QC202	EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	11.4	12.7	10.2	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	390	399	2.31	0% - 20%
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	135	138	1.84	0% - 20%
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	36.8	41.5	12.1	0% - 50%
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	50.0	51.0	2.11	0% - 50%
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	433	450	3.90	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	275	281	2.04	0% - 20%
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	2320	2410	3.94	0% - 20%
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 193028)</b>									
ES1529109-024	BH05_2.3-2.4	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
ES1529109-009	BH14_4.0-4.1	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 193030)</b>									
ES1529109-047	QC102	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
ES1529141-027	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 193038)</b>									
ES1529109-018	BH05_0.5-0.6	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 193041)</b>									
ES1529109-015	BH04_0.5-0.6	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
ES1529109-045	BH21_0.7-0.8	EP071: C15 - C28 Fraction	---	100	mg/kg	37000	32200	13.8	0% - 20%
		EP071: C29 - C36 Fraction	---	100	mg/kg	17800	16900	5.08	0% - 20%
		EP071: C10 - C14 Fraction	---	50	mg/kg	3720	3740	0.634	0% - 20%
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 193044)</b>									
ES1529141-028	Anonymous	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
ES1529109-046	QC202	EP071: C15 - C28 Fraction	---	100	mg/kg	25100	23000	8.82	0% - 20%
		EP071: C29 - C36 Fraction	---	100	mg/kg	11600	11400	1.24	0% - 20%
		EP071: C10 - C14 Fraction	---	50	mg/kg	1500	# 900	50.3	0% - 20%
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QC Lot: 193028)</b>									
ES1529109-024	BH05_2.3-2.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1529109-009	BH14_4.0-4.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QC Lot: 193030)</b>									
ES1529109-047	QC102	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1529141-027	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit

Sub-Matrix: SOIL



Laboratory Duplicate (DUP) Report									
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 193038)</b>									
ES1529109-018	BH05_0.5-0.6	EP071: >C16 - C34 Fraction	----	100	mg/kg	140	110	22.6	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 193041)</b>									
ES1529109-015	BH04_0.5-0.6	EP071: >C16 - C34 Fraction	----	100	mg/kg	100	160	41.3	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
ES1529109-045	BH21_0.7-0.8	EP071: >C16 - C34 Fraction	----	100	mg/kg	47500	43500	8.74	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	10100	9050	10.8	0% - 20%
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	7440	7410	0.480	0% - 20%
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 193044)</b>									
ES1529141-028	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
ES1529109-046	QC202	EP071: >C16 - C34 Fraction	----	100	mg/kg	31900	30600	4.17	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	6230	5740	8.18	0% - 20%
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	3740	# 2760	30.2	0% - 20%
<b>EP080: BTEXN (QC Lot: 193028)</b>									
ES1529109-024	BH05_2.3-2.4	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1529109-009	BH14_4.0-4.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 193030)</b>									
ES1529109-047	QC102	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit



Page : 14 of 25  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
EP080: BTEXN (QC Lot: 193030) - continued		Anonymous					Original Result	Duplicate Result	RPD (%)	
ES1529141-027			EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
			EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit



### 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			Recovery Limits (%)	
				Result	Concentration	Spike	Spike Recovery (%)	LCS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 194934)</b>										
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	107	107	92	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.7	99.7	87	121	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	99.0	99.0	80	136	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	108	108	93	127	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	98.4	98.4	86	124	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	104	104	93	131	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	104	104	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 195095)</b>										
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	108	92	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	101	87	121	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	99.4	99.4	80	136	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	104	104	93	127	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	102	102	86	124	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	106	106	93	131	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	103	103	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 195097)</b>										
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	105	92	130	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.6	99.6	87	121	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	98.9	98.9	80	136	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	106	106	93	127	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	99.1	99.1	86	124	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	105	105	93	131	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	100	100	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 194935)</b>										
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	81.7	81.7	70	105	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 195096)</b>										
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	84.7	84.7	70	105	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 195098)</b>										
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.2	86.2	70	105	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 193040)</b>										
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	94.5	94.5	57	117	
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 193039)</b>										
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	94.9	76	120	



Method: Compound		CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
					Result	Concentration	Spike Recovery (%)	LCS	Low	High
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 193039) - continued</b>										
EP068: 4,4'-DDE		72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.0	69	117	
EP068: 4,4'-DDT		50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.2	67	127	
EP068: Aldrin		309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	68	118	
EP068: alpha-BHC		319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.6	71	113	
EP068: alpha-Endosulfan		959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	69	119	
EP068: beta-BHC		319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	69	119	
EP068: beta-Endosulfan		33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.9	76	120	
EP068: cis-Chlordane		5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	67	121	
EP068: delta-BHC		319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	65	113	
EP068: Dieldrin		60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	66	118	
EP068: Endosulfan sulfate		1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	60	124	
EP068: Endrin		72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67	123	
EP068: Endrin aldehyde		7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	57	115	
EP068: Endrin ketone		53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	65	123	
EP068: gamma-BHC		58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	71	115	
EP068: Heptachlor		76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	68	116	
EP068: Heptachlor epoxide		1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	68	116	
EP068: Hexachlorobenzene (HCB)		118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	66	122	
EP068: Methoxychlor		72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	87.0	65	129	
EP068: trans-Chlordane		5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	68	120	
<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 193039)</b>										
EP068: Azinphos Methyl		86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	72.5	42	126	
EP068: Bromophos-ethyl		4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	68	116	
EP068: Carbophenothion		786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	67	123	
EP068: Chlorfenvinphos		470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	70	118	
EP068: Chlorpyrifos		2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	68	114	
EP068: Chlorpyrifos-methyl		5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	90.3	55	119	
EP068: Demeton-S-methyl		919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	64	128	
EP068: Diazinon		333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	73	117	
EP068: Dichlorvos		62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	56	126	
EP068: Dimethoate		60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	64	124	
EP068: Ethion		563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	70	118	
EP068: Fenamiphos		22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	64	120	
EP068: Fenthion		55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.8	71	115	
EP068: Malathion		121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	70	120	
EP068: Monocrotophos		6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	67.4	54	122	
EP068: Parathion		56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	83.6	68	122	
EP068: Parathion-methyl		298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	81.4	69	123	
EP068: Pirimphos-ethyl		23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	69	115	



Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)	LCS	Low	High
<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 193039) - continued</b>									
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	68	116	
<b>EP074D: Fumigants (QCLot: 193029)</b>									
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	83.0	66	126	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	95.0	69	127	
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	88.8	55	133	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	79.2	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	76.0	51	125	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 193029)</b>									
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	81.0	62	122	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	88.5	62	126	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	84.2	56	132	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	86.8	70	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	66	132	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	104	54	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	90.7	64	128	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.6	65	135	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	79.9	53	129	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	99.3	65	123	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	87.8	72	128	
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	73.6	47	141	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	84.0	59	125	
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	128	49	143	
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	79.4	41	141	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	90.3	66	132	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	83.5	55	129	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	92.8	65	127	
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	67.6	30	148	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	95.0	48	136	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	46.2	43	129	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	77.0	20	134	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	82.8	67	143	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	87.0	62	130	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	89.9	54	128	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	90.4	64	120	
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	105	49	135	
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	92.2	43	147	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 193029)</b>									
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	89.9	60	132	





Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report				
				Result	Concentration	Spike	Spike Recovery (%)		Recovery Limits (%)	
							LCS	LCS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 193029) - continued</b>										
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	90.4	90.4	54	134	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	92.5	92.5	66	128	
EP074: 1,3-Dichlorobenzene	54-1-73-1	0.5	mg/kg	<0.5	1 mg/kg	88.4	88.4	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	86.8	86.8	63	129	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	90.7	90.7	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	91.1	91.1	62	130	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	86.6	86.6	67	127	
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	89.5	89.5	70	128	
<b>EP074G: Trihalomethanes (QCLot: 193029)</b>										
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	89.9	89.9	61	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	85.4	85.4	60	126	
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	95.6	95.6	62	120	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	79.3	79.3	63	121	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193037)</b>										
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	96.8	96.8	69	112	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	99.0	99.0	57	111	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	95.2	95.2	68	112	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	97.4	97.4	69	117	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	99.1	99.1	73	117	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	93.2	93.2	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	98.8	98.8	72	116	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	90.5	90.5	60	117	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	91.4	91.4	69	123	
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	93.8	93.8	76	114	
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	22.4	22.4	10	57	
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	97.4	97.4	74	116	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193042)</b>										
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	80.6	80.6	69	112	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	80.1	80.1	57	111	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	85.4	85.4	68	112	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	88.6	88.6	69	117	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	87.8	87.8	73	117	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	99.6	99.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	93.8	93.8	72	116	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	92.4	92.4	60	117	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	94.1	94.1	69	123	
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	90.6	90.6	76	114	
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	30.6	30.6	10	57	



Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)		
						LCS	Low	High
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193042) - continued</b>								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	89.9	74	116
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193045)</b>								
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	91.7	69	112
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	92.5	57	111
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	91.6	68	112
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	90.6	69	117
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	95.3	73	117
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	93.8	74	116
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	95.6	72	116
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	92.5	60	117
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	87.9	69	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	95.4	76	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	20.4	10	57
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	90.0	74	116
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 193037)</b>								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	97.0	79	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.2	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	95.1	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	93.9	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.4	76	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	92.5	70	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	95.0	72	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	96.8	77	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	100	81	123
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	99.2	72	113
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	98.0	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	92.9	77	123
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.4	71	113
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	100	80	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.8	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	97.3	79	125
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 193042)</b>								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	101	79	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	95.3	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	96.7	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.5	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.5	76	122



Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>Sub-Matrix: SOIL</b>									
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 193042) - continued</b>									
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	99.0	70	118	
	205-82-3								
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	98.5	72	114	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.4	77	123	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.7	81	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	90.9	72	113	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	97.4	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	94.4	77	123	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.7	71	113	
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	101	80	124	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	100	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	98.3	79	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 193045)</b>									
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	96.2	79	123	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	95.9	77	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	95.4	79	123	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.7	73	121	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.9	76	122	
EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	90.8	70	118	
	205-82-3								
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	89.5	72	114	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.7	77	123	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.8	81	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	90.3	72	113	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.8	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	92.8	77	123	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.9	71	113	
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.4	80	124	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	93.1	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	93.0	79	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193028)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	108	68	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193030)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	95.6	68	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193038)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	101	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	116	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	103	64	128	



Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report				
				Result	Concentration	Spike Recovery (%)		Recovery Limits (%)		
						LCS	LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193041)</b>										
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	105	71	131		
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	119	74	138		
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	103	64	128		
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193044)</b>										
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	109	71	131		
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	120	74	138		
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	104	64	128		
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QCLot: 193028)</b>										
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	108	68	128		
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QCLot: 193030)</b>										
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	95.4	68	128		
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QCLot: 193038)</b>										
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	70	130		
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	116	74	138		
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	100	63	131		
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QCLot: 193041)</b>										
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	70	130		
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	113	74	138		
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	102	63	131		
<b>EP080/071: Total Recoverable Hydrocarbons - NIEPM 2013 Fractions (QCLot: 193044)</b>										
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	108	70	130		
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	117	74	138		
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	87.7	63	131		
<b>EP080: BTEXN (QCLot: 193028)</b>										
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	98.7	62	116		
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	58	118		
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	94.1	60	120		
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.6	62	138		
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.8	60	120		
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	99.5	62	128		
<b>EP080: BTEXN (QCLot: 193030)</b>										
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.4	62	116		
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.8	58	118		
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	98.8	60	120		
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	103	62	138		
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	105	60	120		



Sub-Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) Report				
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	Spike Recovery (%)	Recovery Limits (%)	
					LCS	Low	High	
EP080: BTEXN (QCLot: 193030) - continued	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	100	62	128
EP080: Toluene								

### 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	Spike Concentration	Matrix Spike (MS) Report		Recovery Limits (%)
					Spike Recovery (%)	MS	
EG005T: Total Metals by ICP-AES (QCLot: 194934)							
ES1529109-003	BH22_0.8-0.9	EG005T: Arsenic	7440-38-2	50 mg/kg	# Not Determined	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	105	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	98.6	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	112	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	94.6	70	130
EG005T: Total Metals by ICP-AES (QCLot: 195095)							
ES1529040-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	99.8	70	130
EG005T: Total Metals by ICP-AES (QCLot: 195097)							
ES1529109-039	BH12_0.15-0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	80.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.9	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	# Not Determined	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	# Not Determined	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	82.0	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 194935)							
ES1529109-003	BH22_0.8-0.9	EG035T: Mercury	7439-97-6	5 mg/kg	112	70	130



Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low High
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 195096)</b>						
ES1529040-003	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	99.0	70 130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 195098)</b>						
ES1529109-039	BH12_0.15-0.25	EG035T: Mercury	7439-97-6	5 mg/kg	88.1	70 130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 193040)</b>						
ES1529109-018	BH05_0.5-0.6	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	97.5	70 130
<b>EP068A: Organochlorine Pesticides (OC) (QCLot: 193039)</b>						
ES1529109-018	BH05_0.5-0.6	EP068: 4,4'-DDT	50-29-3	2 mg/kg	80.9	70 130
		EP068: Aldrin	309-00-2	0.5 mg/kg	72.8	70 130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	82.9	70 130
		EP068: Endrin	72-20-8	2 mg/kg	95.7	70 130
		EP068: gamma-BHC	58-89-9	0.5 mg/kg	85.6	70 130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	118	70 130
<b>EP068B: Organophosphorus Pesticides (OP) (QCLot: 193039)</b>						
ES1529109-018	BH05_0.5-0.6	EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	109	70 130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	119	70 130
		EP068: Diazinon	333-41-5	0.5 mg/kg	92.0	70 130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	95.7	70 130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	106	70 130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 193029)</b>						
ES1529109-009	BH14_4.0-4.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	82.9	70 130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.7	70 130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 193029)</b>						
ES1529109-009	BH14_4.0-4.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.8	70 130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193037)</b>						
ES1529109-018	BH05_0.5-0.6	EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	97.8	70 130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	89.3	60 130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.7	70 130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	70.1	20 130
		EP075(SIM): Phenol	108-95-2	10 mg/kg	99.5	70 130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 193042)</b>						
ES1529109-015	BH04_0.5-0.6	EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	89.4	70 130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	74.8	60 130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.7	70 130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	92.3	20 130
		EP075(SIM): Phenol	108-95-2	10 mg/kg	80.4	70 130



Sub-Matrix: SOIL		Matrix Spike (MS) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Recovery Limits (%)	
EP075(SIM)A: Phenolic Compounds (QCLot: 193045) - continued				MS	Low High	
ES1529109-046	QC202	EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	82.1	70 130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	97.5	60 130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	96.6	70 130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	75.7	20 130
		EP075(SIM): Phenol	108-95-2	10 mg/kg	103	70 130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 193037)</b>						
ES1529109-018	BH05_0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.1	70 130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.0	70 130
<b>EP075(SIM)C: Polynuclear Aromatic Hydrocarbons (QCLot: 193042)</b>						
ES1529109-015	BH04_0.5-0.6	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.9	70 130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70 130
<b>EP075(SIM)D: Polynuclear Aromatic Hydrocarbons (QCLot: 193045)</b>						
ES1529109-046	QC202	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.5	70 130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	# Not Determined	70 130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193028)</b>						
ES1529109-009	BH14_4.0-4.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	123	70 130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193030)</b>						
ES1529109-047	QC102	EP080: C6 - C9 Fraction	----	32.5 mg/kg	107	70 130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193038)</b>						
ES1529109-018	BH05_0.5-0.6	EP071: C10 - C14 Fraction	----	523 mg/kg	88.1	73 137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	106	53 131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	126	52 132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193041)</b>						
ES1529109-015	BH04_0.5-0.6	EP071: C10 - C14 Fraction	----	523 mg/kg	105	73 137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	104	53 131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	122	52 132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 193044)</b>						
ES1529109-046	QC202	EP071: C10 - C14 Fraction	----	523 mg/kg	# 139	73 137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	# Not Determined	53 131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	# Not Determined	52 132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193028)</b>						
ES1529109-009	BH14_4.0-4.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	123	70 130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193030)</b>						



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	MS	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193030) - continued				Low	High		
ES1529109-047	QC102	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	103	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193038)</b>							
ES1529109-018	BH05_0.5-0.6	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	101	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	109	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	114	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193041)</b>							
ES1529109-015	BH04_0.5-0.6	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	98.9	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	113	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	113	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 193044)</b>							
ES1529109-046	QC202	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	# 158	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	# Not Determined	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	# Not Determined	52	132
<b>EP080: BTEXN (QCLot: 193028)</b>							
ES1529109-009	BH14_4.0-4.1	EP080: Benzene	71-43-2	2.5 mg/kg	86.7	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.5	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	89.7	70	130
			106-42-3				
		EP080: Naphthalene	91-20-3	2.5 mg/kg	93.8	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.8	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	86.4	70	130
<b>EP080: BTEXN (QCLot: 193030)</b>							
ES1529109-047	QC102	EP080: Benzene	71-43-2	2.5 mg/kg	85.5	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	104	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	102	70	130
			106-42-3				
		EP080: Naphthalene	91-20-3	2.5 mg/kg	99.6	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	109	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	94.7	70	130





Work Order	: ES1529109	Page	: 1 of 10
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: MR ALEX LATHAM	Telephone	: +61 2 8784 8555
Project	: 60438840/1.1 Burrows	Date Samples Received	: 24-Aug-2015
Site	: ----	Issue Date	: 31-Aug-2015
Sampler	: KATE PIGRAM, LAUREN GIBB	No. of samples received	: 124
Order number	: 60438840/1.1	No. of samples analysed	: 52

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

#### Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



**Outliers : Quality Control Samples**

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
<b>Duplicate (DUP) RPDs</b>							
EG005T: Total Metals by ICP-AES	ES1529109--003	BH22_0.8-0.9	Lead	7439-92-1	21.2 %	0% - 20%	RPD exceeds LOR based limits
EG005T: Total Metals by ICP-AES	ES1529109--015	BH04_0.5-0.6	Lead	7439-92-1	72.0 %	0% - 20%	RPD exceeds LOR based limits
EG005T: Total Metals by ICP-AES	ES1529109--015	BH04_0.5-0.6	Nickel	7440-02-0	36.4 %	0% - 20%	RPD exceeds LOR based limits
EG005T: Total Metals by ICP-AES	ES1529109--003	BH22_0.8-0.9	Zinc	7440-66-6	21.0 %	0% - 20%	RPD exceeds LOR based limits
EG035T: Total Recoverable Mercury by FIMS	ES1529109--003	BH22_0.8-0.9	Mercury	7439-97-6	50.2 %	0% - 50%	RPD exceeds LOR based limits
EP080/071: Total Petroleum Hydrocarbons	ES1529109--046	QC202	C10 - C14 Fraction	----	50.3 %	0% - 20%	RPD exceeds LOR based limits
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1529109--046	QC202	>C10 - C16 Fraction	>C10_C16	30.2 %	0% - 20%	RPD exceeds LOR based limits
<b>Matrix Spike (MS) Recoveries</b>							
EG005T: Total Metals by ICP-AES	ES1529109--003	BH22_0.8-0.9	Arsenic	7440-38-2	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	ES1529109--039	BH12_0.15-0.25	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	ES1529109--039	BH12_0.15-0.25	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	ES1529109--039	BH12_0.15-0.25	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1529109--046	QC202	Pyrene	129-00-0	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Petroleum Hydrocarbons	ES1529109--046	QC202	C10 - C14 Fraction	----	139 %	73-137%	Recovery greater than upper data quality objective
EP080/071: Total Petroleum Hydrocarbons	ES1529109--046	QC202	C15 - C28 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Petroleum Hydrocarbons	ES1529109--046	QC202	C29 - C36 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1529109--046	QC202	>C10 - C16 Fraction	>C10_C16	158 %	73-137%	Recovery greater than upper data quality objective
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1529109--046	QC202	>C16 - C34 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1529109--046	QC202	>C34 - C40 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.



Page : 3 of 10  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

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
<b>EA055: Moisture Content</b>					
<b>Soil Glass Jar - Unpreserved (EA055-103)</b>					
BH04_0.5-0.6, BH04_2.3-2.4, BH07A_0.5-0.6, BH11_2.3-2.4, BH05_1.0-1.1, BH08_0.17-0.18, BH08_2.5-2.6, BH13_0.4-0.5, QC200	20-Aug-2015	----	----	26-Aug-2015	03-Sep-2015
					✓
<b>Soil Glass Jar - Unpreserved (EA055-103)</b>					
BH22_0.8-0.9, BH22_4.5-4.7, BH14_0.45-0.55, BH14_4.0-4.1, BH09_4.5-4.6, BH10_4.0-4.1, BH12_1.0-1.1, BH07B_1.2-1.3, BH10_0.15-0.25, BH12_0.15-0.25, BH01_3.8-3.9, BH17_1.0-1.1, QC202,	21-Aug-2015	----	----	26-Aug-2015	04-Sep-2015
					✓
<b>Soil Glass Jar - Unpreserved (EA055-103)</b>					
BH21_2.7-2.8, BH19_2.0-2.2, BH16_2.0-2.1	22-Aug-2015	----	----	26-Aug-2015	05-Sep-2015
					✓



Page : 4 of 10  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

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

Method		Sample Date			Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA200: AS 4964 - 2004 Identification of Asbestos in Soils</b>								
<b>Snap Lock Bag - Separate bag received (EA200)</b>								
BH07A_0.5-0.6		----	----	----	26-Aug-2015	16-Feb-2016	✓	
<b>Snap Lock Bag - Separate bag received (EA200)</b>								
BH15_0.4-0.5, BH12_1.8-1.9, BH01_0.3-0.4	BH06_1.0-1.1, BH07B_1.2-1.3, BH21_0.7-0.8	----	----	----	26-Aug-2015	17-Feb-2016	✓	
<b>Soil Glass Jar - Unpreserved (EA200)</b>								
BH22_0.3-0.4		----	----	----	26-Aug-2015	17-Feb-2016	✓	
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b>								
BH04_0.5-0.6, BH04_2.3-2.4, BH07A_0.5-0.6, BH11_2.3-2.4, BH05_2.3-2.4, BH08_1.0-1.1, BH08_3.7-3.8, QC200	BH04_1.0-1.1, BH05_0.5-0.6, BH11_0.2-0.3, BH05_1.0-1.1, BH08_0.17-0.18, BH08_2.5-2.6, BH13_0.4-0.5,	27-Aug-2015	16-Feb-2016	✓	28-Aug-2015	16-Feb-2016	✓	
<b>Soil Glass Jar - Unpreserved (EG005T)</b>								
BH22_0.8-0.9, BH22_4.5-4.7, BH14_1.8-1.9, BH09_4.5-4.6, BH10_4.0-4.1, BH12_1.0-1.1, BH07B_2.3-2.4, BH12_0.15-0.25, BH16_0.7-0.8, BH21_0.7-0.8,	BH22_2.2-2.3, BH15_0.4-0.5, BH09_4.0-4.2, BH06_1.0-1.1, QC101, BH07B_1.2-1.3, BH09_0.25-0.35, BH01_1.0-1.1, BH17_1.0-1.1, QC202	27-Aug-2015	17-Feb-2016	✓	28-Aug-2015	17-Feb-2016	✓	
<b>Soil Glass Jar - Unpreserved (EG005T)</b>								
BH21_2.7-2.8, BH17_2.0-2.1,	BH19_2.0-2.2, BH16_2.0-2.1	27-Aug-2015	18-Feb-2016	✓	28-Aug-2015	18-Feb-2016	✓	



Page : 5 of 10  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

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

Method		Sample Date			Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b>								
BH04_0.5-0.6, BH04_2.3-2.4, BH07A_0.5-0.6, BH11_2.3-2.4, BH05_2.3-2.4, BH08_1.0-1.1, BH08_3.7-3.8, QC200	BH04_1.0-1.1, BH05_0.5-0.6, BH11_0.2-0.3, BH05_1.0-1.1, BH08_0.17-0.18, BH08_2.5-2.6, BH13_0.4-0.5,	27-Aug-2015	17-Sep-2015	✓	28-Aug-2015	17-Sep-2015	✓	
<b>Soil Glass Jar - Unpreserved (EG035T)</b>								
BH22_0.8-0.9, BH22_4.5-4.7, BH14_1.8-1.9, BH09_4.5-4.6, BH10_4.0-4.1, BH12_1.0-1.1, BH07B_2.3-2.4, BH12_0.15-0.25, BH16_0.7-0.8, BH21_0.7-0.8,	BH22_2.2-2.3, BH15_0.4-0.5, BH09_4.0-4.2, BH06_1.0-1.1, QC101, BH07B_1.2-1.3, BH09_0.25-0.35, BH01_1.0-1.1, BH17_1.0-1.1, QC202	27-Aug-2015	18-Sep-2015	✓	28-Aug-2015	18-Sep-2015	✓	
<b>Soil Glass Jar - Unpreserved (EG035T)</b>								
BH21_2.7-2.8, BH17_2.0-2.1,	BH19_2.0-2.2, BH16_2.0-2.1	27-Aug-2015	19-Sep-2015	✓	28-Aug-2015	19-Sep-2015	✓	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b>								
BH05_0.5-0.6, BH08_0.17-0.18,	BH07A_0.5-0.6, BH13_3.6-3.7	27-Aug-2015	03-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
<b>Soil Glass Jar - Unpreserved (EP066)</b>								
BH14_0.45-0.55, BH06_1.0-1.1, BH10_0.15-0.25, BH16_0.7-0.8	BH14_1.8-1.9, BH07B_1.2-1.3, BH01_1.0-1.1,	27-Aug-2015	04-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
<b>EP068A: Organochlorine Pesticides (OC)</b>								
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
BH05_0.5-0.6, BH08_0.17-0.18,	BH07A_0.5-0.6, BH13_3.6-3.7	27-Aug-2015	03-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
<b>Soil Glass Jar - Unpreserved (EP068)</b>								
BH14_0.45-0.55, BH06_1.0-1.1, BH10_0.15-0.25, BH16_0.7-0.8	BH14_1.8-1.9, BH07B_1.2-1.3, BH01_1.0-1.1,	27-Aug-2015	04-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	



Page : 6 of 10  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

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

Method		Sample Date			Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
BH04_2.3-2.4, BH04_0.5-0.6, BH05_0.5-0.6, BH11_3.3-3.4, BH08_1.0-1.1, BH22_2.2-2.3, BH14_4.0-4.1, BH10_4.0-4.1, BH07B_1.2-1.3, BH01_1.0-1.1, BH16_0.7-0.8, BH21_0.7-0.8, QC102	20-Aug-2015	27-Aug-2015	03-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
BH22_4.5-4.7, BH09_4.5-4.6, BH12_3.6-3.7, BH07B_2.3-2.4, BH01_3.8-3.9, BH17_1.0-1.1, QC202	21-Aug-2015	27-Aug-2015	04-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
BH21_3.0-3.1, BH17_2.0-2.1	22-Aug-2015	27-Aug-2015	05-Sep-2015	✓	28-Aug-2015	06-Oct-2015	✓	
<b>EP074D: Fumigants</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BH05_0.5-0.6 BH14_4.0-4.1	20-Aug-2015	27-Aug-2015	27-Aug-2015	✓	27-Aug-2015	27-Aug-2015	✓	
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BH09_4.5-4.6	21-Aug-2015	27-Aug-2015	28-Aug-2015	✓	27-Aug-2015	28-Aug-2015	✓	
<b>EP075(SIM)T: PAH Surrogates</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>								
BH04_1.0-1.1, BH07A_0.5-0.6, BH11_2.3-2.4, BH08_1.0-1.1, BH13_0.4-0.5, QC200	20-Aug-2015	27-Aug-2015	03-Sep-2015	✓	27-Aug-2015	06-Oct-2015	✓	
BH22_2.2-2.3, BH15_0.4-0.5, BH14_4.0-4.1, BH09_4.5-4.6, BH07B_1.2-1.3, BH12_0.15-0.25, BH16_0.7-0.8, QC202	21-Aug-2015	27-Aug-2015	04-Sep-2015	✓	27-Aug-2015	06-Oct-2015	✓	
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>								
BH22_0.8-0.9, BH22_4.5-4.7, BH14_1.8-1.9, BH09_4.0-4.2, QC101, BH09_0.25-0.35, BH01_1.0-1.1, BH21_0.7-0.8	22-Aug-2015	27-Aug-2015	05-Sep-2015	✓	27-Aug-2015	06-Oct-2015	✓	



Page : 7 of 10  
 Work Order : ES1529109  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

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

Method		Sample Date		Extraction / Preparation		Analysis	
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080S: TPH(V)/BTEX Surrogates</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b>							
BH04_2.3-2.4, BH04_0.5-0.6, BH05_0.5-0.6, BH11_3.3-3.4, BH08_1.0-1.1,BH22_2.2-2.3, BH14_4.0-4.1, BH10_4.0-4.1, BH07B_1.2-1.3, BH01_1.0-1.1, BH16_0.7-0.8,QC102	20-Aug-2015	27-Aug-2015	03-Sep-2015	✓	27-Aug-2015	03-Sep-2015	✓
BH22_4.5-4.7, BH09_4.5-4.6, BH12_3.6-3.7, BH07B_2.3-2.4, BH01_3.8-3.9, BH17_1.0-1.1	21-Aug-2015	27-Aug-2015	04-Sep-2015	✓	27-Aug-2015	04-Sep-2015	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b>							
BH21_0.7-0.8, QC102	21-Aug-2015	27-Aug-2015	04-Sep-2015	✓	28-Aug-2015	04-Sep-2015	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b>							
BH21_3.0-3.1, BH17_2.0-2.1	22-Aug-2015	27-Aug-2015	05-Sep-2015	✓	28-Aug-2015	05-Sep-2015	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
<b>Snap Lock Bag - ACM/Asbestos Grab Sample bag (EA200)</b>							
BH22_0.45	21-Aug-2015	----	----	---	27-Aug-2015	17-Feb-2016	✓

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



## 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(were) 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
		QC	Regular	Actual	Expected		
<b>Laboratory Duplicates (DUP)</b>							
Moisture Content	EA055-103	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	14	14.29	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	11	18.18	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	11	18.18	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	11.11	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	3	33.33	10.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.14	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	11.11	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	3	33.33	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.14	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	11.11	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	3	33.33	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.14	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	11	9.09	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	9	11.11	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	3	33.33	5.00	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement





## 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	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. 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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	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 method is compliant with NEPM (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 504,505)
TRH - 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 - C40.
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) Schedule B(3) (Method 502 and 507)
TRH 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.
Asbestos Identification in Bulk Solids	EA200	SOLID	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Preparation Methods		Matrix	Method Descriptions
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.



Page : 10 of 10  
Work Order : ES1529109  
Client : AECOM Australia Pty Ltd  
Project : 60438840/1.1 Burrows

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES1529109

Client : AECOM Australia Pty Ltd
Contact : MR ALEX LATHAM
Address : LEVEL 21, 420 George Street SYDNEY NSW 2000
Laboratory : Environmental Division Sydney
Contact : Barbara Hanna
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail : alex.latham@aecom.com
E-mail : Barbara.Hanna@alsglobal.com
Telephone : +61 02 8934 0000
Telephone : +61 2 8784 8555
Facsimile : +61 02 8934 0001
Facsimile : +61-2-8784 8500
Project : 60438840/1.1 Burrows
Page : 1 of 6
Order number : 60438840/1.1
Quote number : EB2015AECOMAU0580 (EN/004/15)
C-O-C number : ---
QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site : ---
Sampler : KATE PIGRAM, LAUREN GIBB

Dates

Date Samples Received : 24-Aug-2015 4:00 PM
Issue Date : 25-Aug-2015
Client Requested Due Date : 31-Aug-2015
Scheduled Reporting Date : 31-Aug-2015

Delivery Details

Mode of Delivery : Carrier
Security Seal : Intact.
No. of coolers/boxes : 6
Temperature : 2.8'c - Ice present
Receipt Detail :
No. of samples received / analysed : 124 / 52

General Comments

- This report contains the following information:
- Sample Container(s)/Preservation Non-Compliances
- Summary of Sample(s) and Requested Analysis
- Proactive Holding Time Report
- Requested Deliverables
Sample BH06\_1.0-1.1 and BH16\_0.11-0.15 were not received.
Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.
Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).
Asbestos analysis will be conducted by ALS Newcastle.
Sample QC100 and QC201 forwarded to ENVIROLAB
Sample BH10\_1.0-1.1, BH11\_3.6-3.7 and BH-\_0.25-0.30 received extra and place on hold, Please confirm.
Please direct any queries you have regarding this work order to the above ALS laboratory contact.
Analytical work for this work order will be conducted at ALS Sydney.
Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## 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.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-13 OC/OP/PCB	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1529109-001	[ 21-Aug-2015 ]	BH22_0.3-0.4		☐				
ES1529109-003	[ 21-Aug-2015 ]	BH22_0.8-0.9	☐		☐	☐		
ES1529109-004	[ 21-Aug-2015 ]	BH22_2.2-2.3	☐					☐
ES1529109-005	[ 21-Aug-2015 ]	BH22_4.5-4.7	☐					☐
ES1529109-006	[ 21-Aug-2015 ]	BH15_0.4-0.5	☐	☐	☐	☐		
ES1529109-007	[ 21-Aug-2015 ]	BH14_0.45-0.55	☐				☐	
ES1529109-008	[ 21-Aug-2015 ]	BH14_1.8-1.9	☐		☐	☐	☐	
ES1529109-009	[ 21-Aug-2015 ]	BH14_4.0-4.1	☐					
ES1529109-010	[ 21-Aug-2015 ]	BH09_4.0-4.2	☐		☐	☐		
ES1529109-011	[ 21-Aug-2015 ]	BH09_4.5-4.6	☐					
ES1529109-012	[ 21-Aug-2015 ]	BH06_1.0-1.1	☐	☐		☐	☐	
ES1529109-013	[ 21-Aug-2015 ]	BH10_4.0-4.1	☐					
ES1529109-014	[ 21-Aug-2015 ]	QC101	☐		☐	☐		
ES1529109-015	[ 20-Aug-2015 ]	BH04_0.5-0.6	☐					☐
ES1529109-016	[ 20-Aug-2015 ]	BH04_1.0-1.1	☐		☐	☐		
ES1529109-017	[ 20-Aug-2015 ]	BH04_2.3-2.4	☐					
ES1529109-018	[ 20-Aug-2015 ]	BH05_0.5-0.6	☐					
ES1529109-019	[ 20-Aug-2015 ]	BH07A_0.5-0.6	☐	☐	☐	☐	☐	
ES1529109-020	[ 20-Aug-2015 ]	BH11_0.2-0.3	☐		☐	☐		
ES1529109-021	[ 20-Aug-2015 ]	BH11_2.3-2.4	☐					☐
ES1529109-022	[ 20-Aug-2015 ]	BH11_3.3-3.4	☐					
ES1529109-023	[ 20-Aug-2015 ]	BH05_1.0-1.1	☐		☐	☐		
ES1529109-024	[ 20-Aug-2015 ]	BH05_2.3-2.4	☐					
ES1529109-025	[ 20-Aug-2015 ]	BH08_0.17-0.18	☐			☐	☐	
ES1529109-026	[ 20-Aug-2015 ]	BH08_1.0-1.1	☐					☐
ES1529109-027	[ 20-Aug-2015 ]	BH08_2.5-2.6	☐		☐	☐		
ES1529109-028	[ 20-Aug-2015 ]	BH08_3.7-3.8	☐					
ES1529109-029	[ 20-Aug-2015 ]	BH13_0.4-0.5	☐		☐	☐		
ES1529109-030	[ 20-Aug-2015 ]	BH13_3.6-3.7	☐				☐	
ES1529109-031	[ 20-Aug-2015 ]	QC200	☐		☐	☐		
ES1529109-032	[ 21-Aug-2015 ]	BH12_1.0-1.1	☐			☐		
ES1529109-033	[ 21-Aug-2015 ]	BH12_1.8-1.9		☐				
ES1529109-034	[ 21-Aug-2015 ]	BH12_3.6-3.7	☐					
ES1529109-035	[ 21-Aug-2015 ]	BH07B_1.2-1.3	☐	☐			☐	☐
ES1529109-036	[ 21-Aug-2015 ]	BH07B_2.3-2.4	906					



			SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils - SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-13 OC/OP/PCB	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1529109-037	[ 21-Aug-2015 ]	BH10_0.15-0.25	☐			☐	
ES1529109-038	[ 21-Aug-2015 ]	BH09_0.25-0.35	☐	☐	☐		
ES1529109-039	[ 21-Aug-2015 ]	BH12_0.15-0.25	☐	☐	☐		
ES1529109-040	[ 21-Aug-2015 ]	BH01_0.3-0.4		☐			
ES1529109-041	[ 21-Aug-2015 ]	BH01_1.0-1.1	☐			☐	☐
ES1529109-042	[ 21-Aug-2015 ]	BH01_3.8-3.9	☐				
ES1529109-043	[ 21-Aug-2015 ]	BH16_0.7-0.8	☐			☐	☐
ES1529109-044	[ 21-Aug-2015 ]	BH17_1.0-1.1	☐				
ES1529109-045	[ 21-Aug-2015 ]	BH21_0.7-0.8	☐	☐			☐
ES1529109-046	[ 21-Aug-2015 ]	QC202	☐				☐
ES1529109-047	[ 21-Aug-2015 ]	QC102	☐				
ES1529109-048	[ 22-Aug-2015 ]	BH21_2.7-2.8	☐				
ES1529109-049	[ 22-Aug-2015 ]	BH21_3.0-3.1	☐				
ES1529109-050	[ 22-Aug-2015 ]	BH19_2.0-2.2	☐				
ES1529109-051	[ 22-Aug-2015 ]	BH17_2.0-2.1	☐				☐
ES1529109-052	[ 22-Aug-2015 ]	BH16_2.0-2.1	☐				

Matrix: **SOIL**

Laboratory sample ID      Client sampling date / time      Client sample ID

			(On Hold) SOIL No analysis requested	SOIL - EP074DEFG (solids) VOC - Fumigants, Hal Aliphatics, Hal Aromatics, SIM - Phenols only	SOIL - S-04 TRH/BTEXN	SOIL - S-05 TRH/BTEXN/8 Metals	SOIL - S-19 TRH/BTEXN/Ph/OC/OP/PCB/8 metals	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1529109-009	[ 21-Aug-2015 ]	BH14_4.0-4.1		☐	☐			
ES1529109-011	[ 21-Aug-2015 ]	BH09_4.5-4.6		☐				☐
ES1529109-013	[ 21-Aug-2015 ]	BH10_4.0-4.1				☐		
ES1529109-017	[ 20-Aug-2015 ]	BH04_2.3-2.4				☐		
ES1529109-018	[ 20-Aug-2015 ]	BH05_0.5-0.6		☐			☐	
ES1529109-022	[ 20-Aug-2015 ]	BH11_3.3-3.4			☐			
ES1529109-024	[ 20-Aug-2015 ]	BH05_2.3-2.4				☐		
ES1529109-028	[ 20-Aug-2015 ]	BH08_3.7-3.8				☐		
ES1529109-034	[ 21-Aug-2015 ]	BH12_3.6-3.7			☐			
ES1529109-036	[ 21-Aug-2015 ]	BH07B_2.3-2.4				☐		
ES1529109-042	[ 21-Aug-2015 ]	BH01_3.8-3.9			☐			
ES1529109-044	[ 21-Aug-2015 ]	BH17_1.0-1.1				☐		
ES1529109-047	[ 21-Aug-2015 ]	QC102			☐			
ES1529109-048	[ 22-Aug-2015 ]	BH21_2.7-2.8	907			☐		



			(On Hold) SOIL No analysis requested	SOIL - EP074DEFG (solids)	VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	SOIL - EP075 SIM Phenols only SIM - Phenols only	SOIL - S-04 TRH/BTEXN	SOIL - S-05 TRH/BTEXN/8 Metals	SOIL - S-19 TRH/BTEXN/P/Ph/OC/OP/PCB/8 metals	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1529109-049	[ 22-Aug-2015 ]	BH21_3.0-3.1					☐			
ES1529109-050	[ 22-Aug-2015 ]	BH19_2.0-2.2						☐		
ES1529109-052	[ 22-Aug-2015 ]	BH16_2.0-2.1						☐		
ES1529109-053	[ 21-Aug-2015 ]	BH22_1.3-1.4	☐							
ES1529109-054	[ 21-Aug-2015 ]	BH22_1.7-1.8	☐							
ES1529109-055	[ 21-Aug-2015 ]	BH22_3.9-4.0	☐							
ES1529109-056	[ 21-Aug-2015 ]	BH14_1.0-1.1	☐							
ES1529109-057	[ 21-Aug-2015 ]	BH14_3.0-3.1	☐							
ES1529109-058	[ 21-Aug-2015 ]	BH09_1.5-1.6	☐							
ES1529109-059	[ 21-Aug-2015 ]	BH09_2.2-2.3	☐							
ES1529109-060	[ 21-Aug-2015 ]	BH09_3.0-3.1	☐							
ES1529109-062	[ 21-Aug-2015 ]	BH10_2.1-2.2	☐							
ES1529109-063	[ 21-Aug-2015 ]	BH10_3.0-3.1	☐							
ES1529109-064	[ 20-Aug-2015 ]	BH04_0.15-0.25	☐							
ES1529109-065	[ 20-Aug-2015 ]	BH04_1.5-1.6	☐							
ES1529109-066	[ 20-Aug-2015 ]	BH04_2.7-2.8	☐							
ES1529109-067	[ 20-Aug-2015 ]	BH04_3.5-3.6	☐							
ES1529109-068	[ 20-Aug-2015 ]	BH05_0.25-0.35	☐							
ES1529109-069	[ 20-Aug-2015 ]	BH08_4.4-4.5	☐							
ES1529109-070	[ 20-Aug-2015 ]	BH07A_0.15-0.25	☐							
ES1529109-071	[ 20-Aug-2015 ]	BH07_0.4-0.5	☐							
ES1529109-072	[ 20-Aug-2015 ]	BH11_0.5-0.6	☐							
ES1529109-073	[ 20-Aug-2015 ]	BH11_1.0-1.1	☐							
ES1529109-074	[ 20-Aug-2015 ]	BH11_2.0-2.1	☐							
ES1529109-075	[ 20-Aug-2015 ]	BH11_3.0-3.1	☐							
ES1529109-076	[ 20-Aug-2015 ]	BH13_0.2-0.3	☐							
ES1529109-077	[ 20-Aug-2015 ]	BH05_1.5-1.6	☐							
ES1529109-078	[ 20-Aug-2015 ]	BH05_2.7-2.8	☐							
ES1529109-079	[ 20-Aug-2015 ]	BH05_3.0-3.1	☐							
ES1529109-080	[ 20-Aug-2015 ]	BH05_37-3.8	☐							
ES1529109-081	[ 20-Aug-2015 ]	BH08_0.5-0.6	☐							
ES1529109-082	[ 20-Aug-2015 ]	BH08_4.0-4.2	☐							
ES1529109-083	[ 20-Aug-2015 ]	BH13_0.6-0.7	☐							
ES1529109-084	[ 20-Aug-2015 ]	BH13_1.0-1.1	☐							
ES1529109-085	[ 20-Aug-2015 ]	BH13_1.5-1.6	☐							
ES1529109-086	[ 20-Aug-2015 ]	BH13_2.7-2.8	☐							
ES1529109-087	[ 20-Aug-2015 ]	BH13_3.0-3.1	☐							
ES1529109-088	[ 21-Aug-2015 ]	BH07B_0.2-0.3	☐							
ES1529109-089	[ 21-Aug-2015 ]	BH07B_0.5-0.6	☐							
ES1529109-090	[ 21-Aug-2015 ]	BH07B_0.8-0.9	☐							
ES1529109-091	[ 21-Aug-2015 ]	BH07B_1.0-1.1	☐							



			(On Hold) SOIL No analysis requested	SOIL - EP074DEFG (solids)	VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	SOIL - EP075 SIM Phenols only	SIM - Phenols only	SOIL - S-04	TRH/BTEXN	SOIL - S-05	TRH/BTEXN/8 Metals	SOIL - S-19	TRH/BTEXN/P/Ph/OC/OP/PCB/8 metals	SOIL - S-27	TRH/BTEXN/PAH/Phenols/8Metals
ES1529109-092	[ 21-Aug-2015 ]	BH12_1.5-1.6	<input type="checkbox"/>												
ES1529109-093	[ 21-Aug-2015 ]	BH12_3.7-3.8	<input type="checkbox"/>												
ES1529109-094	[ 21-Aug-2015 ]	BH07B_1.6-1.7	<input type="checkbox"/>												
ES1529109-095	[ 21-Aug-2015 ]	BH07B_2.8-2.9	<input type="checkbox"/>												
ES1529109-096	[ 21-Aug-2015 ]	BH10_0.4-0.5	<input type="checkbox"/>												
ES1529109-097	[ 21-Aug-2015 ]	BH09_0.15-0.25	<input type="checkbox"/>												
ES1529109-098	[ 21-Aug-2015 ]	BH09_0.4-0.5	<input type="checkbox"/>												
ES1529109-099	[ 21-Aug-2015 ]	BH12_0.5-0.6	<input type="checkbox"/>												
ES1529109-100	[ 21-Aug-2015 ]	BH12_0.6-0.7	<input type="checkbox"/>												
ES1529109-101	[ 21-Aug-2015 ]	BH01_2.0-2.1	<input type="checkbox"/>												
ES1529109-102	[ 21-Aug-2015 ]	BH01_2.8-3.0	<input type="checkbox"/>												
ES1529109-104	[ 21-Aug-2015 ]	BH16_1.0-1.1	<input type="checkbox"/>												
ES1529109-105	[ 21-Aug-2015 ]	BH16_0.5-0.6	<input type="checkbox"/>												
ES1529109-106	[ 21-Aug-2015 ]	BH17_0.7-0.8	<input type="checkbox"/>												
ES1529109-107	[ 21-Aug-2015 ]	BH17_0.2-0.3	<input type="checkbox"/>												
ES1529109-108	[ 21-Aug-2015 ]	BH19_0.11-0.15	<input type="checkbox"/>												
ES1529109-109	[ 21-Aug-2015 ]	BH21_0.25-0.35	<input type="checkbox"/>												
ES1529109-110	[ 21-Aug-2015 ]	BH21_0.20-0.25	<input type="checkbox"/>												
ES1529109-111	[ 21-Aug-2015 ]	BH21_1.0-1.1	<input type="checkbox"/>												
ES1529109-112	[ 22-Aug-2015 ]	BH21_3.8-3.9	<input type="checkbox"/>												
ES1529109-113	[ 22-Aug-2015 ]	BH19_0.6-0.7	<input type="checkbox"/>												
ES1529109-114	[ 22-Aug-2015 ]	BH19_1.0-1.1	<input type="checkbox"/>												
ES1529109-115	[ 22-Aug-2015 ]	BH19_1.4-1.5	<input type="checkbox"/>												
ES1529109-116	[ 22-Aug-2015 ]	BH19_3.0-3.1	<input type="checkbox"/>												
ES1529109-117	[ 22-Aug-2015 ]	BH19_3.8-3.9	<input type="checkbox"/>												
ES1529109-118	[ 22-Aug-2015 ]	BH16_3.0-3.1	<input type="checkbox"/>												
ES1529109-119	[ 22-Aug-2015 ]	BH16_4.0-4.1	<input type="checkbox"/>												
ES1529109-120	[ 22-Aug-2015 ]	BH16_5.0-5.1	<input type="checkbox"/>												
ES1529109-121	[ 22-Aug-2015 ]	QC103	<input type="checkbox"/>												
ES1529109-122	[ 21-Aug-2015 ]	BH09_4.2-4.3	<input type="checkbox"/>												
ES1529109-123	[ 21-Aug-2015 ]	BH12_3.2-3.3	<input type="checkbox"/>												
ES1529109-124	[ 21-Aug-2015 ]	BH10_1.0-1.1	<input type="checkbox"/>												
ES1529109-125	[ 20-Aug-2015 ]	BH11_3.6-3.7	<input type="checkbox"/>												
ES1529109-126	[ 21-Aug-2015 ]	BH19_0.25-0.30	<input type="checkbox"/>												



Laboratory sample ID	Client sampling date / time	Client sample ID	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding)
ES1529109-002	[ 21-Aug-2015 ]	BH22_0.45	☐

Matrix: **SOLID**

### Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

### Requested Deliverables

#### ALEX LATHAM

- \*AU Certificate of Analysis - NATA (COA) Email alex.latham@aecom.com
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email alex.latham@aecom.com
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email alex.latham@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email alex.latham@aecom.com
- A4 - AU Tax Invoice (INV) Email alex.latham@aecom.com
- Chain of Custody (CoC) (COC) Email alex.latham@aecom.com
- EDI Format - ENMRG (ENMRG) Email alex.latham@aecom.com
- EDI Format - ESDAT (ESDAT) Email alex.latham@aecom.com
- EDI Format - HLAPro (HLAPro) Email alex.latham@aecom.com
- EDI Format - XTab (XTAB) Email alex.latham@aecom.com

#### AP\_CUSTOMER SERVICE ANZ

- A4 - AU Tax Invoice (INV) Email AP\_CustomerService.ANZ@aecom.com

#### KATE PIGRAM

- \*AU Certificate of Analysis - NATA (COA) Email kate.pigram@aecom.com
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email kate.pigram@aecom.com
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email kate.pigram@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email kate.pigram@aecom.com
- A4 - AU Tax Invoice (INV) Email kate.pigram@aecom.com
- Chain of Custody (CoC) (COC) Email kate.pigram@aecom.com
- EDI Format - ENMRG (ENMRG) Email kate.pigram@aecom.com
- EDI Format - ESDAT (ESDAT) Email kate.pigram@aecom.com
- EDI Format - HLAPro (HLAPro) Email kate.pigram@aecom.com
- EDI Format - XTab (XTAB) Email kate.pigram@aecom.com

#### LAUREN GIBB

- \*AU Certificate of Analysis - NATA (COA) Email Lauren.Gibb@aecom.com
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email Lauren.Gibb@aecom.com
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email Lauren.Gibb@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email Lauren.Gibb@aecom.com
- A4 - AU Tax Invoice (INV) Email Lauren.Gibb@aecom.com
- Chain of Custody (CoC) (COC) Email Lauren.Gibb@aecom.com
- EDI Format - ENMRG (ENMRG) Email Lauren.Gibb@aecom.com
- EDI Format - ESDAT (ESDAT) Email Lauren.Gibb@aecom.com
- EDI Format - HLAPro (HLAPro) Email Lauren.Gibb@aecom.com
- EDI Format - XTab (XTAB) Email Lauren.Gibb@aecom.com



148E W OF (11)

**Chain of Custody**



AECOM - Sydney  
Level 21, 420 George Street,  
Sydney, NSW 2000

Tel: (02) 8934 0000  
Fax: (02) 8934 0001  
E-mail: Alex.Latham@aecom.com;  
Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

**Laboratory Details**

Lab. Name: ALS Sydney  
Lab. Address:  
Contact Name:  
Lab. Ref:  
Preliminary Report by:  
Final Report by:  
Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb  
AECOM Project No: 604388-40/1.1

**Specifications:**

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.17
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:
7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request
			soil	water	other	filtered	acid	ice		
1	BH22_0.3-0.4	21/08/2015	X					X		
2	BH22_0.45	21/08/2015	X					X		
3	BH22_0.8-0.9	21/08/2015	X					X		
4	BH22_1.3-1.4	21/08/2015	X					X		
5	BH22_1.7-1.8	21/08/2015	X					X		
6	BH22_2.2-2.3	21/08/2015	X					X		
7	BH22_3.9-4.0	21/08/2015	X					X		
8	BH22_4.5-4.7	21/08/2015	X					X		
9	BH15_0.4-0.5	21/08/2015	X					X		
10	BH14_0.45-0.55	21/08/2015	X					X		
11	BH14_1.0-1.1	21/08/2015	X					X		
12	BH14_1.8-1.9	21/08/2015	X					X		

\* Metals Required (Delete elements not required): As Cd Cr Cu Ni Pb Zn Hg

Relinquished by: Kate Pigram Date: 24/08/2015  
 Received by: [Signature] Date: \_\_\_\_\_

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Subcon / Forward Lab / Split WO  
 Lab / Analysis: NEWCASTLE: ASBESTOS, EMIPDAS:  
 Organised By / Date: Frame 21/08/2015  
 Relinquished By / Date: \_\_\_\_\_  
 Connote / Courier: \_\_\_\_\_  
 WO No: \_\_\_\_\_  
 Attach By PO / Internal Sheet: \_\_\_\_\_

Environmental Division  
 Sydney  
 Work Order Reference  
**ES1529109**



Telephone: + 61-2-8764 8555

Lab Report No. \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Date: 24/8/15

Printed copies of this document are uncontrolled

PAGE 2 OF 11



# Chain of Custody

AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000

Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

**Laboratory Details**  
 Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref:

Tel:  
 Fax:  
 Preliminary Report by:  
 Final Report by:  
 Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb      AECOM Project No: 60438840/1.1

Project Name: Burrows      PO No.

- Specifications:**
- 1. Urgent TAT required? (please circle: 24hr 48hr days)
  - 2. Fast TAT Guarantee Required?
  - 3. Is any sediment layer present in waters to be excluded from extractions?
  - 4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
  - 5. Special storage requirements? (details: \_\_\_\_\_)
  - 6. Shell Quality Partnership:
  - 7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request																									
			soil	water	other	fitted	acid	ice		other	TRH C6-C40, BTEXN	PAHs	8 Metals	OCP, OPP, PCB	Asbestos in Soil(Absence/Presence)	ACM Fragment	Phenols	VHCs	HOLD	Other															
57	BH14_3.0-3.1	21/08/2015	X						X																										
58	BH14_4.0-4.1	21/08/2015	X						X																										
59	BH09_1.5-1.6	21/08/2015	X						X																										
60	BH09_2.2-2.3	21/08/2015	X						X																										
61	BH09_3.0-3.1	21/08/2015	X						X																										
62	BH09_4.0-4.2	21/08/2015	X						X																										
63	BH09_4.2-4.3	21/08/2015	X						X																										
64	BH09_4.5-4.6	21/08/2015	X						X																										
65	BH06_0.7-0.8	21/08/2015	X						X																										
66	BH06_1.0-1.1	21/08/2015	X						X																										
67	BH10_2.1-2.2	21/08/2015	X						X																										
68	BH10_3.0-3.1	21/08/2015	X						X																										

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram      Date: 24/08/2015      Signed: *[Signature]*      Date: 24/08/2015

Received by: *[Signature]*      Date: *[Signature]*      Signed: *[Signature]*      Date: 24/08/15

Printed copies of this document are uncontrolled

# Chain of Custody

AECOM - Sydney  
Level 21, 420 George Street,  
Sydney, NSW 2000

Tel: (02) 8934 0000  
Fax: (02) 8934 0001  
E-mail: Alex.Latham@aecom.com;  
Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

## Laboratory Details

Lab. Name: ALS Sydney  
Lab. Address:  
Contact Name:  
Lab. Ref:  
Preliminary Report by:  
Final Report by:  
Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb  
AECOM Project No: 60438840/1.1

Project Name: Burrows  
PO No.

Analysis Request

Yes (tick)

TRH C6-C40, BTEXN

PAHs

B Metals

OCF, OPP, PCB

Asbestos in Soil(Absence/Presence)

ACM Fragment

Phenols

VHCS

Other

Please forward sample QC100 to Envirolab with copy of COC

Lab Report No

ESVY ID

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

Signed: *[Signature]*

Received by: *[Signature]*

Date: 24/08/15

1. Urgent TAT required? (please circle): 24hr 48hr \_\_\_\_\_ days

2. Fast TAT Guarantee Required?

3. Is any sediment layer present in waters to be excluded from extractions?

4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?

5. Special storage requirements? (details: \_\_\_\_\_)

6. Shell Quality Partnership:

7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request																		
			soil	water	other	filled	acid	ice		other	TRH C6-C40, BTEXN	PAHs	B Metals	OCF, OPP, PCB	Asbestos in Soil(Absence/Presence)	ACM Fragment	Phenols	VHCS	Other									
13	BH10 4.0-4.1	21/08/2015	X					X	1 x 250ml soil jar	X																		
14	QC100	21/08/2015	X					X	1 x 250ml soil jar	X																		
15	BH04 0.15-0.25	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
16	BH04 0.5-0.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
17	BH04 1.0-1.1	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
18	BH04 1.5-1.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
19	BH04 2.3-2.4	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
20	BH04 2.7-2.8	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
21	BH04 3.5-3.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
22	BH05 0.25-0.35	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		
23	BH05 0.5-0.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																		

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram  
Signed: *[Signature]*  
Date: 24/08/2015

Received by: *[Signature]*  
Signed: *[Signature]*  
Date: 24/08/2015

PAGE 4 OF 11



# Chain of Custody

AECOM - Sydney  
Level 21, 420 George Street,  
Sydney, NSW 2000

Tel: (02) 8934 0000  
Fax: (02) 8934 0001  
E-mail: Alex.Latham@aecom.com;  
Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

## Laboratory Details

Lab. Name: ALS Sydney  
Lab. Address:  
Contact Name:  
Lab. Ref:  
Tel:  
Fax:  
Preliminary Report by:  
Final Report by:  
Lab Quote No: ENJ004/15

Sampled By: Kate Pigram & Lauren Gibb AECOM Project No: 60438840/1.1

Project Name: Burrows

PO No.

Analysis Request

Other

Yes (tick)

TRH C6-C40, BTEXN

PAHs

8 Metals

OCP, OPP, PCB

Asbestos in Soil/Absence/Presence

ACM Fragment

Phenols

VHCS

HOLD

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_ days)

2. Fast TAT Guarantee Required?

3. Is any sediment layer present in waters to be excluded from extractions?

4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?

5. Special storage requirements? (details:)

6. Shell Quality Partnership:

7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)
			soil	water	other	filled	acid	ice	
69	BH08_4.4-4.5	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
70	BH07A_0.15-0.25	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
71	BH07A_0.5-0.6	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
72	BH07_0.4-0.5	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
73	BH11_0.2-0.3	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
74	BH11_0.5-0.6	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
75	BH11_1.0-1.1	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
76	BH11_2.0-2.1	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
77	BH11_2.3-2.4	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
78	BH11_3.0-3.1	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
79	BH11_3.3-3.4	20/08/2015	X						1 x 250 mL soil jar & 1 x bag
80	BH13_0.2-0.3	20/08/2015	X						1 x 250 mL soil jar & 1 x bag

\* Metals Required (Détails éléments not required)

As Cd Cr Cu Ni Pb Zn Hg

Comments: \* Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram

Signed: *[Signature]*

Date: 24/08/2015

Relinquished by: *[Signature]*

Signed: *[Signature]*

Date: 24/08/2015

Received by: *[Signature]*

Signed: *[Signature]*

Date: 24/08/2015

Received by: *[Signature]*

Signed: *[Signature]*

Date: 24/08/2015

Printed copies of this document are uncontrolled

PAGE 5 OF 11

# Chain of Custody

AECOM - Sydney  
Level 21, 420 George Street,  
Sydney, NSW 2000

Tel: (02) 8934 0000  
Fax: (02) 8934 0001  
E-mail: Alex.Latham@aecom.com;  
Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

## Laboratory Details

Lab. Name: ALS Sydney  
Lab. Address:  
Contact Name:  
Lab. Ref:  
Tel:  
Fax:  
Preliminary Report by:  
Final Report by:  
Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb  
AECOM Project No: 60438840/1.1  
Project Name: Burrows  
PO No.

## Specifications:

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:
7. Report Format: Fax Hardcopy Email:

## Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request						Other									
			soil	water	other	filled	acid	ice		other	TRH C6-C40, BTEXN	PAHs	8 Metals	OCP, OPP, PCB	Asbestos in Soil(Absence/Presence)		ACM Fragment	Phenols	VHCS	HOLD					
77	BH05_1.0-1.1	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X															
78	BH05_1.5-1.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag												X				
79	BH05_2.3-2.4	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
80	BH05_2.7-2.8	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
81	BH05_3.0-3.1	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
82	BH05_3.7-3.8	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
83	BH08_0.17-0.18	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
84	BH08_0.5-0.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
85	BH08_1.0-1.1	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
86	BH08_2.5-2.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
87	BH08_3.7-3.8	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																
88	BH08_4.0-4.2	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag																

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram Signed: \_\_\_\_\_ Date: 24/08/2015  
 Relinquished by: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: 24/08/2015  
 Received by: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: 24/08/2015

Printed copies of this document are uncontrolled



### Chain of Custody

AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000

Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

**Laboratory Details**  
 Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref: EN/004/15

Tel:  
 Fax:  
 Preliminary Report by:  
 Final Report by:

Sampled By: Kate Pigram & Lauren Gibb      AECOM Project No: 60438840/1.1      PO No.

**Specifications:**

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:
7. Report Format:      Fax      Hardcopy      Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request	Lab Report No.	Entry ID
			soil	water	other	fit/d	acid	ice				
83	BH13_0.4-0.5	20/08/2015	X					X				
84	BH13_0.6-0.7	20/08/2015	X					X				
85	BH13_1.0-1.1	20/08/2015	X					X				
86	BH13_1.5-1.6	20/08/2015	X					X				
87	BH13_2.7-2.8	20/08/2015	X					X				
88	BH13_3.0-3.1	20/08/2015	X					X				
89	BH13_3.6-3.7	20/08/2015	X					X				
90	QC200	20/08/2015	X					X				
91	BH07B_0.2-0.3	21/08/2015	X					X				
	BH07B_0.5-0.6	21/08/2015	X					X				
	BH07B_0.8-0.9	21/08/2015	X					X				
	BH07B_1.0-1.1	21/08/2015	X					X				

\* Metals Required (Delete elements not required)  
 As Cd Cr Cu Ni Pb Zn Hg

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram      Signed: *[Signature]*      Date: 24/08/2015

Relinquished by: *[Signature]*      Signed: *[Signature]*      Date: 24/8/15

Received by: *[Signature]*      Signed: *[Signature]*      Date: 24/8/15



### Chain of Custody

AECOM - Sydney Level 21, 420 George Street,  Sydney, NSW 2000	Tel: (02) 8934 0000 Fax: (02) 8934 0001 E-mail: Alex.Latham@aecom.com; Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com	Laboratory Details Lab. Name: ALS Sydney Lab. Address: Contact Name: Lab. Ref.:
AECOM Project No: 60438840/1.1		
Project Name: Burrows		
PO No.		
Lab Quote No: EN/004/15		

**Specifications:**

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:

Yes (tick)	Analysis Request								
	TRH C6-C40, BTEXN	PAHs	8 Metals	OC, OPP, PCB	Asbestos in Soil/Absence/Presence	ACM Fragment	Phenols	VHCS	Other
	X								
			X						
				X					
							X		

Container (No. & type)	TRH C6-C40, BTEXN	PAHs	8 Metals	OC, OPP, PCB	Asbestos in Soil/Absence/Presence	ACM Fragment	Phenols	VHCS	Other
1 x 250 mL soil jar & 1 x bag			X						
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag					X				
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag				X					
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag	X								
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag	X	X	X	X					
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar & 1 x bag									
1 x 250 mL soil jar	X	X	X	X		X	X		

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram Date: 24/08/2015  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Signed: \_\_\_\_\_ Date: 24/8/15

Printed copies of this document are uncontrolled



### Chain of Custody

**AECOM - Sydney**  
 Level 21, 420 George Street,  
 Sydney, NSW 2000  
 Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

**Laboratory Details**  
 Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref:  
 Tel:  
 Fax:  
 Preliminary Report by:  
 Final Report by:  
 Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb  
 AECOM Project No: 60438840/1.1  
 Project Name: Burrows  
 PO No.

#### Specifications:

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:
7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Yes (tick)
			soil	water	other	filled	acid	ice		
94	BH07B_1.2-1.3	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
94	BH07B_1.6-1.7	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
94	BH07B_2.3-2.4	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
94	BH07B_2.8-2.9	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
94	BH10_0.15-0.25	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
96	BH10_0.4-0.5	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
97	BH09_0.15-0.25	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
98	BH09_0.25-0.35	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
98	BH09_0.4-0.5	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
99	BH12_0.15-0.25	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
99	BH12_0.5-0.6	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	
100	BH12_0.6-0.7	21/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	

\* Metals Required (Delete elements not required):  
 As Cd Cr Cu Ni Pb Zn Hg  
 Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram  
 Signed: \_\_\_\_\_ Date: 24/08/2015  
 Relinquished by: \_\_\_\_\_ Date: 24/08/2015

Received by: \_\_\_\_\_  
 Signed: \_\_\_\_\_ Date: 24/08/15  
 Received by: \_\_\_\_\_ Date: 24/08/15

Printed copies of this document are uncontrolled





Chain of Custody

AECOM - Sydney  
Level 21, 420 George Street,  
Sydney, NSW 2000

Tel: (02) 8934 0000  
Fax: (02) 8934 0001  
E-mail: Alex.Latham@aecom.com;  
Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

Laboratory Details

Lab. Name: ALS Sydney  
Lab. Address:  
Contact Name:  
Lab. Ref:  
Tel:  
Fax:  
Preliminary Report by:  
Final Report by:  
Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb AECOM Project No: 60438840/1.1

Project Name: Burrows PO No.

Specifications:

- 1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_ days)
- 2. Fast TAT Guarantee Required?
- 3. Is any sediment layer present in waters to be excluded from extractions?
- 4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
- 5. Special storage requirements? (details: \_\_\_\_\_)
- 6. Shell Quality Partnership:
- 7. Report Format Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Yes (tick)
			soil	water	other	filled	acid	ice		
(40) BH01_0.3-0.4		21/08/2015	X					X		
(41) BH01_1.0-1.1		21/08/2015	X					X		
101 BH01_2.0-2.1		21/08/2015	X					X		
102 BH01_2.8-3.0		21/08/2015	X					X		
(42) BH01_3.8-3.9		21/08/2015	X					X		
103 BH16_0.11-0.15		21/08/2015	X					X		
(43) BH16_0.7-0.8		21/08/2015	X					X		
104 BH16_1.0-1.1		21/08/2015	X					X		
105 BH16_0.5-0.6		21/08/2015	X					X		
106 BH17_0.7-0.8		21/08/2015	X					X		
(44) BH17_1.0-1.1		21/08/2015	X					X		
107 BH17_0.2-0.3		21/08/2015	X					X		

\* Metals Require (Dedicate elements not required)

As Cd Cr Cu Ni Pb Zn Hg

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram Signed: \_\_\_\_\_ Date: 24/08/2015  
 Received by: \_\_\_\_\_ Signed: \_\_\_\_\_ Date: 21/8/15

Analysis Request

Analysis Request	TRH C6-C40, BTEXN	PAHs	8 Metals	OCP, OPP, PCB	Asbestos in Soil/Absence/Presence	ACM Fragment	Phenols	VHCS	Other
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				
	X	X	X	X	X				

**Chain of Custody**

AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000  
 Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

**Laboratory Details**

Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref: EN/004/15  
 Preliminary Report by:  
 Final Report by:  
 Lab. Quote No:

Sampled By: Kate Pigram & Lauren Gibb  
 AECOM Project No: 60438840/1.1  
 Project Name: Burrows  
 PO No.

**Specifications:**

1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership: \_\_\_\_\_
7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Yes (tick)	Analysis Request	Lab Report No	ENR/D
			soil	water	other	filled	acid	ice					
108	BH19_0.11-0.15	21/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
109	BH21_0.25-0.35	21/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
110	BH21_0.20-0.25	21/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
111	BH21_0.7-0.8	21/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
112	BH21_1.0-1.1	21/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
113	QC202	21/08/2015	X					X	1 x 250ml soil jar				
114	QC102	21/08/2015	X					X	1 x 250ml soil jar				
115	BH21_2.7-2.8	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
116	BH21_3.0-3.1	22/08/2015	X					X	1 x 250ml soil jar				
117	BH21_3.8-3.9	22/08/2015	X					X	1 x 250ml soil jar				
118	BH19_0.6-0.7	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag				
119	BH19_1.0-1.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag				

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Relinquished by: Kate Pigram  
 Signed: [Signature]  
 Date: 24/08/2015

Relinquished by: [Signature]  
 Signed: [Signature]  
 Date: 24/08/15



### Chain of Custody

AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000

Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

### Laboratory Details

Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref:

Tel:  
 Fax:  
 Preliminary Report by:  
 Final Report by:

Lab Quote No: EN/004/15

AECOM Project No: 60438840/1.1

Project Name: Burrows  
 PO No:

### Specifications:

1. Urgent TAT required? (please circle: 24hr 48hr days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NIEPM 5.1.1?
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership:

7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Yes (tick)
			soil	water	other	filled	acid	ice		
115	BH19_1.4-1.5	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
116	BH19_2.0-2.2	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
117	BH19_3.0-3.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
118	BH17_2.0-2.1	22/08/2015	X					X	1 x 250ml soil jar	
119	BH16_2.0-2.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
120	BH16_3.0-3.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
121	BH16_4.0-4.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
	BH16_5.0-5.1	22/08/2015	X					X	1 x 250ml soil jar & 1 x bag	
	QC103	22/08/2015	X					X	1 x 250ml soil jar	

Relinquished by: Kate Pigram  
 Relinquished Date: 24/08/2015  
 Relinquished by: *[Signature]*  
 Relinquished Date: 24/08/2015

Received by: *[Signature]*  
 Received Date: 24/08/2015

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc

Printed copies of this document are uncontrolled

Rec'd Ned 24/08/2015  
 BH10-1-0 1-1 21-8-15  
 BH11-3-6-3-7 20-8-15  
 BH12-0-25-0-30 21-8-15

---

**Fadi Soro**

**From:** Barbara Hanna  
**Sent:** Monday, 24 August 2015 3:56 PM  
**To:** Fadi Soro; Wael Saleh  
**Subject:** FW: Burrows COCs 60438840  
**Attachments:** 60438840\_Signed COCs\_20150804.pdf

COC's for AECOM samples on hold

Kind Regards

**Barbara Hanna**

Client Services Manager  
ALS | Environmental Division

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

**N** +61 2 8784 8555  
**F** +61 2 8784 8500

[www.alsglobal.com](http://www.alsglobal.com)

**We are keen for your feedback! Please click here for your 1 question survey**



[EnviroMail™ 94 - PFOS PFOA and Why do my laboratory results not agree](#)

[EnviroMail™ 93 - Quality Assurance, Quality Control and DQI Reporting to Maximise Data Quality](#)

[EnviroMail™ 92 - Western Australian - Small Community Sampling Grid](#)

[EnviroMail™ 52 \[UPDATE\] Sampling and Analysis of Soil Vapour using Canisters](#)

[EnviroMail™ 00 - Summary of all EnviroMails™ by Category](#)

 **Subscribe to EnviroMail™**  **Follow us on LinkedIn**

---

**From:** Pigram, Kate [mailto:Kate.Pigram@aecom.com]

**Sent:** Monday, 24 August 2015 3:30 PM

**To:** Barbara Hanna  
**Cc:** Latham, Alex  
**Subject:** Burrows COCs 60438840

Hi Barbara,

Can you please forward the attached populated COCs to sample receipt for processing?

6 x eskies were picked up from Site (1-3 Burrows Road, Alexandria) on Friday afternoon (21 August), and 3 x eskies were picked up from AECOM Sydney Office today (24 August).

Kind Regards,

**Kate Pigram**  
Senior Environmental Scientist  
D +61 2 8934 0649 M +61 400 849 797  
Kate.Pigram@aecom.com

**AECOM**  
Level 21, 420 George Street, Sydney, NSW 2000  
PO Box Q410, QVB PO, Sydney, NSW, 1230  
T +61 2 8934 0000 F +61 2 8934 0001  
www.aecom.com

 Please consider the environment before printing this email.

ALS Group: [Click here](#) to report this email as spam.

**CERTIFICATE OF ANALYSIS**

**133208**

**Client:**

**AECOM Australia Pty Ltd (Sydney)**  
PO Box Q410  
QVB Post Office  
Sydney  
NSW 1230

**Attention:** Alex Latham, Kate Pigram, Lauren Gibb

**Sample log in details:**

Your Reference:	<b>60438840/1.1, Burrows</b>
No. of samples:	2 Soils
Date samples received / completed instructions received	25/08/15 / 25/08/15

**Analysis Details:**

Please refer to the following pages for results, methodology summary and quality control data. Samples were analysed as received from the client. Results relate specifically to the samples as received. Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

***Please refer to the last page of this report for any comments relating to the results.***

**Report Details:**

Date results requested by: / Issue Date:	1/09/15 / 1/09/15
Date of Preliminary Report:	Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with \*.**

**Results Approved By:**



---

Jacinta Hurst  
Laboratory Manager

VHC's in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	133208-2 QC201 21/08/2015 Soil
Date extracted	-	26/08/2015
Date analysed	-	27/08/2015
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
carbon tetrachloride	mg/kg	<1
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
bromoform	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
bromobenzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1

VHC's in soil		
Our Reference:	UNITS	133208-2
Your Reference	-----	QC201
Date Sampled	-----	21/08/2015
Type of sample		Soil
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
<i>Surrogate</i> Dibromofluorometha	%	96
<i>Surrogate</i> aaa-Trifluorotoluene	%	77
<i>Surrogate</i> Toluene-d <sub>8</sub>	%	98
<i>Surrogate</i> 4-Bromofluorobenzene	%	94



vTRH(C6-C10)/BTEXN in Soil	UNITS	133208-1	133208-2
Our Reference:	-----	QC100	QC201
Your Reference	-----	21/08/2015	21/08/2015
Date Sampled		Soil	Soil
Type of sample			
Date extracted	-	26/08/2015	26/08/2015
Date analysed	-	27/08/2015	27/08/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	77

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	133208-1	133208-2
Your Reference	-----	QC100	QC201
Date Sampled	-----	21/08/2015	21/08/2015
Type of sample		Soil	Soil
Date extracted	-	26/08/2015	26/08/2015
Date analysed	-	26/08/2015	26/08/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	380
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	420
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	730
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	170
Surrogate o-Terphenyl	%	95	113

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	133208-1 QC100 21/08/2015 Soil	133208-2 QC201 21/08/2015 Soil
Date extracted	-	26/08/2015	26/08/2015
Date analysed	-	26/08/2015	26/08/2015
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.5
Anthracene	mg/kg	<0.1	0.2
Fluoranthene	mg/kg	<0.1	1.2
Pyrene	mg/kg	<0.1	1.4
Benzo(a)anthracene	mg/kg	<0.1	1
Chrysene	mg/kg	<0.1	1.0
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	2.6
Benzo(a)pyrene	mg/kg	<0.05	1.6
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	1.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	1.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	2.2
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	2.2
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	2.2
Total Positive PAHs	mg/kg	NIL (+)VE	12
Surrogate p-Terphenyl-d14	%	107	113

Organochlorine Pesticides in soil	UNITS	133208-2
Our Reference:	-----	QC201
Your Reference	-----	21/08/2015
Date Sampled		Soil
Type of sample		
Date extracted	-	26/08/2015
Date analysed	-	28/08/2015
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCMX	%	104

Organophosphorus Pesticides		
Our Reference:	UNITS	133208-2
Your Reference	-----	QC201
Date Sampled	-----	21/08/2015
Type of sample		Soil
Date extracted	-	26/08/2015
Date analysed	-	28/08/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.30
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	104

PCBs in Soil		
Our Reference:	UNITS	133208-2
Your Reference	-----	QC201
Date Sampled	-----	21/08/2015
Type of sample		Soil
Date extracted	-	26/08/2015
Date analysed	-	28/08/2015
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Surrogate TCLMX	%	104

Acid Extractable metals in soil			
Our Reference:	UNITS	133208-1	133208-2
Your Reference	-----	QC100	QC201
Date Sampled	-----	21/08/2015	21/08/2015
Type of sample		Soil	Soil
Date prepared	-	26/08/2015	26/08/2015
Date analysed	-	26/08/2015	26/08/2015
Arsenic	mg/kg	9	25
Cadmium	mg/kg	<0.4	3
Chromium	mg/kg	11	180
Copper	mg/kg	8	430
Lead	mg/kg	29	14,000
Mercury	mg/kg	<0.1	15
Nickel	mg/kg	6	30
Zinc	mg/kg	64	2,600

Misc Soil - Inorg		
Our Reference:	UNITS	133208-2
Your Reference	-----	QC201
Date Sampled	-----	21/08/2015
Type of sample		Soil
Date prepared	-	26/08/2015
Date analysed	-	26/08/2015
Total Phenolics (as Phenol)	mg/kg	<5



Moisture			
Our Reference:	UNITS	133208-1	133208-2
Your Reference	-----	QC100	QC201
Date Sampled	-----	21/08/2015	21/08/2015
Type of sample		Soil	Soil
Date prepared	-	26/08/2015	26/08/2015
Date analysed	-	27/08/2015	27/08/2015
Moisture	%	39	43

MethodID	Methodology Summary
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore " Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

Client Reference: 60438840/1.1, Burrows

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
VHC's in soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			27/08/2015	[NT]	[NT]	LCS-1	27/08/2015
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	97%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	91%
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	86%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	95%
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	82%
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	88%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	92%
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	89%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]

Client Reference: 60438840/1.1, Burrows

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
VHC's in soil						Base II Duplicate II %RPD		
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	97	[NT]	[NT]	LCS-1	97%
Surrogate aaa-Trifluorotoluene	%		Org-014	88	[NT]	[NT]	LCS-1	80%
Surrogate Toluene-d8	%		Org-014	98	[NT]	[NT]	LCS-1	99%
Surrogate 4-Bromofluorobenzene	%		Org-014	94	[NT]	[NT]	LCS-1	98%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			27/08/2015	[NT]	[NT]	LCS-1	27/08/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	89%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	89%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	91%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	88%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	89%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	88%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	87%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	88	[NT]	[NT]	LCS-1	80%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	112%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	105%
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	91%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	112%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	105%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	91%
Surrogate o-Terphenyl	%		Org-003	92	[NT]	[NT]	LCS-1	80%

Client Reference: 60438840/1.1, Burrows

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	89%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	93%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	97%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	91%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	95%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	89%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-1	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	110	[NT]	[NT]	LCS-1	106%

**Client Reference: 60438840/1.1, Burrows**

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			28/08/2015	[NT]	[NT]	LCS-1	28/08/2015
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	73%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	87%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	83%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	89%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	91%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	89%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	96%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	88%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	80%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	87%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	99	[NT]	[NT]	LCS-1	93%

**Client Reference: 60438840/1.1, Burrows**

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			28/08/2015	[NT]	[NT]	LCS-1	28/08/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	72%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	91%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	105%
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	104%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	118%
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	92%
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	100%
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-008	99	[NT]	[NT]	LCS-1	101%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			28/08/2015	[NT]	[NT]	LCS-1	28/08/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-1	103%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	99	[NT]	[NT]	LCS-1	94%

**Client Reference: 60438840/1.1, Burrows**

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date prepared	-			26/08/2015	[NT]	[NT]	LCS-3	26/08/2015
Date analysed	-			26/08/2015	[NT]	[NT]	LCS-3	26/08/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-3	102%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-3	93%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	92%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-3	98%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	95%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	91%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Soil - Inorg						Base II Duplicate II %RPD		
Date prepared	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Date analysed	-			26/08/2015	[NT]	[NT]	LCS-1	26/08/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	LCS-1	101%



**Report Comments:**

OP in soil: PQL has been raised due to interference from analytes(other than those being tested) in the sample/s.

Asbestos ID was analysed by Approved Identifier: Not applicable for this job

Asbestos ID was authorised by Approved Signatory: Not applicable for this job

INS: Insufficient sample for this test

PQL: Practical Quantitation Limit

NT: Not tested

NA: Test not required

RPD: Relative Percent Difference

NA: Test not required

<: Less than

>: Greater than

LCS: Laboratory Control Sample

### Quality Control Definitions

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

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

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

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

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

### Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

## SAMPLE RECEIPT ADVICE

Client Details	
<b>Client</b>	AECOM Australia Pty Ltd (Sydney)
<b>Attention</b>	Alex Latham, Kate Pigram, Lauren Gibb

Sample Login Details	
<b>Your Reference</b>	60438840/1.1, Burrows
<b>Envirolab Reference</b>	133208
<b>Date Sample Received</b>	25/08/2015
<b>Date Instructions Received</b>	25/08/2015
<b>Date Results Expected to be Reported</b>	01/09/2015

Sample Condition	
<b>Samples received in appropriate condition for analysis</b>	YES
<b>No. of Samples Provided</b>	2 Soils
<b>Turnaround Time Requested</b>	Standard
<b>Temperature on receipt (°C)</b>	-1.5
<b>Cooling Method</b>	Ice
<b>Sampling Date Provided</b>	YES

Comments	
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples	

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

*Sample and Testing Details on following page*

<i>Sample Id</i>	<i>VHC's in soil</i>	<i>vTRH(C6-C10)/BTEXN in Soil</i>	<i>svTRH (C10-C40) in Soil</i>	<i>PAHs in Soil</i>	<i>Organochlorine Pesticides in soil</i>	<i>Organophosphorus Pesticides</i>	<i>PCBs in Soil</i>	<i>Acid Extractable metals in soil</i>	<i>Misc Soil - Inorg</i>
QC100		✓	✓	✓				✓	
QC201	✓	✓	✓	✓	✓	✓	✓	✓	✓

Page 3 of 11  
 ENVIROLAB

### Chain of Custody

AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000

Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com

### Laboratory Details

Tel:  
 Fax:  
 Preliminary Report by:  
 Final Report by:  
 Lab Quote No: EN/004/15

Sampled By: Kate Pigram & Lauren Gibb  
 AECOM Project No: 60438840/1.1

### Specifications:

1. Urgent TAT required? (please circle: 24hr 48hr days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.17
5. Special storage requirements? (details: \_\_\_\_\_)
6. Shell Quality Partnership: \_\_\_\_\_
7. Report Format: Fax Hardcopy Email: \_\_\_\_\_

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request										Other						
			soil	water	other	fitted	acid	ice		other	TRH C6-C40, BTEXN	PAHs	B Metals	OCP, OPP, PCB	Asbestos in Soil/Absence/Present	ACM Fragment	Phenols	VHCS	HOLD							
13	BH10_4.0-4.1	21/08/2015	X					X	1 x 250ml soil jar	X																
14	QC100	21/08/2015	X					X	1 x 250ml soil jar	X																
15	QC101	21/08/2015	X					X	1 x 250ml soil jar	X																
16	BH04_0.15-0.25	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
17	BH04_1.0-1.1	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
18	BH04_1.5-1.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
19	BH04_2.3-2.4	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
20	BH04_2.7-2.8	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
21	BH04_3.5-3.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
22	BH05_0.25-0.35	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																
23	BH05_0.5-0.6	20/08/2015	X					X	1 x 250 mL soil jar & 1 x bag	X																

ENVIROLAB  
 EnviroLab Services  
 12 Ashley St  
 Chiswick NSW 2067  
 Ph: (02) 8910 6200  
 Job No: 133208  
 Date Received: 25.8.15  
 Time Received: 12:30  
 Received by: CB  
 Temp: Cool/Ambient  
 Capping: CB/Ziplock  
 Security: None/None

\* Metals Required (Delete elements not required)

Reinquired by: Kate Pigram

Signed: *[Signature]*  
 Date: 25.8.15

Reinquired by: *[Signature]*  
 Date: 24/08/2015

Received by: *[Signature]*  
 Date: 24/8/15

Printed copies of this document are uncontrolled

# Chain of Custody

# AECOM

**Chain of Custody**  
 AECOM - Sydney  
 Level 21, 420 George Street,  
 Sydney, NSW 2000  
 Tel: (02) 8934 0000  
 Fax: (02) 8934 0001  
 E-mail: Alex.Latham@aecom.com;  
 Kate.Pigram@aecom.com; Lauren.Gibb@aecom.com  
 Lab. Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref:  
 Preliminary Report by:  
 Final Report by:  
 Lab Quote No: EN/004/15  
 Project Name: Burrows  
 PO No.

**Laboratory Details**  
 Lab Name: ALS Sydney  
 Lab. Address:  
 Contact Name:  
 Lab. Ref:  
 Preliminary Report by:  
 Final Report by:  
 Lab Quote No: EN/004/15  
 Project Name: Burrows  
 PO No.

**Specifications:**  
 1. Urgent TAT required? (please circle: 24hr 48hr \_\_\_\_\_ days)  
 2. Fast TAT Guarantee Required?  
 3. Is any sediment layer present in waters to be excluded from extractions?  
 4. % extraneous material removed from samples to be reported as per NEPM 5.1.17  
 5. Special storage requirements? (details: \_\_\_\_\_)  
 6. Shall Quality Partnership:  
 7. Report Format: Fax Hardcopy Email:

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation			Container (No. & type)	Analysis Request	Other
			soil	water	other	filled	acid	ice			
32	BH12_1.0-1.1	21/08/2015	X						X		
92	BH12_1.5-1.6	21/08/2015	X						X		
33	BH12_1.8-1.9	21/08/2015	X						X		
123	BH12_3.2-3.3	21/08/2015	X						X		
34	BH12_3.6-3.7	21/08/2015	X						X		
93	BH12_3.7-3.8	21/08/2015	X						X		
2	QC201	21/08/2015	X						X		

Comments: Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury Zinc  
 Relinquished by: Kate Pigram  
 Signed: \_\_\_\_\_  
 Date: 24/08/2015  
 Relinquished by: \_\_\_\_\_  
 Signed: \_\_\_\_\_  
 Date: 24/08/2015  
 Received by: \_\_\_\_\_  
 Signed: \_\_\_\_\_  
 Date: 24/08/2015

TRH C6-C40, BTEXN  
 8 Metals  
 OCP, OPP, PCB  
 Asbestos in Soil(Absence/Presence)  
 ACM Fragment  
 Phenols  
 VHCs  
 HOLD  
 Please forward sample QC201 to Envirolab with COC



CERTIFICATE OF ANALYSIS

**Work Order** : ES1529984 Page : 1 of 7  
**Client** : AECOM Australia Pty Ltd Laboratory : Environmental Division Sydney  
**Contact** : MR ALEX LATHAM Contact : Barbara Hanna  
**Address** : LEVEL 21, 420 George Street Address : 277-289 Woodpark Road Smithfield NSW Australia 2164  
SYDNEY NSW 2000  
**E-mail** : alex.latham@aecom.com E-mail : Barbara.Hanna@aisglobal.com  
**Telephone** : +61 02 8934 0000 Telephone : +61 2 8784 8555  
**Facsimile** : +61 02 8934 0001 Facsimile : +61-2-8784 8500  
**Project** : 60438840/1.1 Burrows QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  
**Order number** : 60438840/1.1 Date Samples Received : 01-Sep-2015 10:50  
**C-O-C number** : ---- Date Analysis Commenced : 03-Sep-2015  
**Sampler** : ---- Issue Date : 08-Sep-2015 16:47  
**Site** : ----  
**Quote number** : ---- No. of samples received : 10  
No. of samples analysed : 10

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



WORLD RECOGNISED ACCREDITATION

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
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
Raymond Commodore	Instrument Chemist	Sydney Inorganics



Page : 2 of 7  
Work Order : ES1529984  
Client : AECOM Australia Pty Ltd  
Project : 60438840/1.1 Burrows



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

ø = ALS is not NATA accredited for these tests.

● EG035T: Poor precision was obtained for Mercury on sample ES1529984 # 4 due to sample heterogeneity. Results have been confirmed by re-extraction and reanalysis.

● EG050G-C: LOR raised for Hexavalent Chromium due to sample matrix.

● Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benzo(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.

Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

● Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benzo(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.







Compound	CAS Number	LOR	Client sampling date / time		Client sample ID	
			Unit	%	Result	Result
<b>EA055: Moisture Content</b>						
Moisture Content (dried @ 103°C)	----	1	%	32.0	42.7	21.6
<b>EG005T: Total Metals by ICP-AES</b>						
Arsenic	7440-38-2	5	mg/kg	385	71	<5
Cadmium	7440-43-9	1	mg/kg	9	10	<1
Chromium	7440-47-3	2	mg/kg	36	182	7
Copper	7440-50-8	5	mg/kg	576	7430	11
Lead	7439-92-1	5	mg/kg	2770	4370	42
Nickel	7440-02-0	2	mg/kg	37	254	6
Zinc	7440-66-6	5	mg/kg	5750	14000	90
<b>EG035T: Total Recoverable Mercury by FIMS</b>						
Mercury	7439-97-6	0.1	mg/kg	0.9	1.7	<0.1
<b>EN33: TCLP Leach</b>						
Initial pH	----	0.1	pH Unit	-----	-----	-----
After HCl pH	----	0.1	pH Unit	-----	-----	-----
Extraction Fluid Number	----	1	-	-----	-----	-----
Final pH	----	0.1	pH Unit	-----	-----	-----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
Naphthalene	91-20-3	0.5	mg/kg	<0.5	-----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	-----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	-----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	-----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	-----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	-----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	-----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	-----	<0.5
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	-----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	-----	<0.5
Benzo(b+)]fluoranthene	205-99-2	0.5	mg/kg	<0.5	-----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	-----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	-----	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	-----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	-----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	-----	<0.5
Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	-----	<0.5



Compound	CAS Number	LOR	Unit	Client sample ID						
				Client sampling date / time	Result	Client sample ID	Result			
<b>Sub-Matrix: SOIL (Matrix: SOIL)</b>										
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>										
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	[21-Aug-2015]	ES1529984-001	BH01_3.8-3.9	BH11_3.3-3.4	BH12_3.6-3.7	BH16_3.0-3.1	BH21_3.0-3.1
					Result					Result
					<0.5					<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	[20-Aug-2015]	ES1529984-002					
					Result					Result
					0.6					0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	[21-Aug-2015]	ES1529984-003					
					Result					Result
					1.2					1.2
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>										
Phenol-d6	13127-88-3	0.5	%	[20-Aug-2015]	ES1529984-004					
					Result					Result
					96.5					91.4
2-Chlorophenol-D4	93951-73-6	0.5	%	[21-Aug-2015]	ES1529984-005					
					Result					Result
					108					101
2,4,6-Tribromophenol	118-79-6	0.5	%	[22-Aug-2015]	ES1529984-006					
					Result					Result
					73.3					72.2
<b>EP075(SIM)T: PAH Surrogates</b>										
2-Fluorobiphenyl	321-60-8	0.5	%	[22-Aug-2015]	ES1529984-007					
					Result					Result
					101					96.5
Anthracene-d10	1719-06-8	0.5	%	[22-Aug-2015]	ES1529984-008					
					Result					Result
					106					121
4-Terphenyl-d14	1718-51-0	0.5	%	[22-Aug-2015]	ES1529984-009					
					Result					Result
					104					99.5



Compound	CAS Number	Client sampling date / time		Client sample ID	
		LOR	Unit	Result	Result
<b>EA055: Moisture Content</b>					
^ Moisture Content (dried @ 103°C)	----	1	%	-----	-----
<b>EG005T: Total Metals by ICP-AES</b>					
Arsenic	7440-38-2	5	mg/kg	-----	-----
Cadmium	7440-43-9	1	mg/kg	-----	-----
Chromium	7440-47-3	2	mg/kg	-----	-----
Copper	7440-50-8	5	mg/kg	-----	-----
Lead	7439-92-1	5	mg/kg	-----	-----
Nickel	7440-02-0	2	mg/kg	-----	-----
Zinc	7440-66-6	5	mg/kg	-----	-----
<b>EG035T: Total Recoverable Mercury by FIMS</b>					
Mercury	7439-97-6	0.1	mg/kg	-----	-----
<b>EN33: TCLP Leach</b>					
Initial pH	----	0.1	pH Unit	8.6	7.1
After HCl pH	----	0.1	pH Unit	1.9	2.2
Extraction Fluid Number	----	1	-	1	1
Final pH	----	0.1	pH Unit	5.9	6.2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>					
Naphthalene	91-20-3	0.5	mg/kg	-----	-----
Acenaphthylene	208-96-8	0.5	mg/kg	-----	-----
Acenaphthene	83-32-9	0.5	mg/kg	-----	-----
Fluorene	86-73-7	0.5	mg/kg	-----	-----
Phenanthrene	85-01-8	0.5	mg/kg	-----	-----
Anthracene	120-12-7	0.5	mg/kg	-----	-----
Fluoranthene	206-44-0	0.5	mg/kg	-----	-----
Pyrene	129-00-0	0.5	mg/kg	-----	-----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	-----	-----
Chrysene	218-01-9	0.5	mg/kg	-----	-----
Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	-----	-----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	-----	-----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	-----	-----
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	-----	-----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	-----	-----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	-----	-----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	-----	-----
<b>BH4_1.0-1.1</b>					
[20-Aug-2015]					
ES1529984-006					
Result					
<b>BH16_2.0-2.1</b>					
[22-Aug-2015]					
ES1529984-007					
Result					
<b>BH17_2.0-2.1</b>					
[22-Aug-2015]					
ES1529984-008					
Result					
<b>BH21_0.7-0.8</b>					
[21-Aug-2015]					
ES1529984-009					
Result					
<b>BH22_2.2-2.3</b>					
[21-Aug-2015]					
ES1529984-010					
Result					



Page : 6 of 7  
 Work Order : ES1529984  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

Sub-Matrix: SOIL (Matrix: SOIL)		Client sample ID			
Compound	CAS Number	LOR	Client sampling date / time	Unit	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>					
^ Benzo(a)pyrene TEQ (zero)	----	0.5		mg/kg	Result
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5		mg/kg	Result
^ Benzo(a)pyrene TEQ (LOR)	----	0.5		mg/kg	Result
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>					
Phenol-d6	13127-88-3	0.5		%	Result
2-Chlorophenol-D4	93951-73-6	0.5		%	Result
2,4,6-Tribromophenol	118-79-6	0.5		%	Result
<b>EP075(SIM)T: PAH Surrogates</b>					
2-Fluorobiphenyl	321-60-8	0.5		%	Result
Anthracene-d10	1719-06-8	0.5		%	Result
4-Terphenyl-d14	1718-51-0	0.5		%	Result



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

Compound	CAS Number	LOR	Unit	Client sample ID					
				BH4_1.0-1.1	BH16_2.0-2.1	BH17_2.0-2.1	BH21_0.7-0.8	BH22_2.2-2.3	
				Result	Result	Result	Result	Result	
<b>EG005C: Leachable Metals by ICPAES</b>									
Arsenic	7440-38-2	0.1	mg/L	0.4	****	****	****	<0.1	
Lead	7439-92-1	0.1	mg/L	15.9	****	****	****	47.1	
Nickel	7440-02-0	0.1	mg/L	****	****	****	****	0.6	
<b>EG035C: Leachable Mercury by FIMS</b>									
Mercury	7439-97-6	0.001	mg/L	****	<0.0010	****	****	****	
<b>EG050G: Hexavalent Chromium by Discrete Analyser</b>									
Hexavalent Chromium	18540-29-9	0.01	mg/L	****	****	<0.05	****	****	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	****	****	****	<0.5	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	22.2	****	****	****	20.0	
2-Chlorophenol-D4	93951-73-6	1	%	47.3	****	****	****	38.9	
2,4,6-Tribromophenol	118-79-6	1	%	39.5	****	****	****	40.7	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	72.8	****	****	****	67.6	
Anthracene-d10	1719-06-8	1	%	87.0	****	****	****	61.5	
4-Terphenyl-d14	1718-51-0	1	%	76.8	****	****	****	72.7	





Page : 2 of 7  
Work Order : ES1529984  
Client : AECOM Australia Pty Ltd  
Project : 60438840/1.1 Burrows

### 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

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



### 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	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA055: Moisture Content (QC Lot: 201817)</b>										
ES1529984-001	BH01_3.8-3.9		EA055-103: Moisture Content (dried @ 103°C)	---	1	%	32.0	32.4	1.28	0% - 20%
ES1529986-007	Anonymous		EA055-103: Moisture Content (dried @ 103°C)	---	1	%	18.3	19.2	5.27	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 204711)</b>										
ES1529478-002	Anonymous		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
			EG005T: Chromium	7440-47-3	2	mg/kg	14	9	37.1	No Limit
			EG005T: Nickel	7440-02-0	2	mg/kg	8	7	20.4	No Limit
			EG005T: Arsenic	7440-39-2	5	mg/kg	<5	<5	0.00	No Limit
			EG005T: Copper	7440-50-8	5	mg/kg	30	32	6.29	No Limit
			EG005T: Lead	7439-92-1	5	mg/kg	174	192	10.1	0% - 20%
			EG005T: Zinc	7440-66-6	5	mg/kg	169	171	1.22	0% - 20%
ES1529984-003	BH12_3.6-3.7		EG005T: Cadmium	7440-43-9	1	mg/kg	9	5	57.3	No Limit
			EG005T: Chromium	7440-47-3	2	mg/kg	36	32	11.6	0% - 50%
			EG005T: Nickel	7440-02-0	2	mg/kg	37	30	19.0	0% - 50%
			EG005T: Arsenic	7440-39-2	5	mg/kg	385	326	16.6	0% - 20%
			EG005T: Copper	7440-50-8	5	mg/kg	576	674	15.8	0% - 20%
			EG005T: Lead	7439-92-1	5	mg/kg	2770	2280	19.2	0% - 20%
			EG005T: Zinc	7440-66-6	5	mg/kg	5750	6570	13.3	0% - 20%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 204712)</b>										
ES1529478-002	Anonymous		EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	0.00	No Limit
ES1529984-003	BH12_3.6-3.7		EG035T: Mercury	7439-97-6	0.1	mg/kg	0.9	0.7	19.2	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 201900)</b>										
ES1529968-018	Anonymous		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.7	0.7	0.00	No Limit
			EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Benzo(b+h)fluoranthene	205-99-2	0.5	mg/kg	0.7	0.8	0.00	No Limit
			EP075(SIM): Benzo(g,h,i)perylene	205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Benzo(k)fluoranthene	191-24-2	0.5	mg/kg	<0.5	0.6	0.00	No Limit
			EP075(SIM): Chrysene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Dibenzo(a,h)anthracene	218-01-9	0.5	mg/kg	0.7	0.7	0.00	No Limit
			EP075(SIM): Fluoranthene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			EP075(SIM): Fluorene	206-44-0	0.5	mg/kg	3.0	2.5	15.7	No Limit
			EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit





Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 201900) - continued</b>									
ES1529968-018	Anonymous	EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.6	0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.5	2.2	14.1	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	8.2	8.0	2.47	0% - 50%
ES1529968-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.9	1.0	0.00	No Limit
		EP075(SIM): Benz(a)pyrene	50-32-8	0.5	mg/kg	0.8	0.9	15.7	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	1.2	1.3	11.4	No Limit
		EP075(SIM): Benzo(b+g)fluoranthene	205-99-2	0.5	mg/kg	1.2	1.5	22.7	No Limit
		EP075(SIM): Benzo(k)fluoranthene	205-82-3						
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	1.0	0.9	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	0.6	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.0	1.0	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.3	3.4	3.14	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	0.6	0.6	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.6	0.5	17.6	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.1	3.1	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	13.1	13.5	3.01	0% - 20%

Sub-Matrix: WATER		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG005C: Leachable Metals by ICPAES (QC Lot: 204954)</b>									
ES1529750-001	Anonymous	EG005C: Arsenic	7440-39-2	0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.00	No Limit
ES1529750-010	Anonymous	EG005C: Arsenic	7440-39-2	0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	0.1	0.1	0.00	No Limit
<b>EG035C: Leachable Mercury by FIMS (QC Lot: 204825)</b>									
ES1529750-001	Anonymous	EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
ES1529750-011	Anonymous	EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
<b>EG050G: Hexavalent Chromium by Discrete Analyser (QC Lot: 205903)</b>									
ES1529844-001	Anonymous	EG050G-C: Hexavalent Chromium	18540-29-9	0.01	mg/L	0.29	0.29	0.00	0% - 20%



### 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 (%) LCS	Recovery Limits (%) Low	High
<b>EG005T: Total Metals by ICP-AES (QC Lot: 204711)</b>								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	102	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	98.0	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	95.0	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	98.2	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	98.7	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	102	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	100	81	133
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 204712)</b>								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	77.7	70	105
<b>EN53: TCLP Leach (QC Lot: 203133)</b>								
EN53: After HCl pH	---	0.1	pH Unit	1.0	---	---	---	---
EN53: Final pH	---	0.1	pH Unit	1.0	---	---	---	---
EN53: Initial pH	---	0.1	pH Unit	1.0	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 201900)</b>								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.6	79	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.2	77	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	99.4	79	123
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.5	73	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	98.1	76	122
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	90.7	70	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	96.5	72	114
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	96.7	77	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	90.6	81	123
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	95.5	72	113
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.9	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	91.0	77	123
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.6	71	113
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	96.6	80	124
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.7	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	95.8	79	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
				Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low	High



Page : 6 of 7  
 Work Order : ES1529984  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			
				Result	Concentration	Spike Recovery (%)	Concentration	Recovery Limits (%)	High
<b>EG005C: Leachable Metals by ICPAES (QCLot: 204954)</b>									
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	0.1 mg/L	118	80	124	
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	0.1 mg/L	105	83	117	
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	0.1 mg/L	109	81	119	
<b>EG035C: Leachable Mercury by FIMS (QCLot: 204825)</b>									
EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.8	79	119	
<b>EG050G: Hexavalent Chromium by Discrete Analyser (QCLot: 205903)</b>									
EG050G-C: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	100	82	124	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 205072)</b>									
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.0	63	117	

### 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		
				Concentration	Spike Recovery (%)	Recovery Limits (%)
<b>EG005T: Total Metals by ICP-AES (QCLot: 204711)</b>						
ES1529478-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70 130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.0	70 130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.6	70 130
		EG005T: Copper	7440-50-8	250 mg/kg	102	70 130
		EG005T: Lead	7439-92-1	250 mg/kg	89.6	70 130
		EG005T: Nickel	7440-02-0	50 mg/kg	90.1	70 130
		EG005T: Zinc	7440-66-6	250 mg/kg	79.7	70 130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 204712)</b>						
ES1529478-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	97.5	70 130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 201900)</b>						
ES1529968-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.3	70 130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70 130
<b>Sub-Matrix: WATER</b>						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	Spike Recovery (%)	Recovery Limits (%)
<b>EG005C: Leachable Metals by ICPAES (QCLot: 204954)</b>						
ES1529750-002	Anonymous	EG005C: Arsenic	7440-38-2	1 mg/L	120	70 130
		EG005C: Lead	7439-92-1	1 mg/L	107	70 130
		EG005C: Nickel	7440-02-0	1 mg/L	107	70 130



Page : 7 of 7  
 Work Order : ES1529984  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)
<b>EG035C: Leachable Mercury by FIMS (QCLot: 204825)</b>						
ES1529750-002	Anonymous	EG035C: Mercury	7439-97-6	0.01 mg/L	82.0	70 130
<b>EG050G: Hexavalent Chromium by Discrete Analyser (QCLot: 205903)</b>						
ES1529844-001	Anonymous	EG050G-C: Hexavalent Chromium	18540-29-9	0.5 mg/L	109	70 130



Work Order	: ES1529984	Page	: 1 of 6
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: MR ALEX LATHAM	Telephone	: +61 2 8784 8555
Project	: 60438840/1.1 Burrows	Date Samples Received	: 01-Sep-2015
Site	: ----	Issue Date	: 08-Sep-2015
Sampler	: ----	No. of samples received	: 10
Order number	: 60438840/1.1	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Frequency of Quality Control Samples

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected		
<b>Matrix: SOIL</b>						
Method Blanks (MB)						
TCLP for Non & Semivolatile Analytes	0	10	0.00	9.09	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
<b>Matrix: WATER</b>						
Quality Control Sample Type						
Method	QC	Regular	Actual	Expected	Quality Control Specification	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	0	13	0.00	10.00	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	0	13	0.00	5.00	NEPM 2013 Schedule B(3) and ALS QCS3 requirement	

### Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 16 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

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	Evaluation	Evaluation
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103)	BH11_3.3-3.4	20-Aug-2015	----	03-Sep-2015	03-Sep-2015	----	✓
Soil Glass Jar - Unpreserved (EA055-103)	BH01_3.8-3.9, BH12_3.6-3.7	21-Aug-2015	----	03-Sep-2015	04-Sep-2015	----	✓
Soil Glass Jar - Unpreserved (EA055-103)	BH16_3.0-3.1, BH21_3.0-3.1	22-Aug-2015	----	03-Sep-2015	05-Sep-2015	----	✓
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T)	BH11_3.3-3.4	20-Aug-2015	07-Sep-2015	16-Feb-2016	07-Sep-2015	16-Feb-2016	✓
Soil Glass Jar - Unpreserved (EG005T)	BH12_3.6-3.7	21-Aug-2015	07-Sep-2015	17-Feb-2016	07-Sep-2015	17-Feb-2016	✓
Soil Glass Jar - Unpreserved (EG005T)	BH16_3.0-3.1, BH21_3.0-3.1	22-Aug-2015	07-Sep-2015	18-Feb-2016	07-Sep-2015	18-Feb-2016	✓



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	Due for analysis	Evaluation
<b>EG035T: Total Recoverable Mercury by FIMS</b>						
<b>Soil Glass Jar - Unpreserved (EG035T)</b>						
BH11_3.3-3.4		20-Aug-2015	07-Sep-2015	17-Sep-2015	✓	17-Sep-2015 ✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b>						
BH12_3.6-3.7		21-Aug-2015	07-Sep-2015	18-Sep-2015	✓	18-Sep-2015 ✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b>						
BH16_3.0-3.1	BH21_3.0-3.1	22-Aug-2015	07-Sep-2015	19-Sep-2015	✓	19-Sep-2015 ✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>						
BH01_3.8-3.9		21-Aug-2015	03-Sep-2015	04-Sep-2015	✓	13-Oct-2015 ✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>						
BH21_3.0-3.1		22-Aug-2015	03-Sep-2015	05-Sep-2015	✓	13-Oct-2015 ✓

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

Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
			Date extracted	Due for extraction	Due for analysis	Evaluation
<b>EG005C: Leachable Metals by ICPAES</b>						
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)</b>						
BH4_1.0-1.1	BH22_2.2-2.3	04-Sep-2015	07-Sep-2015	02-Mar-2016	✓	02-Mar-2016 ✓
<b>EG035C: Leachable Mercury by FIMS</b>						
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035C)</b>						
BH16_2.0-2.1		04-Sep-2015	----	----	----	02-Oct-2015 ✓
<b>EG050G: Hexavalent Chromium by Discrete Analyser</b>						
<b>Clear Plastic Bottle - NaOH (EG050G-C)</b>						
BH17_2.0-2.1		04-Sep-2015	----	----	----	02-Oct-2015 ✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b>						
BH4_1.0-1.1	BH21_0.7-0.8	04-Sep-2015	07-Sep-2015	11-Sep-2015	✓	17-Oct-2015 ✓



## 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(were) 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
		QC	Regular	Actual	Expected	
<b>Analytical Methods</b>						
<b>Laboratory Duplicates (DUP)</b>						
Moisture Content	EA055-103	2	20	10.00	10.00	✔
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.76	10.00	✔
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✔
Total Metals by ICP-AES	EG005T	2	20	10.00	10.00	✔
<b>Laboratory Control Samples (LCS)</b>						
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✔
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔
<b>Method Blanks (MB)</b>						
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✔
TCLP for Non & Semivolatile Analytes	EN33a	0	10	0.00	9.09	✖
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔
<b>Matrix Spikes (MS)</b>						
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.88	5.00	✔
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔
Total Metals by ICP-AES	EG005T	1	20	5.00	5.00	✔

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Evaluation
		QC	Regular	Actual	Expected	
<b>Analytical Methods</b>						
<b>Laboratory Duplicates (DUP)</b>						
Hexavalent Chromium by Discrete Analyser - Leachable	EG050G-C	1	2	50.00	10.00	✔
Leachable Mercury by FIMS	EG035C	2	13	15.38	10.00	✔
Leachable Metals by ICP-AES	EG005C	2	15	13.33	10.00	✔
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00	✖
<b>Laboratory Control Samples (LCS)</b>						
Hexavalent Chromium by Discrete Analyser - Leachable	EG050G-C	1	2	50.00	5.00	✔
Leachable Mercury by FIMS	EG035C	1	13	7.69	5.00	✔
Leachable Metals by ICP-AES	EG005C	1	15	6.67	5.00	✔
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✔
<b>Method Blanks (MB)</b>						
Hexavalent Chromium by Discrete Analyser - Leachable	EG050G-C	1	2	50.00	5.00	✔
Leachable Mercury by FIMS	EG035C	1	13	7.69	5.00	✔
Leachable Metals by ICP-AES	EG005C	1	15	6.67	5.00	✔
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✔





Page : 5 of 6  
 Work Order : ES1529984  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840/1.1 Burrows

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

Quality Control Sample Type		Quality Control Specification				
Analytical Methods	Method	Count		Rate (%)		Evaluation
		QC	Regular	Actual	Expected	
<b>Matrix Spikes (MS)</b>						
Hexavalent Chromium by Discrete Analyser - Leachable	EG050G-C	1	2	50.00	5.00	✓
Leachable Mercury by FIMS	EG035C	1	13	7.69	5.00	✓
Leachable Metals by ICPAES	EG005C	1	15	6.67	5.00	✓
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	5.00	✗



## 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	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Leachable Metals by ICPAES	EG005C	SOIL	In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. 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 (2013) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	In house: referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Discrete Analyser - Leachable	EG050G-C	SOIL	In house: Referenced to APHA 3500 Cr-A & B. Hexavalent chromium is determined directly on leachate samples by Discrete Analyser as received by pH adjustment and colour development using diphenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 502 and 507)
Preparation Methods	Method	Matrix	Method Descriptions
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	In house QWI-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES1529984

Client : AECOM Australia Pty Ltd
Contact : MR ALEX LATHAM
Address : LEVEL 21, 420 George Street SYDNEY NSW 2000

Laboratory : Environmental Division Sydney
Contact : Barbara Hanna
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164

E-mail : alex.latham@aecom.com
Telephone : +61 02 8934 0000
Facsimile : +61 02 8934 0001

E-mail : Barbara.Hanna@alsglobal.com
Telephone : +61 2 8784 8555
Facsimile : +61-2-8784 8500

Project : 60438840/1.1 Burrows
Order number : 60438840/1.1
C-O-C number : ----

Page : 1 of 3
Quote number : EB2015AECOMAU0580 (EN/004/15)
QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Site : ----
Sampler :

Dates

Date Samples Received : 01-Sep-2015 10:50 AM
Client Requested Due Date : 08-Sep-2015

Issue Date : 02-Sep-2015
Scheduled Reporting Date : 08-Sep-2015

Delivery Details

Mode of Delivery : Carrier
No. of coolers/boxes : ----
Receipt Detail : REBATCH OF ES1529109

Security Seal : Not Available
Temperature : 4.1' C
No. of samples received / analysed : 10 / 10

General Comments

- This report contains the following information:
- Sample Container(s)/Preservation Non-Compliances
- Summary of Sample(s) and Requested Analysis
- Proactive Holding Time Report
- Requested Deliverables
This is a rebatch of ES1529109.
Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.
Please direct any queries you have regarding this work order to the above ALS laboratory contact.
Analytical work for this work order will be conducted at ALS Sydney.
Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## 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.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EG035C Leachable Mercury by FIMS	SOIL - EG050G-C Hexavalent Chromium by Discrete Analyser -	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-02 8 Metals (incl. Digestion)
ES1529984-001	[ 21-Aug-2015 ]	BH01_3.8-3.9	☐				☐	
ES1529984-002	[ 20-Aug-2015 ]	BH11_3.3-3.4	☐					☐
ES1529984-003	[ 21-Aug-2015 ]	BH12_3.6-3.7	☐					☐
ES1529984-004	[ 22-Aug-2015 ]	BH16_3.0-3.1	☐					☐
ES1529984-005	[ 22-Aug-2015 ]	BH21_3.0-3.1	☐				☐	☐
ES1529984-006	[ 20-Aug-2015 ]	BH4_1.0-1.1		☐			☐	
ES1529984-007	[ 22-Aug-2015 ]	BH16_2.0-2.1			☐			
ES1529984-008	[ 22-Aug-2015 ]	BH17_2.0-2.1				☐		
ES1529984-009	[ 21-Aug-2015 ]	BH21_0.7-0.8					☐	
ES1529984-010	[ 21-Aug-2015 ]	BH22_2.2-2.3		☐				

## 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: **WATER**

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
<b>EP075(SIM): PAH/Phenols (GC/MS - SIM)</b>								
	BH21_0.7-0.8	Amber Glass Bottle - Unpreserv	28-Aug-2015	07-Oct-2015	01-Sep-2015		----	----
	BH4_1.0-1.1	Amber Glass Bottle - Unpreserv	27-Aug-2015	06-Oct-2015	01-Sep-2015		----	----



## Requested Deliverables

### ALEX LATHAM

- *AU Certificate of Analysis - NATA (COA)	Email	alex.latham@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	alex.latham@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	alex.latham@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	alex.latham@aecom.com
- A4 - AU Tax Invoice (INV)	Email	alex.latham@aecom.com
- Chain of Custody (CoC) (COC)	Email	alex.latham@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	alex.latham@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	alex.latham@aecom.com
- EDI Format - HLAPro (HLAPro)	Email	alex.latham@aecom.com
- EDI Format - XTab (XTAB)	Email	alex.latham@aecom.com

### AP\_CUSTOMER SERVICE ANZ

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
-----------------------------	-------	----------------------------------

### KATE PIGRAM

- *AU Certificate of Analysis - NATA (COA)	Email	kate.pigram@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kate.pigram@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kate.pigram@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	kate.pigram@aecom.com
- A4 - AU Tax Invoice (INV)	Email	kate.pigram@aecom.com
- Chain of Custody (CoC) (COC)	Email	kate.pigram@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	kate.pigram@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	kate.pigram@aecom.com
- EDI Format - HLAPro (HLAPro)	Email	kate.pigram@aecom.com
- EDI Format - XTab (XTAB)	Email	kate.pigram@aecom.com

### LAUREN GIBB

- *AU Certificate of Analysis - NATA (COA)	Email	Lauren.Gibb@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Lauren.Gibb@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Lauren.Gibb@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Lauren.Gibb@aecom.com
- A4 - AU Tax Invoice (INV)	Email	Lauren.Gibb@aecom.com
- Chain of Custody (CoC) (COC)	Email	Lauren.Gibb@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	Lauren.Gibb@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	Lauren.Gibb@aecom.com
- EDI Format - HLAPro (HLAPro)	Email	Lauren.Gibb@aecom.com
- EDI Format - XTab (XTAB)	Email	Lauren.Gibb@aecom.com

David 1/9 1050

**Fadi Soro**

**From:** Barbara Hanna  
**Sent:** Tuesday, 1 September 2015 10:40 AM  
**To:** Fadi Soro  
**Subject:** FW: 60438840 / 1.1 Burrows - Additional Analysis request ES1529109

Hi Guys,

Could you please arrange this rebatch.

Thanks!

Kind Regards

**Barbara Hanna**

Client Services Manager  
ALS | Environmental Division

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

T +61 2 8784 8555  
F +61 2 8784 8500

[www.alsglobal.com](http://www.alsglobal.com)

We are keen for your feedback! [Please click here for your 1 question survey](#)

[EnviroMail™ 94 - PFOS PFOA and Why do my laboratory results not agree](#)

[EnviroMail™ 93 - Quality Assurance, Quality Control and DQI Reporting to Maximise Data Quality](#)

[EnviroMail™ 92 - Western Australian - Small Community Sampling Grid](#)

[EnviroMail™ 52 \[UPDATE\] Sampling and Analysis of Soil Vapour using Canisters](#)

[EnviroMail™ 00 - Summary of all EnviroMails™ by Category](#)

 [Subscribe to EnviroMail™](#)  [Follow us on LinkedIn](#)

Environmental Division  
Sydney  
Work Order Reference  
**ES1529984**



Telephone : + 61-2-8784 8555

**From:** Latham, Alex [mailto:Alex.Latham@aecom.com]  
**Sent:** Tuesday, 1 September 2015 10:29 AM  
**To:** Barbara Hanna  
**Subject:** 60438840 / 1.1 Burrows - Additional Analysis request ES1529109

Hi Barbara,  
Could you please arrange the following additional tests on batch ES1529109:

- 1 BH01\_3.8-3.9 PAH
- 2 BH11\_3.3-3.4 suite 8 metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn)
- 3 BH12\_3.6-3.7 suite 8 metals
- 4 BH16\_3.0-3.1 suite 8 metals
- 5 BH21\_3.0-3.1 suite 8 metals, PAH

TCLP tests for waste classification

- 6 BH04\_1.0-1.1 B(a)P, As, Pb
- 7 BH16\_2.0-2.1 Hg
- 8 BH17\_2.0-2.1 hexavalent Cr
- 9 BH21\_0.7-0.8 B(a)P

\0BH22\_2.2-2.3 As, Ni, Pb

Regards,

**Alex Latham**

Associate Director

D +61 2 8934 0451 M +61 400 973 821

Alex.Latham@aecom.com

**AECOM**

Level 21, 420 George Street, Sydney, NSW 2000

PO Box Q410, QVB PO, Sydney, NSW, 1230

T +61 2 8934 0000 F +61 2 8934 0001

www.aecom.com

Please consider the environment before printing this email.

ALS Group: Click [here](#) to report this email as spam.



CERTIFICATE OF ANALYSIS

**Work Order** : ES1529729 Page : 1 of 11  
**Client** : AECOM Australia Pty Ltd Laboratory : Environmental Division Sydney  
**Contact** : MR ALEX LATHAM Contact : Barbara Hanna  
**Address** : LEVEL 21, 420 George Street Address : 277-289 Woodpark Road Smithfield NSW Australia 2164  
                   SYDNEY NSW 2000  
**E-mail** : alex.latham@aecom.com E-mail : Barbara.Hanna@aisglobal.com  
**Telephone** : +61 02 8934 0000 Telephone : +61 2 8784 8555  
**Facsimile** : +61 02 8934 0001 Facsimile : +61-2-8784 8500  
**Project** : 60438840 BURROWS INDUSTRIAL QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  
**Order number** : 60438840 Date Samples Received : 31-Aug-2015 15:45  
**C-O-C number** : ---- Date Analysis Commenced : 03-Sep-2015  
**Sampler** : KATE PIGRAM Issue Date : 08-Sep-2015 15:04  
**Site** : ----  
  
**Quote number** : ---- No. of samples received : 24  
No. of samples analysed : 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results



WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

□□□□ □□□□ □□□□

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.

□□□□□□□□ □□□□□□□□ □□□□□□□□

Celine Conceicao  
Christopher Owler  
Pabi Subba  
Pabi Subba

Senior Spectroscopist  
Team Leader - Asbestos  
Senior Organic Chemist  
Senior Organic Chemist

Sydney Inorganics  
Newcastle - Asbestos  
Sydney Inorganics  
Sydney Organics





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

ø = ALS is not NATA accredited for these tests.

- EA200 'Am' Amosite (brown asbestos)
- EA200 'C' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend

- EA200 'Ch' Chrysotile (white asbestos)

EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.

EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0),

Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.

Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2.2



Sub-Matrix: SOIL (Matrix: SOIL)	BH18_0.7-0.8 [29-Aug-2015] ES1529729-002	BH18_2.0-2.1 [29-Aug-2015] ES1529729-004	BH20_0.5-0.6 [29-Aug-2015] ES1529729-007	BH20_1.0-1.1 [29-Aug-2015] ES1529729-008	BH20_2.0-2.1 [29-Aug-2015] ES1529729-009
EA055: Moisture Content	Result	Result	Result	Result	Result
Moisture Content (dried @ 103°C)	17.8	28.4	8.0	6.9	23.3
EA200: AS 4964 - 2004 Identification of Asbestos in Soils					
Asbestos Detected	No	----	No	No	----
Asbestos Type	-	----	-	-	----
Sample weight (dry)	200	----	750	368	----
APPROVED IDENTIFIER:	C.OWLER	----	C.OWLER	C.OWLER	----
EG005T: Total Metals by ICP-AES					
Arsenic	20	48	<5	116	----
Cadmium	2	<1	<1	4	----
Chromium	28	63	8	9	----
Copper	476	294	10	208	----
Lead	469	1610	29	2030	----
Nickel	68	45	6	41	----
Zinc	704	2240	53	4290	----
EG035T: Total Recoverable Mercury by FIMS					
Mercury	0.1	<0.1	<0.1	<0.1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons					
Naphthalene	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	<0.5	<0.5	<0.5	<0.5	----
Fluorene	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	<0.5	<0.5	<0.5	<0.5	----
Anthracene	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	<0.5	<0.5	<0.5	<0.5	----
Pyrene	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)anthracene	<0.5	<0.5	<0.5	<0.5	----
Chrysene	<0.5	<0.5	<0.5	<0.5	----
Benzo(b+)fluoranthene	<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	<0.5	<0.5	<0.5	<0.5	----
Indeno(1,2,3-cd)pyrene	<0.5	<0.5	<0.5	<0.5	----
Dibenz(a,h)anthracene	<0.5	<0.5	<0.5	<0.5	----
Benzo(g,h,i)perylene	<0.5	<0.5	<0.5	<0.5	----
Sum of polycyclic aromatic hydrocarbons	<0.5	<0.5	<0.5	<0.5	----



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH18_0.7-0.8 [29-Aug-2015]		BH18_2.0-2.1 [29-Aug-2015]		BH20_0.5-0.6 [29-Aug-2015]		BH20_1.0-1.1 [29-Aug-2015]		BH20_2.0-2.1 [29-Aug-2015]	
		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>											
^ Benzo(a)pyrene TEQ (zero)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>											
C6 - C9 Fraction	10	mg/kg	<10	-----	-----	-----	-----	-----	-----	-----	<10
C10 - C14 Fraction	50	mg/kg	<50	-----	-----	-----	-----	-----	-----	-----	70
C15 - C28 Fraction	100	mg/kg	<100	-----	-----	-----	-----	-----	-----	-----	2350
C29 - C36 Fraction	100	mg/kg	<100	-----	-----	-----	-----	-----	-----	-----	2060
^ C10 - C36 Fraction (sum)	50	mg/kg	<50	-----	-----	-----	-----	-----	-----	-----	4480
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>											
C6 - C10 Fraction	10	mg/kg	<10	-----	-----	-----	-----	-----	-----	-----	<10
C6 - C10 Fraction minus BTEX (F1)	10	mg/kg	<10	-----	-----	-----	-----	-----	-----	-----	<10
>C10 - C16 Fraction	50	mg/kg	<50	-----	-----	-----	-----	-----	-----	-----	140
>C16 - C34 Fraction	100	mg/kg	<100	-----	-----	-----	-----	-----	-----	-----	3940
>C34 - C40 Fraction	100	mg/kg	<100	-----	-----	-----	-----	-----	-----	-----	780
^ >C10 - C40 Fraction (sum)	50	mg/kg	<50	-----	-----	-----	-----	-----	-----	-----	4860
^ >C10 - C16 Fraction minus Naphthalene (F2)	50	mg/kg	<50	-----	-----	-----	-----	-----	-----	-----	140
<b>EP080: BTEXN</b>											
Benzene	71-43-2	0.2	mg/kg	<0.2	-----	-----	-----	-----	-----	-----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	-----	-----	-----	-----	-----	-----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	-----	-----	-----	-----	-----	-----	<0.5
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	<0.5	-----	-----	-----	-----	-----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	-----	-----	-----	-----	-----	-----	<0.5
^ Sum of BTEX	-----	0.2	mg/kg	<0.2	-----	-----	-----	-----	-----	-----	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	-----	-----	-----	-----	-----	-----	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	-----	-----	-----	-----	-----	-----	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>											
Phenol-d6	13127-88-3	0.5	%	89.6	101	97.7	97.4	97.4	97.4	97.4	-----
2-Chlorophenol-D4	93951-73-6	0.5	%	95.2	112	109	114	114	114	114	-----
2,4,6-Tribromophenol	118-79-6	0.5	%	88.1	72.8	77.0	75.3	75.3	75.3	75.3	-----
<b>EP075(SIM)T: PAH Surrogates</b>											
2-Fluorobiphenyl	321-60-8	0.5	%	96.4	103	101	93.6	93.6	93.6	93.6	-----



Page : 5 of 11  
 Work Order : ES1529729  
 Client : AECOM Australia Pty Ltd  
 Project : 60438840 BURROWS INDUSTRIAL

□ □ □ □ □ □ □ □ □ □ □ □

Sub-Matrix: SOIL (Matrix: SOIL)	BH18_0.7-0.8 [29-Aug-2015] ES1529729-002 Result	BH18_2.0-2.1 [29-Aug-2015] ES1529729-004 Result	BH20_0.5-0.6 [29-Aug-2015] ES1529729-007 Result	BH20_1.0-1.1 [29-Aug-2015] ES1529729-008 Result	BH20_2.0-2.1 [29-Aug-2015] ES1529729-009 Result
EP075(SIM)T: PAH Surrogates - Continued					
Anthracene-d10	1719-06-8 0.5 %	116 110	121 106	116 110	116 110
4-Terphenyl-d14	1718-51-0 0.5 %	105	106	110	110
EP080S: TPH(V)/BTEX Surrogates					
1,2-Dichloroethane-D4	17060-07-0 0.2 %	98.2	98.2	98.2	98.2
Toluene-D8	2037-26-5 0.2 %	90.8	90.8	90.8	90.8
4-Bromofluorobenzene	460-00-4 0.2 %	104	104	104	104



Sub-Matrix: SOIL (Matrix: SOIL)	BH03_0.2-0.3 [29-Aug-2015] ES1529729-011	BH03_1.0-1.2 [29-Aug-2015] ES1529729-013	BH03_3.0-3.1 [29-Aug-2015] ES1529729-016	BH02_0.4-0.5 [29-Aug-2015] ES1529729-018	BH02_2.0-2.1 [29-Aug-2015] ES1529729-020
<b>EA055: Moisture Content</b>					
^ Moisture Content (dried @ 103°C)	13.4	16.6	49.0	8.3	36.2
<b>EA200: AS 4964 - 2004 Identification of Asbestos in Soils</b>					
Asbestos Detected	No	Yes	----	No	----
Asbestos Type	-	Ch	----	-	----
Sample weight (dry)	384	144	----	350	----
APPROVED IDENTIFIER:	C.OEWLER	C.OEWLER	----	C.OEWLER	----
<b>EG005T: Total Metals by ICP-AES</b>					
Arsenic	<5	6	17	<5	59
Cadmium	<1	<1	<1	<1	<1
Chromium	8	12	23	7	33
Copper	228	114	14	140	783
Lead	338	731	31	79	1410
Nickel	6	9	12	3	28
Zinc	279	268	85	106	815
<b>EG035T: Total Recoverable Mercury by FIMS</b>					
Mercury	1.0	0.6	<0.1	0.2	0.6
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>					
Naphthalene	<0.5	0.6	----	<0.5	----
Acenaphthylene	<0.5	1.4	----	<0.5	----
Acenaphthene	<0.5	<0.5	----	<0.5	----
Fluorene	<0.5	0.8	----	<0.5	----
Phenanthrene	1.4	12.3	----	<0.5	----
Anthracene	<0.5	3.1	----	<0.5	----
Fluoranthene	2.3	16.8	----	<0.5	----
Pyrene	2.2	17.0	----	<0.5	----
Benz(a)anthracene	0.9	7.6	----	<0.5	----
Chrysene	1.1	7.4	----	<0.5	----
Benzo(b+)fluoranthene	1.2	8.6	----	<0.5	----
Benzo(k)fluoranthene	<0.5	2.9	----	<0.5	----
Benzo(a)pyrene	0.9	6.9	----	<0.5	----
Indeno(1,2,3.cd)pyrene	<0.5	3.2	----	<0.5	----
Dibenz(a,h)anthracene	<0.5	0.9	----	<0.5	----
Benzo(g,h,i)perylene	0.7	4.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	10.7	94.0	----	<0.5	----



□□□□□□ □□□□□□

Sub-Matrix: SOIL (Matrix: SOIL)		BH03_0.2-0.3 [29-Aug-2015]		BH03_1.0-1.2 [29-Aug-2015]		BH03_3.0-3.1 [29-Aug-2015]		BH02_0.4-0.5 [29-Aug-2015]		BH02_2.0-2.1 [29-Aug-2015]	
		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>											
^ Benzo(a)pyrene TEQ (zero)	0.5	mg/kg	1.1	10.1	<10	<10	<10	<10	<0.5	<10	<10
^ Benzo(a)pyrene TEQ (half LOR)	0.5	mg/kg	1.4	10.1	<10	<10	<10	<10	0.6	<10	<10
^ Benzo(a)pyrene TEQ (LOR)	0.5	mg/kg	1.7	10.1	<10	<10	<10	<10	1.2	<10	<10
<b>EP080/071: Total Petroleum Hydrocarbons</b>											
C6 - C9 Fraction	10	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C14 Fraction	50	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
C15 - C28 Fraction	100	mg/kg	280	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	mg/kg	160	<100	<100	<100	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	50	mg/kg	440	<50	<50	<50	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>											
C6 - C10 Fraction	10	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 Fraction minus BTEX (F1)	10	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C10 - C16 Fraction	50	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16 - C34 Fraction	100	mg/kg	380	<100	<100	<100	<100	<100	<100	<100	<100
>C34 - C40 Fraction	100	mg/kg	110	<100	<100	<100	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	50	mg/kg	490	<50	<50	<50	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	50	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>											
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<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	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<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	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<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	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>											
Phenol-d6	13127-88-3	0.5	%	97.0	<10	<10	<10	<10	98.0	<10	<10
2-Chlorophenol-D4	93951-73-6	0.5	%	112	<10	<10	<10	<10	109	<10	<10
2,4,6-Tribromophenol	118-79-6	0.5	%	94.7	<10	<10	<10	<10	66.8	<10	<10
<b>EP075(SIM)T: PAH Surrogates</b>											
2-Fluorobiphenyl	321-60-8	0.5	%	96.0	<10	<10	<10	<10	101	<10	<10

