Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP01_0.2-0.3	TP02_0.2-0.3	TP03_0.2-0.3	TP04_0.0-0.1	TP05_0.0-0.1
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503068-001	ES1503068-002	ES1503068-003	ES1503068-004	ES1503068-005
EP068A: Organochlorine Pesticides (OC) - Continued									
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID	TP01_0.2-0.3	TP02_0.2-0.3	TP03_0.2-0.3	TP04_0.0-0.1	TP05_0.0-0.1
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
					ES1503068-001	ES1503068-002	ES1503068-003	ES1503068-004	ES1503068-005
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<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
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	90	170
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	150	310
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	310	460
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	550	940
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	100	190
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	300	580
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	260	270
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	660	1040
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	100	190
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID	TP01_0.2-0.3	TP02_0.2-0.3	TP03_0.2-0.3	TP04_0.0-0.1	TP05_0.0-0.1
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
					ES1503068-001	ES1503068-002	ES1503068-003	ES1503068-004	ES1503068-005
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		84.9	89.1	78.5	89.7	64.2
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		----	----	107	109	106
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		----	----	91.9	75.0	71.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		76.8	78.2	79.6	73.2	94.1
2-Chlorophenol-D4	93951-73-6	0.1	%		76.2	75.1	86.4	78.6	89.6
2.4.6-Tribromophenol	118-79-6	0.1	%		54.6	62.5	73.6	74.4	86.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		109	93.6	112	90.8	92.2
Anthracene-d10	1719-06-8	0.1	%		94.9	83.2	93.4	84.3	87.3
4-Terphenyl-d14	1718-51-0	0.1	%		99.1	90.4	96.7	87.0	93.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		88.9	88.0	91.7	88.4	82.6
Toluene-D8	2037-26-5	0.1	%		92.0	90.7	92.0	94.2	84.6
4-Bromofluorobenzene	460-00-4	0.1	%		95.2	94.7	98.5	96.4	87.0

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP06_0.0-0.1	TP08_0.2-0.3	TP09_0.0-0.1	HA01_0.0-0.1	QC101
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503068-006	ES1503068-007	ES1503068-008	ES1503068-009	ES1503068-010
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		9.6	5.3	10.6	6.9	21.8
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	No	----
Asbestos Type	1332-21-4	-	--		-	-	-	-	----
Sample weight (dry)	----	0.01	g		2250	2690	2120	908	----
APPROVED IDENTIFIER:	----	-	--		S.SPOONER	C.OWLER	S.SPOONER	G.MORGAN	----
EA200F: Friable Asbestos in Soil (non-NATA)									
Friable Asbestos	1332-21-4	0.0004	g		<0.0004	<0.0004	<0.0004	<0.0004	----
Free Fibres	----	5	Fibres		No	No	No	No	----
Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	%		<0.001	<0.001	<0.001	<0.001	----
Weight Used for % Calculation	----	0.0001	kg		2.25	2.69	2.12	0.908	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP06_0.0-0.1	TP08_0.2-0.3	TP09_0.0-0.1	HA01_0.0-0.1	QC101
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503068-006	ES1503068-007	ES1503068-008	ES1503068-009	ES1503068-010
EP068A: Organochlorine Pesticides (OC) - Continued									
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	TP06_0.0-0.1	TP08_0.2-0.3	TP09_0.0-0.1	HA01_0.0-0.1	QC101
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
Compound	CAS Number	LOR	Unit		ES1503068-006	ES1503068-007	ES1503068-008	ES1503068-009	ES1503068-010
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<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**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**100**	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**100**	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Client sample ID	TP06_0.0-0.1	TP08_0.2-0.3	TP09_0.0-0.1	HA01_0.0-0.1	QC101
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00	05-FEB-2015 15:00
					ES1503068-006	ES1503068-007	ES1503068-008	ES1503068-009	ES1503068-010
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
MM616: Coliforms MPN									
Escherichia coli	----	2	orgs/g		----	<2	<2	<2	<3
Faecal Coliforms	----	2	orgs/g		----	<2	<2	<2	----
VIC-MM616: Coliforms MPN									
Faecal Coliforms	----	2	orgs/g		----	----	----	----	<3
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		85.8	91.7	82.2	78.9	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		106	116	109	128	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		69.7	72.3	63.4	90.3	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		77.6	66.0	70.3	72.7	76.5
2-Chlorophenol-D4	93951-73-6	0.1	%		77.6	75.6	78.3	76.0	78.4
2.4.6-Tribromophenol	118-79-6	0.1	%		69.8	66.4	68.2	67.3	71.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		83.6	92.3	93.5	95.3	95.7
Anthracene-d10	1719-06-8	0.1	%		82.8	80.5	85.3	86.8	85.4
4-Terphenyl-d14	1718-51-0	0.1	%		85.2	87.0	87.1	89.9	88.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		87.9	88.5	86.9	77.6	86.4
Toluene-D8	2037-26-5	0.1	%		89.6	92.0	91.8	79.8	88.4
4-Bromofluorobenzene	460-00-4	0.1	%		93.9	96.2	94.7	83.9	92.1

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201	TP07_0.2-0.3	----	----	----
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1503068-011	ES1503068-025	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%		8.5	6.6	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	----	----	----
Asbestos Type	1332-21-4	-	--		-	-	----	----	----
Sample weight (dry)	----	0.01	g		965	1900	----	----	----
APPROVED IDENTIFIER:	----	-	--		C.OWLER	G.MORGAN	----	----	----
EA200F: Friable Asbestos in Soil (non-NATA)									
Friable Asbestos	1332-21-4	0.0004	g		<0.0004	<0.0004	----	----	----
Free Fibres	----	5	Fibres		No	No	----	----	----
Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	%		<0.001	<0.001	----	----	----
Weight Used for % Calculation	----	0.0001	kg		0.965	1.90	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201	TP07_0.2-0.3	----	----	----
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1503068-011	ES1503068-025	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
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	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	----	----
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	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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	----	----	----

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC201	TP07_0.2-0.3	----	----	----
			Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1503068-011	ES1503068-025	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(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+j)fluoranthene	205-99-2 205-82-3	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	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
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	----	----	----

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201	TP07_0.2-0.3	----	----	----
				Client sampling date / time	05-FEB-2015 15:00	05-FEB-2015 15:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1503068-011	ES1503068-025	----	----	----
EP080: BTEXN - Continued									
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	----	----	----
MM616: Coliforms MPN									
Escherichia coli	----	2	orgs/g		<2	----	----	----	----
VIC-MM616: Coliforms MPN									
Faecal Coliforms	----	2	orgs/g		<2	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	121	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		----	76.4	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		----	112	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		79.0	93.2	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%		81.4	99.3	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		65.1	70.1	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		92.7	101	----	----	----
Anthracene-d10	1719-06-8	0.1	%		85.5	96.6	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		84.3	98.1	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		84.8	83.0	----	----	----
Toluene-D8	2037-26-5	0.1	%		85.8	87.5	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		89.5	89.0	----	----	----

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	*Client sample ID - Client sampling date / time*	*Analytical Results*
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	TP01_0.2-0.3 - 05-FEB-2015 15:00	Mid orange - brown clay soil with a trace of vegetation.
EA200: Description	TP02_0.2-0.3 - 05-FEB-2015 15:00	Pale orange - brown clay soil.
EA200: Description	TP03_0.2-0.3 - 05-FEB-2015 15:00	Mid orange - brown clay soil with grey rocks.
EA200: Description	TP04_0.0-0.1 - 05-FEB-2015 15:00	Mid brown clay soil with plenty of vegetation.
EA200: Description	TP05_0.0-0.1 - 05-FEB-2015 15:00	Mid brown mulch.
EA200: Description	TP06_0.0-0.1 - 05-FEB-2015 15:00	Mid brown clay soil with grey and orange rocks.
EA200: Description	TP08_0.2-0.3 - 05-FEB-2015 15:00	Pale orange - brown clay soil plus some red rocks.
EA200: Description	TP09_0.0-0.1 - 05-FEB-2015 15:00	Mid brown clay soil with grey rocks.
EA200: Description	HA01_0.0-0.1 - 05-FEB-2015 15:00	Mid brown clay soil with some vegetation.
EA200: Description	QC201 - 05-FEB-2015 15:00	Pale orange - brown clay soil plus some red rocks.
EA200: Description	TP07_0.2-0.3 - 05-FEB-2015 15:00	Pale orange - brown clay soil with grey rocks.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1503068**	Page	: 1 of 19
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: Client Services
Address	: LEVEL 2 60 MARCUS CLARKE ST CANBERRA ACT, AUSTRALIA 2600	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: [redacted]@aecom.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 [redacted]	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 60339175 CHARNWOOD PHASE 2	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 10-FEB-2015
Sampler	: RO	Issue Date	: 19-FEB-2015
Order number	: 60339175, TASK NO.1.1		
		No. of samples received	: 32
Quote number	: EN/004/14	No. of samples analysed	: 12

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

This Quality Control Report contains the following information:

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

NATA 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 ir compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Sydney Inorganics
		Sydney Organics
		Newcastle - Asbestos
		WRG Subcontracting

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General Comments

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

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

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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%.

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 (%)*
EA055: Moisture Content (QC Lot: 3824114)									
ES1502902-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	44.8	45.5	1.6	0% - 20%
ES1502980-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.4	15.8	32.6	0% - 50%
EA055: Moisture Content (QC Lot: 3824115)									
ES1503068-009	HA01_0.0-0.1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.9	6.7	2.8	No Limit
ES1503109-018	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.4	15.5	1.0	0% - 50%
EA055: Moisture Content (QC Lot: 3828113)									
EM1501490-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.6	14.2	2.8	0% - 50%
ES1503578-046	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	3.4	4.2	20.8	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3821516)									
ES1503068-003	TP03_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1503068-009	HA01_0.0-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3828367)									
ES1503068-025	TP07_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3821519)									
ES1503068-003	TP03_0.2-0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

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 (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3821519) - continued									
ES1503068-009	HA01_0.0-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3828366)									
ES1503068-025	TP07_0.2-0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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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 (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3828366) - continued									
ES1503068-025	TP07_0.2-0.3	EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3821519)									
ES1503068-003	TP03_0.2-0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES1503068-009	HA01_0.0-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

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 (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3821519) - continued									
ES1503068-009	HA01_0.0-0.1	EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3828366)									
ES1503068-025	TP07_0.2-0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3821518)									
ES1503068-003	TP03_0.2-0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)p[illegible]ene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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Project : 60339175 CHARNWOOD PHASE 2

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3821518) - continued									
ES1503068-003	TP03_0.2-0.3	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1503068-009	HA01_0.0-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3828369)									
ES1503068-025	TP07_0.2-0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3828369) - continued									
ES1503068-025	TP07_0.2-0.3	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3821489)									
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
ES1503068-011	QC201	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3821517)									
ES1503068-003	TP03_0.2-0.3	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
ES1503068-009	HA01_0.0-0.1	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3828346)									
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3828368)									
ES1503068-025	TP07_0.2-0.3	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3821489)									
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1503068-011	QC201	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3821517)									
ES1503068-003	TP03_0.2-0.3	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1503068-009	HA01_0.0-0.1	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3828346)									
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3828368)									
ES1503068-025	TP07_0.2-0.3	EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 3821489)									
ES1503068-001	TP01_0.2-0.3	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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Work Order : ES1503068
Client : AECOM Australia Pty Ltd
Project : 60339175 CHARNWOOD PHASE 2

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 (%)*
EP080: BTEXN (QC Lot: 3821489) - continued									
ES1503068-001	TP01_0.2-0.3	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1503068-011	QC201	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 3828346)									
ES1503068-025	TP07_0.2-0.3	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
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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 Spike (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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3821516)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	93.3	57.4	117
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	102	57.4	117
EP068A: Organochlorine Pesticides (OC) (QCLot: 3821519)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	71	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	66	122
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	69	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	74.8	71	115
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	65	113
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	68	116
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	68	118
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	68	116
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	68	120
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	119
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	67	121
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	66	118
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	69	117
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	111	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	76	120
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	76	120
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	60	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.1	67	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	65	123
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	102	65	129
EP068A: Organochlorine Pesticides (OC) (QCLot: 3828366)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	71	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	66	122
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	106	69	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	71	115
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	65	113
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	116

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3828366) - continued								
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	68	118
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	105	68	116
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	108	68	120
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	69	119
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	106	67	121
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	103	66	118
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	117
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	76	120
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	111	76	120
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	107	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	60	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	103	67	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	65	123
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	103	65	129
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3821519)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	56	126
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	64	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	92.8	54	122
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	64	124
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	73	117
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	55	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	90.0	69	123
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	70	120
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	71	115
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	68	114
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	91.6	68	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	69	115
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	106	70	118
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	68	116
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	64	120
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	68	116
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	70	118
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	78.3	67	123
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	79.1	42	126
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3828366)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3828366) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	56	126
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	64	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	94.4	54	122
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	64	124
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	73	117
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	55	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	105	69	123
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	70	120
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	71	115
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	114
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	97.2	68	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	103	69	115
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	70	118
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	110	68	116
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	64	120
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	111	68	116
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	70	118
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	123
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	117	42	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3821518)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	89.7	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	83.6	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	87.4	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	85.0	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	89.4	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	92.2	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	89.5	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	90.1	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	83.3	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	92.6	81	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	4 mg/kg	84.2	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	92.8	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	79.1	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	76.1	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	78.3	71.7	113
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	80.0	72.4	114

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Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.0	80	124
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	87.4	77	123
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	86.6	79	123
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	88.4	77	123
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	88.2	79	123
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	92.0	79	123
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	80.2	79	123
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	79.6	79	125
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.0	73	121
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	88.6	81	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	4 mg/kg	80.4	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	89.0	77	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	86.4	76	122
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	77.8	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	84.6	71.7	113
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	90.2	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821489)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	26 mg/kg	119	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821517)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	200 mg/kg	92.0	71	131
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	300 mg/kg	101	74	138
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	200 mg/kg	87.5	64	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828346)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	26 mg/kg	94.4	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828368)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	200 mg/kg	89.4	71	131
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	300 mg/kg	96.3	74	138
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	200 mg/kg	103	64	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821489)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	121	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821517)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	94.9	70	130
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	350 mg/kg	104	74	138
EP071: >C34 - C40 Fraction	---	50	mg/kg	<100	150 mg/kg	98.4	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828346)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828346) - continued								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	93.8	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828368)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	89.5	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	102	74	138
EP071: >C34 - C40 Fraction	----	50	mg/kg	<100	150 mg/kg	90.2	63	131
EP080: BTEXN (QCLot: 3821489)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	97.6	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	109	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	105	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	108	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	110	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	108	62	138
EP080: BTEXN (QCLot: 3828346)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.4	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.2	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	85.6	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	87.1	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	85.5	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.6	62	138

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3821516)							
ES1503068-003	TP03_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	94.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)							
ES1503068-025	TP07_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	87.8	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3821519)							
ES1503068-003	TP03_0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.9	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	101	70	130

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Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3821519) - continued							
ES1503068-003	TP03_0.2-0.3	EP068: Aldrin	309-00-2	0.5 mg/kg	95.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	99.0	70	130
		EP068: Endrin	72-20-8	2 mg/kg	92.1	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	84.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3828366)							
ES1503068-025	TP07_0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	103	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	96.2	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	97.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	90.7	70	130
		EP068: Endrin	72-20-8	2 mg/kg	96.7	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	71.2	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3821519)							
ES1503068-003	TP03_0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	92.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	89.7	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	106	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.8	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	83.2	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3828366)							
ES1503068-025	TP07_0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	112	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	108	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	94.8	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	89.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	82.1	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3821518)							
ES1503068-003	TP03_0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	79.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.8	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)							
ES1503068-025	TP07_0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821489)							
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C9 Fraction	---	32.5 mg/kg	89.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821517)							
ES1503068-003	TP03_0.2-0.3	EP071: C10 - C14 Fraction	---	560 mg/kg	81.5	73	137
		EP071: C15 - C28 Fraction	---	2370 mg/kg	90.3	53	131
		EP071: C29 - C36 Fraction	---	1695 mg/kg	91.8	52	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828346)							
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828368)							
ES1503068-025	TP07_0.2-0.3	EP071: C10 - C14 Fraction	----	560 mg/kg	98.6	73	137
		EP071: C15 - C28 Fraction	----	2370 mg/kg	74.7	53	131
		EP071: C29 - C36 Fraction	----	1695 mg/kg	81.2	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821489)							
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	88.9	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821517)							
ES1503068-003	TP03_0.2-0.3	EP071: >C10 - C16 Fraction	>C10_C16	902 mg/kg	86.2	73	137
		EP071: >C16 - C34 Fraction	----	3190 mg/kg	105	53	131
		EP071: >C34 - C40 Fraction	----	1087 mg/kg	81.3	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828346)							
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	83.2	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828368)							
ES1503068-025	TP07_0.2-0.3	EP071: >C10 - C16 Fraction	>C10_C16	902 mg/kg	97.5	73	137
		EP071: >C16 - C34 Fraction	----	3190 mg/kg	64.5	53	131
		EP071: >C34 - C40 Fraction	----	1087 mg/kg	53.7	52	132
EP080: BTEXN (QCLot: 3821489)							
ES1503068-001	TP01_0.2-0.3	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.0	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	77.7	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.6	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.5	70	130
EP080: BTEXN (QCLot: 3828346)							
ES1503068-025	TP07_0.2-0.3	EP080: Benzene	71-43-2	2.5 mg/kg	71.7	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	75.9	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	74.9	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	76.1	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.9	70	130

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821489)										
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C9 Fraction	----	32.5 mg/kg	89.5	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821489)										
ES1503068-001	TP01_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	88.9	----	70	130	----	----
EP080: BTEXN (QCLot: 3821489)										
ES1503068-001	TP01_0.2-0.3	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	76.2	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.0	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	77.7	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.6	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.5	----	70	130	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3821516)										
ES1503068-003	TP03_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	94.2	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3821517)										
ES1503068-003	TP03_0.2-0.3	EP071: C10 - C14 Fraction	----	560 mg/kg	81.5	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	2370 mg/kg	90.3	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	1695 mg/kg	91.8	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3821517)										
ES1503068-003	TP03_0.2-0.3	EP071: >C10 - C16 Fraction	>C10_C16	902 mg/kg	86.2	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	3190 mg/kg	105	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	1087 mg/kg	81.3	----	52	132	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3821518)										
ES1503068-003	TP03_0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	79.6	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.8	----	70	130	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 3821519)										
ES1503068-003	TP03_0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.9	----	70	130	----	----
		EP068: Heptachlor	76-44-8	0.5 mg/kg	101	----	70	130	----	----
		EP068: Aldrin	309-00-2	0.5 mg/kg	95.4	----	70	130	----	----
		EP068: Dieldrin	60-57-1	0.5 mg/kg	99.0	----	70	130	----	----
		EP068: Endrin	72-20-8	2 mg/kg	92.1	----	70	130	----	----
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	84.0	----	70	130	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3821519)										
ES1503068-003	TP03_0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	92.2	----	70	130	----	----

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3821519) - continued										
ES1503068-003	TP03_0.2-0.3	EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	89.7	----	70	130	----	----
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	106	----	70	130	----	----
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.8	----	70	130	----	----
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	83.2	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828346)										
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.0	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828346)										
ES1503068-025	TP07_0.2-0.3	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	83.2	----	70	130	----	----
EP080: BTEXN (QCLot: 3828346)										
ES1503068-025	TP07_0.2-0.3	EP080: Benzene	71-43-2	2.5 mg/kg	71.7	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	76.2	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	75.9	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	74.9	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	76.1	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.9	----	70	130	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 3828366)										
ES1503068-025	TP07_0.2-0.3	EP068: gamma-BHC	58-89-9	0.5 mg/kg	103	----	70	130	----	----
		EP068: Heptachlor	76-44-8	0.5 mg/kg	96.2	----	70	130	----	----
		EP068: Aldrin	309-00-2	0.5 mg/kg	97.4	----	70	130	----	----
		EP068: Dieldrin	60-57-1	0.5 mg/kg	90.7	----	70	130	----	----
		EP068: Endrin	72-20-8	2 mg/kg	96.7	----	70	130	----	----
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	71.2	----	70	130	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3828366)										
ES1503068-025	TP07_0.2-0.3	EP068: Diazinon	333-41-5	0.5 mg/kg	112	----	70	130	----	----
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	108	----	70	130	----	----
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	94.8	----	70	130	----	----
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	89.6	----	70	130	----	----
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	82.1	----	70	130	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3828367)										
ES1503068-025	TP07_0.2-0.3	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	87.8	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828368)										
ES1503068-025	TP07_0.2-0.3	EP071: C10 - C14 Fraction	----	560 mg/kg	98.6	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	2370 mg/kg	74.7	----	53	131	----	----

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3828368) - continued										
ES1503068-025	TP07_0.2-0.3	EP071: C29 - C36 Fraction	----	1695 mg/kg	81.2	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3828368)										
ES1503068-025	TP07_0.2-0.3	EP071: >C10 - C16 Fraction	>C10_C16	902 mg/kg	97.5	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	3190 mg/kg	64.5	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	1087 mg/kg	53.7	----	52	132	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3828369)										
ES1503068-025	TP07_0.2-0.3	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	----	70	130	----	----

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **ES1503068**	Page	: 1 of 7
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: Client Services
Address	: LEVEL 2 60 MARCUS CLARKE ST CANBERRA ACT, AUSTRALIA 2600	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: [redacted]@aecom.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 [redacted]	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 60339175 CHARNWOOD PHASE 2	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 10-FEB-2015
Sampler	: RO	Issue Date	: 19-FEB-2015
Order number	: 60339175, TASK NO.1.1		
		No. of samples received	: 32
Quote number	: EN/004/14	No. of samples analysed	: 12

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

This Interpretive Quality Control Report contains the following information:

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

Page	: 2 of 7
Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (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	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC101, QC201	**05-FEB-2015**	----	----	----	**15-FEB-2015**	19-FEB-2015	✓
Soil Glass Jar - Unpreserved (EA055-103)							
TP07_0.2-0.3	**05-FEB-2015**	----	----	----	**18-FEB-2015**	19-FEB-2015	✓
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag (EA200)							
TP07_0.2-0.3	**05-FEB-2015**	---	04-AUG-2015	----	**19-FEB-2015**	04-AUG-2015	✓
Snap Lock Bag - Separate bag received (EA200)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC201	**05-FEB-2015**	---	04-AUG-2015	----	**19-FEB-2015**	04-AUG-2015	✓
EA200F: Friable Asbestos in Soil (non-NATA)							
Snap Lock Bag (EA200N)							
TP07_0.2-0.3	**05-FEB-2015**	---	04-AUG-2015	----	**19-FEB-2015**	18-AUG-2015	✓
Snap Lock Bag - Separate bag received (EA200N)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC201	**05-FEB-2015**	---	04-AUG-2015	----	**19-FEB-2015**	18-AUG-2015	✓

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

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	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1	**05-FEB-2015**	**16-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	28-MAR-2015	✓
Soil Glass Jar - Unpreserved (EP066)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**19-FEB-2015**	30-MAR-2015	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1	**05-FEB-2015**	**16-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	28-MAR-2015	✓
Soil Glass Jar - Unpreserved (EP068)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**19-FEB-2015**	30-MAR-2015	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1	**05-FEB-2015**	**16-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	28-MAR-2015	✓
Soil Glass Jar - Unpreserved (EP068)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**19-FEB-2015**	30-MAR-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC101, QC201	**05-FEB-2015**	**16-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	28-MAR-2015	✓
Soil Glass Jar - Unpreserved (EP071)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**19-FEB-2015**	30-MAR-2015	✓

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Work Order	: ES1503068
Client	: AECOM Australia Pty Ltd
Project	: 60339175 CHARNWOOD PHASE 2

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	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC101, QC201	**05-FEB-2015**	**16-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	28-MAR-2015	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**18-FEB-2015**	30-MAR-2015	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC101, QC201	**05-FEB-2015**	**13-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	19-FEB-2015	✓
Soil Glass Jar - Unpreserved (EP080)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**18-FEB-2015**	19-FEB-2015	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
TP01_0.2-0.3, TP02_0.2-0.3, TP03_0.2-0.3, TP04_0.0-0.1, TP05_0.0-0.1, TP06_0.0-0.1, TP08_0.2-0.3, TP09_0.0-0.1, HA01_0.0-0.1, QC101, QC201	**05-FEB-2015**	**13-FEB-2015**	19-FEB-2015	✓	**17-FEB-2015**	19-FEB-2015	✓
Soil Glass Jar - Unpreserved (EP080)							
TP07_0.2-0.3	**05-FEB-2015**	**18-FEB-2015**	19-FEB-2015	✓	**18-FEB-2015**	19-FEB-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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	6	59	**10.2**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	3	23	**13.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	3	13	**23.1**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	3	16	**18.8**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	3	20	**15.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	3	21	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	**8.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	13	**15.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	16	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	2	20	**10.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	21	**9.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	**8.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	13	**15.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	16	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	2	20	**10.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	21	**9.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	**8.7**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	13	**15.4**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	16	**12.5**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	2	20	**10.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	2	21	**9.5**	**5.0**	✓	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
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Friable Asbestos and sample weight and calculation of percentage concentrations per NEPM protocols. Friable Asbestos is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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.
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.
Faecal Coliforms by MPN	* MM616	SOIL	Microbiological analysis subcontracted to ALS Scoresby. NATA accreditation does not cover performance of this service.

Preparation Methods	Method	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.
Tumbler Extraction of Solids	ORG17	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 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.

Summary of Outliers

Outliers : Quality Control Samples

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

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

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

Outliers : Frequency of Quality Control Samples

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

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

SGS 3264-205

Form: 1 of 4

AECOM

Chain of Custody & Analysis Request Form

AECOM - Canberra
Level 2, 60 Marcus Clarke Street
Canberra, ACT 2600
Tel: 02 6201 3000
Fax: 02 6201 3099
Email: [redacted]@aecom.com
[redacted]@aecom.com

Laboratory Details
Lab. Name: ALS Sydney
Lab. Address: Smithfield
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: EN/004/14

Project Name: Charnwood Phase 2 **Project Number:** 60339175 **Purchase Order Number:** Project 60339175, Task No. 1.1

Sample collected by: [redacted] **Sample Results to be returned to:** ALS Sydney

Specifications:

	(Tick)		
1. Urgent TAT required? (please circle: 24hr 48hr _____days) STANDARD	☐ Yes	☑ No	☐ N/A
2. Fast TAT Guarantee Required?	☐ Yes	☑ No	☐ N/A
3. Is any sediment layer present in waters to be excluded from extractions?	☐ Yes	☐ No	☑ N/A
4. Special storage requirements?	☐ Yes	☐ No	☑ N/A
5. Preservation requirements?	☐ Yes	☐ No	☑ N/A
6. Other requirements? ☐ Fax ☐ Hard copy ☑ Email	☐ Yes	☐ No	☑ N/A

7. Report Format: 8. Project Manager: tel:

Analysis Request

Remarks & comments: [redacted] Forward Lab / Split WO
Lab / Analysis: [redacted]
Organised By / Date: ①,⑫
Relinquished By / Date: SGS - QC200
Consignment / Courier:
WO No:
Attach By PO / Internal Sheet:

Lab. ID	Sample ID	Sampling Date	Sampling Time	Matrix: soil	water	other	Preservation: filtered	acid	ice	other	Container (No. & type)	TPH	BTEX	Lead	EA200 F	On Hold
1	BH01_0.0-0.1	4/2/15	12:00	✓					✓		1X Jar+Bag	✓	✓	✓	✓	
2	BH01_0.5-0.6										1X Jar+Bag					✓
3	BH01_1.0-1.1										1X Jar	✓	✓	✓	[redacted]	
4	BH01_2.0-2.1										1X Jar					✓
5	BH01_3.0-3.1										1X Jar					✓
6	BH01_4.0-4.1										1X Jar					✓
7	BH01_5.0-5.1										1X Jar					✓
8	BH01_6.0-6.1										1X Jar					✓
9	BH01_7.0-7.1										1X Jar					✓
10	BH01_7.4-8.0										1X Jar	✓	✓	✓	[redacted]	

RECEIVED
09 FEB 2015
313604?

Environmental Division
Sydney
Work Order
ES1502790
Telephone : +61-2-8784 8555

Relinquished By: [redacted] Date: 04.02.2015 Time: 14:00 of: AECOM

Received by: Ben B Name: Temp = 19.9°C Date: 04 FEB 2015 Time: 17:30 of:

Received in good condition? Yes/No/NA Samples received chilled? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand Consignment Note No. Transport Co:

Relinquished By: Name: Date: Time: of:

Received by: Name: Date: 6/2 Time: 0800 of: ALS

Received in good condition? Yes/No/NA Samples received chilled? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand Consignment Note No. Transport Co:

Form: 2 of 4

AECOM

Chain of Custody & Analysis Request Form

AECOM - Canberra
Level 2, 60 Marcus Clarke Street
Canberra, ACT 2600
Tel: 02 6201 3000
Fax: 02 6201 3099
Email: [redacted]

Laboratory Details
Lab. Name: ALS Sydney
Lab. Address: Smithfield
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: EN/004/14

Project Name: Charnwood Phase 2 **Project Number:** 60339175 **Purchase Order Number:** Project 60339175, Task No. 1.1

Sample collected by: [redacted] **Sample Results to be returned to:** ALS Sydney

Specifications:	(Tick)		
1. Urgent TAT required? (please circle: 24hr 48hr _____days) STANDARD	☐ Yes	☑ No	☐ N/A
2. Fast TAT Guarantee Required?	☐ Yes	☑ No	☐ N/A
3. Is any sediment layer present in waters to be excluded from extractions?	☐ Yes	☐ No	☑ N/A
4. Special storage requirements?	☐ Yes	☐ No	☑ N/A
5. Preservation requirements?	☐ Yes	☐ No	☑ N/A
6. Other requirements? ☐ Fax ☐ Hard copy ☑ Email	☐ Yes	☐ No	☑ N/A
7. Report Format: 8. Project Manager:			tel:

Lab. ID	Sample ID	Sampling Date	Sampling Time	Matrix: soil	Matrix: water	Matrix: other	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: TPH	BTEX	Lead	EA200 F On Hold	Remarks & comments
11	BH02_0.05-0.15	4/2/15	12:00	✓					✓		1x Jar+Bag	✓	✓	✓	✓	
12	BH02_0.2-0.3			✓					✓		1x Jar+Bag	✓	✓	✓	✓	
13	BH02_0.5-0.6			✓					✓		1x Jar	✓	✓	✓		
14	BH02_1.0-1.1			✓					✓						✓	
15	BH02_2.0-2.1			✓					✓						✓	
16	BH02_3.0-3.1			✓					✓						✓	
17	BH02_4.0-4.1			✓					✓						✓	
18	BH02_5.0-5.1			✓					✓						✓	
19	BH02_6.0-6.1			✓					✓						✓	
20	BH02_7.0-7.1			✓					✓						✓	

Relinquished By: [redacted] Date: 4/2/2015 Time: 14:00 of: AECOM

Received by: Ben B 04 FEB 2015 17:30 Name: TEMP = 19.9°C Date: Time: of:

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

Relinquished By: Name: Date: Time: of:

Received by: Name: Date: 6/2 Time: 0800 of: ALS

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Posta ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

Form: 3 of 4

AECOM

Chain of Custody & Analysis Request Form

AECOM - Canberra
Level 2, 60 Marcus Clarke Street
Canberra, ACT 2600
Tel: 02 6201 3000
Fax: 02 6201 3099
Email: [redacted]

Laboratory Details
Lab. Name: ALS Sydney
Lab. Address: Smithfield
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: EN/004/14

Project Name: Charnwood Phase 2 **Project Number:** 60339175 **Purchase Order Number:** Project 60339175, Task No. 1.1

Sample collected by: [redacted] **Sample Results to be returned to:** ALS Sydney

Specifications:	(Tick)		
1. Urgent TAT required? (please circle: 24hr 48hr _____days) STANDARD	☐ Yes	☑ No	☐ N/A
2. Fast TAT Guarantee Required?	☐ Yes	☑ No	☐ N/A
3. Is any sediment layer present in waters to be excluded from extractions?	☐ Yes	☐ No	☑ N/A
4. Special storage requirements?	☐ Yes	☐ No	☑ N/A
5. Preservation requirements?	☐ Yes	☐ No	☑ N/A
6. Other requirements? ☐ Fax ☐ Hard copy ☑ Email	☐ Yes	☐ No	☑ N/A
7. Report Format: 8. Project Manager:			tel:

Lab. ID	Sample ID	Sampling Date	Sampling Time	Matrix: soil	Matrix: water	Matrix: other	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: TPH	BTEX	Lead	CA200 F	On Hold	Remarks & comments
21	BH02_7.9-8.0	4/2/15	12:00	✓					✓		1x Jar	✓	✓	✓	[illegible]		
22	BH03_0.1-0.2	↓	↓	✓					✓		1x JarBag					✓	
23	BH03_0.2-0.3			✓					✓		1x JarBag	✓	✓	✓	✓		
24	BH03_0.4-0.5			✓					✓		1x Jar					✓	
25	BH03_1.0-1.1			✓					✓							✓	
26	BH03_2.0-2.1			✓					✓							✓	
27	BH03_3.0-3.1			✓					✓							✓	
28	BH03_4.0-4.1			✓					✓							✓	
29	BH03_5.0-5.1			✓					✓							✓	
30	BH03_6.0-6.1	↓	↓	✓					✓		↓					✓	

Relinquished By: [redacted] Date: 27/08/2014 Time: 14:00 of: AECOM

Received by: Name: [illegible] Date: 04 FEB 2015 Time: 17:30 of: TEMP = 19.9°C

Received in good condition? Yes/No/NA
Samples received chilled? Yes/No/NA
Method of Shipment: ☐ Courier ☐ Postal ☐ By Hand
Consignment Note No.
Transport Co:

Relinquished By: Name: Date: Time: of:

Received by: Name: Date: 6/2 Time: 08:00 of:

Received in good condition? Yes/No/NA
Samples received chilled? Yes/No/NA
Method of Shipment: ☐ Courier ☐ Postal ☐ By Hand
Consignment Note No.
Transport Co:

Form: 4 of 4

AECOM

Chain of Custody & Analysis Request Form

AECOM - Canberra
Level 2, 60 Marcus Clarke Street
Canberra, ACT 2600
Tel: 02 6201 3000
Fax: 02 6201 3099
Email: [redacted]

Laboratory Details
Lab. Name: ALS Sydney
Lab. Address: Smithfield
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: EN/004/14

Project Name: Charnwood Phase 2 **Project Number:** 60339175 **Purchase Order Number:** Project 60339175, Task No. 1.1

Sample collected by: [redacted] **Sample Results to be returned to:** ALS Sydney

Specifications:	(Tick)		
1. Urgent TAT required? (please circle: 24hr 48hr _____days) STANDARD	☐ Yes	☑ No	☐ N/A
2. Fast TAT Guarantee Required?	☐ Yes	☑ No	☐ N/A
3. Is any sediment layer present in waters to be excluded from extractions?	☐ Yes	☐ No	☑ N/A
4. Special storage requirements?	☐ Yes	☐ No	☑ N/A
5. Preservation requirements?	☐ Yes	☐ No	☑ N/A
6. Other requirements? ☐ Fax ☐ Hard copy ☑ Email	☐ Yes	☐ No	☑ N/A
7. Report Format: 8. Project Manager:			tel:

Lab. ID	Sample ID	Sampling Date	Sampling Time	Matrix: soil	water	other	Preservation: filtered	acid	ice	other	Container (No. & type)	TPH	BTEX	Lead	EA 200 F	On Hold	Please send to SGS Sydney	Remarks & comments
31	BH03_7.0-7.1	4/2/15	12:00	✓					✓		1x Tar					✓		
32	BH03_7.9-8.0	4/2/15	↓	✓					✓		1x Tar	✓	✓	✓				
33	QC 100	4/2/15		✓					✓		1x Tar	✓	✓	✓				
-1	QC 200	4/2/15	↓	✓					✓		1x Tar + Bag	✓	✓	✓	✓	✓		* Please send to SGS Sydney

Relinquished By: [redacted] Date: 27/08/2014 Time: 14:00 of: AECOM

Received by: Ben 04 FEB 2015 17:30 Name: Temp = 19.9°C Date: Time: of:

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

Relinquished By: Name: Date: Time: of:

Received by: Name: Dan J Date: 6/2 Time: 14 of:

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

AU.SampleReceipt.Sydney (Sydney)

From: [redacted]@aecom.com]
Sent: Monday, 9 February 2015 4:17 PM
To: AU.SampleReceipt.Sydney (Sydney)
Subject: RE: 60339175 - Charnwood Phase 2 (SGS Ref. SE136047)

Hi Karla,

Pleas conduct the following analysis on those samples ticked as "EA200F":

Asbestos semi-quantitation in soil (<1Kg) AS4964.2004 0.01% 42.00

Thanks,

Phil

[redacted]
D +61 2 8934 0481 M +[redacted]
Phil.Limage@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

From: AU.SampleReceipt.Sydney (Sydney) [mailto:AU.SampleReceipt.Sydney@sgs.com]
Sent: Monday, 9 February 2015 4:13 PM
To: O'Leary, Ryan
Cc: [redacted]
Subject: 60339175 - Charnwood Phase 2 (SGS Ref. SE136047)
Importance: High

Hi Ryan / Phil,

Could you please specify what EA200F means in the attached COC?

Thank You,

Kind Regards

[redacted]
Sample Administration Officer

SGS Australia Pty Ltd
Unit 16, 33 Maddox St
Alexandria, NSW, 2015

Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499
E-mail: au.samplereceipt.sydney@sgs.com

AU.SampleReceipt.Sydney (Sydney)

From: O'Leary, Ryan [[redacted]@aecom.com]
Sent: Monday, 9 February 2015 4:20 PM
To: AU.SampleReceipt.Sydney (Sydney)
Cc: [redacted]
Subject: RE: 60339175 - Charnwood Phase 2 (SGS Ref. SE136047)

Hi Karla,

Sorry. This refers to Asbestos presence/absence and fibres. Please could you analyse for this?

Thanks

[redacted]
D +61 2 6201 3017
[redacted]@aecom.com

AECOM
Level 2, St George Centre, 60 Marcus Clarke Street, Canberra, ACT 2601
PO Box 1942 Canberra City 2601
T +61 2 6201 3000 F +61 2 6201 3099
www.aecom.com

From: AU.SampleReceipt.Sydney (Sydney) [mailto:AU.SampleReceipt.Sydney@sgs.com]
Sent: Monday, 9 February 2015 4:13 PM
To: [redacted]
Cc: Limage, Phil
Subject: 60339175 - Charnwood Phase 2 (SGS Ref. SE136047)
Importance: High

Hi Ryan / Phil,

Could you please specify what EA200F means in the attached COC?

Thank You,

Kind Regards

[redacted]
Sample Administration Officer

SGS Australia Pty Ltd
Unit 16, 33 Maddox St
Alexandria, NSW, 2015

Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499
E-mail: au.samplereceipt.sydney@sgs.com

494

SGS

Job: SE136047

	Matrix	250 JAR	125 JAR	BAG			1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	1L UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 NaThio GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P				Storage Location	Bottles Supplied By	Comment	Cooling Method
																												CP
1	Soil	1																							SSU	ALS	Fwd	Temp
																												7.5
																												Good Order
																												(Y) / N
																												Clearly Labelled
																												(Y) N
																												Correct Pres.
																												(Y) N
																												No Head-space
																												(Y) N / NA
																												Sufficient Vol
																												(Y) N
																												Doc Date
																												09/02
																												Doc Type
																												C02
																												Complete Docs
																												(Y) N
																												Requested TAT
																												5da

SAMPLE RECEIPT ADVICE

SE136047

CLIENT DETAILS

Contact	[redacted]
Client	AECOM Australia Pty Ltd
Address	Level 2, 60 Marcus Clarke Street ACT 2600
Telephone	02 6201 3000
Facsimile	02 6201 3099
Email	[redacted]@aecom.com
Project	**60339175 - Charnwood Phase 2**
Order Number	(Not specified)
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Mon 9/2/2015
Report Due	Mon 16/2/2015
SGS Reference	**SE136047**

SUBMISSION DETAILS

This is to confirm that 1 sample was received on Monday 9/2/2015. Results are expected to be ready by Monday 16/2/2015. Please quote SGS reference SE136047 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	9/2/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	7.5°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

A separate homogenised portion (~100g) was not supplied for Asbestos analysis. SGS will proceed by sub-sampling a portion from the glass jar supplied, on the provision that a comment will be reflected on the final report regarding this sub-sampling.

SAMPLE RECEIPT ADVICE

SE136047

CLIENT DETAILS

Client AECOM Australia Pty Ltd

Project 60339175 - Charnwood Phase 2

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES from	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	QC200	2	1	1	10	12	8

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

ANALYTICAL REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Contact	[redacted]	Manager	Huong Crawford
Client	AECOM Australia Pty Ltd	Laboratory	SGS Alexandria Environmental
Address	Level 2, 60 Marcus Clarke Street ACT 2600	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 6201 3000	Telephone	+61 2 8594 0400
Facsimile	02 6201 3099	Facsimile	+61 2 8594 0499
Email	[redacted]@aecom.com	Email	au.environmental.sydney@sgs.com
Project	**60339175 - Charnwood Phase 2**	SGS Reference	**SE136047 R0**
Order Number	**60339175**	Report Number	0000102757
Samples	1	Date Reported	16 Feb 2015
Date Started	13 Feb 2015	Date Received	09 Feb 2015

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all samples using trace analysis technique.
SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

SGS

ANALYTICAL REPORT

SE136047 R0

Parameter	Units	LOR	Sample Number: SE136047.001 Sample Matrix: Soil Sample Date: 04 Feb 2015 Sample Name: QC200
VOC's in Soil Method: AN433/AN434			
Monocyclic Aromatic Hydrocarbons			
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Polycyclic VOCs			
Naphthalene	mg/kg	0.1	<0.1
urrogates			
Dibromofluoromethane (Surrogate)	%	-	**85**
d4-1,2-dichloroethane (Surrogate)	%	-	**86**
d8-toluene (Surrogate)	%	-	**83**
Bromofluorobenzene (Surrogate)	%	-	**93**
Totals			
Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410			
TRH C6-C10	mg/kg	25	<25
TRH C6-C9	mg/kg	20	<20
Surrogates			
Dibromofluoromethane (Surrogate)	%	-	**85**
d4-1,2-dichloroethane (Surrogate)	%	-	**86**
d8-toluene (Surrogate)	%	-	**83**
Bromofluorobenzene (Surrogate)	%	-	**93**
VPH F Bands			
enzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

SGS

ANALYTICAL REPORT

SE136047 R0

Parameter	Units	LOR	Sample Number: SE136047.001 Sample Matrix: Soil Sample Date: 04 Feb 2015 Sample Name: QC200
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403			
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH C10-C36 Total	mg/kg	110	<110
TRH C10-C40 Total	mg/kg	210	<210
TRH F Bands			
TRH >C10-C16 (F2)	mg/kg	25	<25
TRH >C10-C16 (F2) minus Naphthalene	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320			
Lead, Pb	mg/kg	1	**13**
Fibre Identification in soil Method: AN602			
FibreID			
Asbestos Detected	No unit	-	No
SemiQuant			
Estimated Fibres	%w/w	0.01	<0.01
Moisture Content Method: AN002			
% Moisture	%	0.5	**8.3**

SGS

QC SUMMARY

SE136047 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB072150	%	0.5	0 - 7%

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Lead, Pb	LB072127	mg/kg	1	<1	1 - 18%	100%

TRH (Total Recoverable Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH C10-C14	LB071925	mg/kg	20	<20	0%	95%
TRH C15-C28	LB071925	mg/kg	45	<45	15%	93%
TRH C29-C36	LB071925	mg/kg	45	<45	0%	75%
TRH C37-C40	LB071925	mg/kg	100	<100	0%	NA
TRH C10-C36 Total	LB071925	mg/kg	110	<110	10%	NA
TRH C10-C40 Total	LB071925	mg/kg	210	<210	7%	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH >C10-C16 (F2)	LB071925	mg/kg	25	<25	0%	95%
TRH >C10-C16 (F2) minus Naphthalene	LB071925	mg/kg	25	<25		NA
TRH >C16-C34 (F3)	LB071925	mg/kg	90	<90	13%	90%
TRH >C34-C40 (F4)	LB071925	mg/kg	120	<120	0%	70%

VOC's in Soil **Method: ME-(AU)-[ENV]AN433/AN434**

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene	LB071900	mg/kg	0.1	<0.1	75%
Toluene	LB071900	mg/kg	0.1	<0.1	81%
Ethylbenzene	LB071900	mg/kg	0.1	<0.1	87%
m/p-xylene	LB071900	mg/kg	0.2	<0.2	88%
o-xylene	LB071900	mg/kg	0.1	<0.1	85%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB071900	mg/kg	0.1	<0.1	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB071900	%	-	95%	88%
d4-1,2-dichloroethane (Surrogate)	LB071900	%	-	93%	87%
d8-toluene (Surrogate)	LB071900	%	-	92%	89%
Bromofluorobenzene (Surrogate)	LB071900	%	-	101%	111%

Totals

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Total Xylenes*	LB071900	mg/kg	0.3	<0.3	NA
Total BTEX*	LB071900	mg/kg	0.6	<0.6	NA

SGS

QC SUMMARY

SE136047 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C10	LB071900	mg/kg	25	<25	90%
TRH C6-C9	LB071900	mg/kg	20	<20	85%

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB071900	%	-	95%	88%
d4-1,2-dichloroethane (Surrogate)	LB071900	%	-	93%	87%
d8-toluene (Surrogate)	LB071900	%	-	92%	89%
Bromofluorobenzene (Surrogate)	LB071900	%	-	101%	111%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene (F0)	LB071900	mg/kg	0.1	<0.1	NA
TRH C6-C10 minus BTEX (F1)	LB071900	mg/kg	25	<25	105%

SGS

METHOD SUMMARY

SE136047 R0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependant on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

SGS

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FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
^	Performed by outside laboratory.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

STATEMENT OF QA/QC PERFORMANCE

SE136047 R0

CLIENT DETAILS		LABORATORY DETAILS	
Contact	[redacted]	Manager	[redacted]
Client	AECOM Australia Pty Ltd	Laboratory	SGS Alexandria Environmental
Address	Level 2, 60 Marcus Clarke Street ACT 2600	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 6201 3000	Telephone	+61 2 8594 0400
Facsimile	02 6201 3099	Facsimile	+61 2 8594 0499
Email	[redacted]@aecom.com	Email	au.environmental.sydney@sgs.com
Project	**60339175 - Charnwood Phase 2**	SGS Reference	SE136047 R0
Order Number	**60339175**	Report Number	0000102758
Samples	1	Date Reported	16 Feb 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	9/2/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	7.5°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE136047 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB072192	04 Feb 2015	09 Feb 2015	04 Feb 2016	13 Feb 2015	04 Feb 2016	16 Feb 2015

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB072150	04 Feb 2015	09 Feb 2015	18 Feb 2015	13 Feb 2015	18 Feb 2015	16 Feb 2015

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB072127	04 Feb 2015	09 Feb 2015	03 Aug 2015	13 Feb 2015	03 Aug 2015	16 Feb 2015

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB071925	04 Feb 2015	09 Feb 2015	18 Feb 2015	10 Feb 2015	22 Mar 2015	16 Feb 2015

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB071900	04 Feb 2015	09 Feb 2015	18 Feb 2015	10 Feb 2015	22 Mar 2015	16 Feb 2015

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC200	SE136047.001	LB071900	04 Feb 2015	09 Feb 2015	18 Feb 2015	10 Feb 2015	22 Mar 2015	16 Feb 2015

SGS

SURROGATES

SE136047 R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil — Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QC200	SE136047.001	%	60 - 130%	93
d4-1,2-dichloroethane (Surrogate)	QC200	SE136047.001	%	60 - 130%	86
d8-toluene (Surrogate)	QC200	SE136047.001	%	60 - 130%	83
Dibromofluoromethane (Surrogate)	QC200	SE136047.001	%	60 - 130%	85

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QC200	SE136047.001	%	60 - 130%	93
d4-1,2-dichloroethane (Surrogate)	QC200	SE136047.001	%	60 - 130%	86
d8-toluene (Surrogate)	QC200	SE136047.001	%	60 - 130%	83
Dibromofluoromethane (Surrogate)	QC200	SE136047.001	%	60 - 130%	85

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METHOD BLANKS

SE136047 R0

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB072127.001	Lead, Pb	mg/kg	1	<1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB071925.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB071900.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	95
		d4-1,2-dichloroethane (Surrogate)	%	-	93
		d8-toluene (Surrogate)	%	-	92
		Bromofluorobenzene (Surrogate)	%	-	101
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB071900.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	95
		d4-1,2-dichloroethane (Surrogate)	%	-	93
		d8-toluene (Surrogate)	%	-	92

SGS

DUPLICATES

SE136047 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE136041.012	LB072150.011	% Moisture	%w/w	0.5	8.24524312898	8.8028169014	42	7
SE136067.003	LB072150.022	% Moisture	%	0.5	3	2.9147982062	64	3
SE136067.004	LB072150.024	% Moisture	%	0.5	75.2192982456	75.4022988505	31	0

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE136055.006	LB072127.014	Lead, Pb	mg/kg	1	3.11357902252	2.6016173104	65	18
SE136055.017	LB072127.024	Lead, Pb	mg/kg	1	1.68645864581	1.6726328175	90	1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE136041.001	LB071925.009		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	125	146	63	15
			TRH C29-C36	mg/kg	45	79	79	87	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	204	225	81	10
			TRH C10-C40 Total	mg/kg	210	204	225	128	7
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	185	210	76	13
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

LABORATORY CONTROL SAMPLES

SE136047 R0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB072127.002	Lead, Pb	mg/kg	1	50	50	80 - 120	100

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB071925.002		TRH C10-C14	mg/kg	20	38	40	60 - 140	95
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	93
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	75
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	38	40	60 - 140	95
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	90
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	70

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB071900.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.2	2.9	60 - 140	75
		Toluene	mg/kg	0.1	2.4	2.9	60 - 140	81
		Ethylbenzene	mg/kg	0.1	2.5	2.9	60 - 140	87
		m/p-xylene	mg/kg	0.2	5.1	5.8	60 - 140	88
		o-xylene	mg/kg	0.1	2.5	2.9	60 - 140	85
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	5	60 - 140	87
		d8-toluene (Surrogate)	mg/kg	-	4.4	5	60 - 140	89
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.6	5	60 - 140	111

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB071900.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	90
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	85
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	5	60 - 140	87
		d8-toluene (Surrogate)	mg/kg	-	4.4	5	60 - 140	89
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.6	5	60 - 140	111
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	105

SGS

MATRIX SPIKES

SE136047 R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR

MATRIX SPIKE DUPLICATES

SE136047 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

SGS

FOOTNOTES

SE136047 R0

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

AECOM

ATTACHMENT 6 – CALIBRATION RECORDS

AECOM

ANZ

PID Calibration Form

Q4AN(EV)-336-FM12

Project Name	Charnwood Phase 2
Project Number	60339175
Frequency	☒ Daily on User ☐ Twice Daily

PID Serial No.	Date/Time	Hired Equipment Y/N (if yes, attach calibration sheet)	Fresh Air Cal OK Y/N	Gas	Calibrate OK Y/N	Filter Change Required Y/N	Pump Clean Required Y/N	Charging Required Y/N	Comments	Name (print)	Signature
SN: 592-905519	4/2/15 8:15AM	N	Y	Y	Y	N	N	N	99.9 ppm	Ryan O'Leary	
SN: 592-905519	5/2/15 8:30AM	N	Y	Y	Y	N	N	N	100.1 ppm	Ryan O'Leary	

AECOM

AECOM Australia Pty Ltd (2015b) *Excavated Soils, Block 6 Section 97, Former West Belconnen Fire Station, Charnwood, ACT, Validation Letter*, issued 30 April 2015.

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30 April 2015

[redacted]
Land Development Agency
Level 7 TransACT House
470 Northbourne Avenue
Dickson ACT 2602

Dear [redacted]

Excavated Soils | Block 6, Section 97, Former West Belconnen Fire Station, Charnwood, ACT | Validation Letter

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by the Land Development Agency (LDA) to prepare this report to validate the completion of remediation works undertaken at the property identified as Block 6, Section 97 Charnwood, ACT.

The property is proposed to be developed from a former fire station to a childcare centre. A Stage 2 Environmental Site Assessment (AECOM, 2015) identified one sample (TP05_0.0-0.1) which exceeded investigation criteria for TRH C10-C16 (Less Naphthalene) (190 mg/kg) and indicates a potential risk in surface soils to the proposed future land use. As such, remedial actions were recommended to remove the impacted soils.

In addition, aqueous film forming foam (AFFF), used during firefighting training previously at the Site, was also analysed for as part of this validation exercise.

Recommendations from AECOM (2015) proposed remedial actions via targeted excavation, removal and validation of the surface soils in AEC04 adjacent to sample location TP05 to remove the potentially unacceptable risk to human health within the childcare land use scenario.

2.0 Objectives

The objectives of the works were to:

- Excavate TRH-impacted soils around TP05.
- Assess the remaining soils and validate whether the remediation excavation is suitable for the proposed future childcare centre land use.

3.0 Scope of Works

In order to achieve the objectives, the following scope of works were completed:

- Excavation of TP05 (dimensions of 7 m X L 5 m W x 0.3 m D) and removal to a pre-prepared stockpile area.
- Collection of 3 soil validation samples (VS01 to VS03) from the excavation base plus two quality control / quality assurance (QA/QC) samples, QC102 and QC202.
- Laboratory analysis of the soil samples for contaminants of potential concern (CoPC) identified during AECOM (2015):
  - Total recoverable hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylenes (BTEX).
  - Heavy metals.
  - Polycyclic aromatic hydrocarbons (PAHs) including naphthalene.
  - Polychlorinated biphenyls (PCBs).
  - Organochlorine and organophosphorous pesticides (OCPs and OPPs).
  - Asbestos.
  - AFFF compounds perfluorooctane sulphonate (PFOS) and perfluorooctanoic acid (PFOA).

AECOM

- All analysis was completed by National Association of Testing Authority (NATA) accredited laboratories.

- Prepare of this soil validation letter report.

4.0 Site Identification

The site is identified as:

Table 1 Site Identification Details

Consideration	Details
Site Owner	Land Development Agency
Site Occupier	Formerly ESA/ACT Fire and Rescue
Site Address & Legal Description	35 Lhotsky Street Block 6, Section 97 Charnwood
Zoning	TSZ2- Services
Geographical Coordinates	35°12'15.4"S 149°01'42.2"E
Site Elevation (m AHD)	572.7
Site Area (approximate)	3638 m²

The findings of AECOM (2015) developed a conceptual site model (CSM) identifying the sources of CoPC, potential receptors (humans and the environment) and potential transport mechanisms. One AEC (AEC04) posed a potentially unacceptable risk to human health for the proposed future childcare land use – that is, surface soils associated with test pit TP05.

Table 2 Transport Mechanisms, Potential for Exposure and Recommended Mitigations

Transport Mechanism	Details	Potential for Exposure	Recommended Mitigation
Direct contact, ingestion of impacted soils and contaminant vapour inhalation by future Site users.	Volatile contaminants exist in surface soils.	Isolated to the surface - as demonstrated with vertical and lateral samples reporting no exceedances- and able to be mitigated and reduced to not pose an unacceptable on-going risk during the design and construction phase of the childcare centre.	Bulk removal of the existing topsoils to a depth below TP05_0.0-0.1, off-Site disposal of the impacted material and importation of clean fill to replace.

TP05 is located within AEC04 (refer to **Figure 1** in **Appendix A**).

5.0 Site Validation Criteria

Based on the development of the preliminary CSM in AECOM (2015) for the Site, the following validation acceptance criteria (VAC) are considered appropriate to the works

Given the future childcare centre land use of the Site, the following hierarchy of screening criteria will be adopted.

During demolition and construction of the childcare centre, protection of human health and the environment should be addressed by a Construction Environmental Management Plan endorsed by the ACT EPA.

As the Site will change to childcare centre land use with minimal plant life, an assessment of potential on-Site ecological risks from soils is not considered applicable for further investigation.

As the childcare centre is the most sensitive land use receptor, risks future commercial and intrusive maintenance workers (i.e. less sensitive land use scenarios) are considered covered within the assessment.

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- National Environment Protection Measure (NEPM), Assessment of Site Contamination (ASC) (National Environment Protection Council [NEPC], 1999 as amended (2013): Schedule B1. Soil Health Investigation Levels (HILs) and Health Screening Levels (HSLs) for vapour intrusion (ASC NEPM), specifically:
  - HIL A (Childcare centre).
  - Vapour intrusion –Soil HSL A (Childcare centre) – Sand.
- Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No.10 - HSLs for direct contact to soil. (Friebel, E. and Nadebaum, P., 2011):
  - Direct Contact –HSL A (Childcare centre).
- United States Environmental Protection Agency (US EPA) (January, 2015) - Regional Screening Levels (RSLs) – Residential Soil (US EPA, 2015).
- US EPA Region 4 (2009) – Soil Screening Levels for PFOS and PFOA.

The resultant VAC, Childcare user adult and child – (contamination at) 0 to 1 m below ground surface (bgs), will be used as the screening criteria based on the receptor (childcare centre user adult and child) and depth to contamination. The screening criteria are summarised in **Table 3** below.

Table 3 Soil Assessment Validation Criteria for Key Contaminants

Chemical Name	ASC NEPM – Childcare Centre – HIL A (mg/kg)
Soil HIL A (Childcare Centre)	
Lead	300
Total PAHs	300
Benzo(a)pyrene TEQ	3
Total PCBs	1
OCP/OPPs	Refer to footnote (a)
Vapour Intrusion – Soil HSL A (Childcare centre) – Sand - 0 to <1.0 m	
Naphthalene	3
TRH F1 C_6-C_{10} (Less BTEX)	45
TRH F2 >C_{10}-C_{16} (Less naphthalene)	110
Benzene	0.5
Toluene	160
Ethylbenzene	55
Xylenes	40
US EPA Regional Screening Levels (RSLs) – Residential Soil	
OCPs/OPPs	Refer to footnote (b)
VOCs	Refer to footnote (c)
sVOCs	Refer to footnote (d)
US EPA Region 4 – Soil Screening Levels for PFOA and PFOS	
PFOS	6 mg/kg
PFOA	16 mg/kg

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CW Commercial Worker
IMW Intrusive Maintenance Worker – assume direct contact with soils
NL No Limit
NA Not Applicable
TEQ Carcinogenic PAHs assessed as the concentration multiplied by their potency relative to benzo(a)pyrene.
(a) OCPs and OPPs will be assessed based upon individual criterion per analyte as per ASC NEPM HIL A.
(b) Individual OCPs and OPPs without a criterion in ASC NEPM HIL A will be obtained from USEPA RSL – Residential Soils.
(c) Individual VOCs without a criterion in ASC NEPM HIL A will be obtained from USEPA RSL – Residential Soils.
(d) Individual sVOCs without a criterion in ASC NEPM HIL A will be obtained from USEPA RSL – Residential Soils.

5.1 Asbestos Assessment Criteria

The current assessment criteria endorsed by the NSW EPA to evaluate asbestos is soil is based on the ASC NEPM.

AECOM notes that the asbestos criteria in the ASC NEPM are sourced from the Western Australia Department of Health (WA DoH) (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos – Contaminated Sites in Western Australia*.

The guideline emphasises that the assessment and management of asbestos contamination should take into account the condition of the asbestos materials and the potential for damage and resulting release of asbestos fibres.

Table 4 Asbestos Assessment Criteria

Land Use	Asbestos Group	% w/w asbestos
Residential (child care centres)	ACM	0.01
All land uses	FA and AF[1]	0.001
All forms of asbestos	No visible or free fibre asbestos in surface soil	

w/w = weight for weight of asbestos in soil
1) Not applicable for free fibres.

6.0 Methodology

The fieldwork methodology for AECOM activities only (collection of soil samples for laboratory analysis) is summarised in **Table 5** below.

All soil samples were collected directly by hand using disposable nitrile gloves and placed into laboratory prepared 125mL soil jars with minimal headspace to reduce the potential for volatile loss. Soils were assessed for the presence of olfactory indicators of contamination (staining or odour) and logged at the time of sampling. The samples were then placed into an eski with crushed ice and transported to the NATA-accredited laboratory ALS Environmental, Smithfield, Sydney, for analysis under chain of custody (COC) conditions.

Table 5 Soil Sampling Methodology

Activity	Details
Soil Sampling	Following excavation and scraping of soils at TP05 (dimensions of 7 m X 5 m), three validation soil samples were collected from 0.3 m bgs at the base only. Note, due to the shallow depth of the excavation, samples from the walls were not considered practicable and that the soils were appropriately represented by those obtained from the base.
Field Screening for VOCs	Soil subsamples were collected from each sample location and were placed in snap-lock plastic bags and the headspace in the bag was screened for volatile organic compounds (VOC) using a calibrated phot-ionisation detector (PID) equipped with a 10.6 eV lamp.
Soil Logging	Soil logging was generally in accordance with the Unified Soil Classification System (USCS) and the AECOM documented standard field procedures.
Decontamination	A new pair of disposable nitrile gloves was used to collect each soil sample. Non-disposable equipment was utilised during the works and a rinsate sample was

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Activity	Details
	taken. Decontamination of the hand trowel during stockpile soil validation sampling was undertaken using a phosphate free detergent (Decon 90) solution followed by a comprehensive and thorough double rinse with de-ionised water.
Field QA/QC Samples	The following quality assurance and quality control samples were collected during the sampling program: - Intra-laboratory duplicates at a rate of 1 per 20 primary samples. - Inter-laboratory duplicates at a rate of 1 per 20 primary samples. - Rinsate blank at a rate of 1 per day of soil sampling.

7.0 Quality Assurance and Quality Control

An assessment of field and laboratory QAQC data was conducted and the results are summarised below.

7.1 Field QA/QC

A review of the AECOM field QA/QC is summarised below:

- Use of AECOM standard procedures for soil sampling.
- Use of a new pair of disposable nitrile gloves for each soil sample collection event.
- Use of calibrated equipment.
- Decontamination of the hand trowel for breaking the surface of the soil using a phosphate free detergent (Decon 90) and comprehensive rinse with distilled water and air drying between sample collection events.
- Use of laboratory prepared and supplied sampling containers appropriate for each CoPC investigated.
- Use of appropriate sample Chain of Custody (COC) documentation. Copies of the COCs are included in the laboratory reports (**Appendix C**).
- Analysis of field duplicate samples at a rate of one per ten primary samples (requirement one per twenty primary samples).
- Analysis of inter-laboratory (split) field duplicate samples at a rate of approximately 1 per 20 primary samples (requirement one per twenty primary samples).
- The relative percentage difference (RPD) of the primary and duplicated sample results to be less than 50%.

7.2 Laboratory QA/QC

A review of the laboratory QAQC is summarised below:

- Samples were collected in appropriate sample containers, transported in chilled sealed containers with appropriate COC documentation.
- Laboratory LORs were below the assessment criteria.
- All laboratory duplicate and triplicate samples reported RPDs within acceptable DQI ranges and analyte-specific acceptance criteria except for PFOS which was 66% for VS02 and QC202. Both samples were below the criteria and a higher than 50% RPD could either be the result of inter-laboratory duplicate analysis and/or is typical of heterogeneous material.

7.3 Data Validation and Usability

A review of the laboratory QA/QC data completed by AECOM is presented in **Appendix C**. This indicated that the results met the acceptance criteria for the analyses conducted.

The data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of soil conditions at the sample locations tested and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this project.

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8.0 Results

8.1 Soil Conditions

Based on previous test pit advancement and observations in AECOM (2015) the soils within AEC04 to comprise:

- Topsoil: 0.0 to 0.2 m bgs.
- Sand: 0.2 to 0.5 m bgs.
- Clay: 0.5 to 1.4 m bgs.

The excavation base comprised red sandy clay: high plasticity, moist and soft. Soil samples collected from the base of the excavation contained no staining and no odour. No other obvious signs of contamination were noted.

Photoionisation detector (PID) sample readings from the excavation ranged from 0.7 (VS02) to 1.2 (VS01). These readings were considered not significant in concentration to indicate remaining TRH impacts exist.

8.2 Analytical Results

A total of 3 primary samples (VS01 to VS03), one duplicate (QC102) and one triplicate (QC202) soil validation samples were collected from the excavation.

Soil analytical results were compared to the site assessment criteria 0-1 m bgs and reported no exceedances of the VAC. Analytical soil data is presented in **Table T1** in **Appendix B**.

9.0 Discussion

A total of 3 primary soil samples and 2 QA/QC samples were collected for validation purposes from the excavation base.

Laboratory analysis reported concentrations of all CoPCs less than the screening criteria for the land use scenario of a childcare centre.

The EPA Region 4 calculated a residential soil screening level of 6 mg/kg for PFOS and 16 mg/kg for PFOA (EPA Region 4 2009). All results, included in **Appendix C**, returned for AFFF (PFOS and PFOA) readings below the threshold outlined in the Emerging Contaminants Fact Sheet – PFOS and PFOA provided by the U.S. Environmental Protection Agency (EPA) Federal Facilities Restoration and Reuse Office (FFRRO). The results are reported to be below the threshold levels for the proposed land-use (childcare centre).

Based on field observations made during validation works and laboratory analysis of collected validation samples, AECOM considers that the soils within an area 5 m x 7 m to a depth of 0.3 m bgs associated with TP05/AEC04 has been appropriately validated and that no unacceptable risks exist to human health from concentrations of TRH C_{10}-C_{16} (less naphthalene).

10.0 Summary and Conclusions

AECOM was engaged by the LDA to prepare this letter report to document the excavation of TP05 and validate the remediation works associated with removing TRH impacts in surface soils around TP05/AEC04. The objective of the works was to excavate TRH-impacted soils around TP05, assess the remaining soils and validate whether the remediation excavation is suitable for the proposed future childcare centre land use.

AECOM considers that validation of the TP05/AEC04 excavation was completed to a standard acceptable for the proposed future child care land use.

11.0 References

1) AECOM Australia Pty Ltd (2015) *Former Charnwood Fire Station: Stage 2 Environmental Site Assessment Report.*

2) AECOM Australia Pty Ltd (2014) *ESDD Charnwood: Stage 1 Environmental Assessment*, issued 18 November 2014.

3) AECOM Australia Pty Ltd (2014) *UPSS Validation Report – Former West Belconnen Fire Station, Belconnen, ACT*, issued 18 November 2014.

4) National Environmental Protection Council (1999). *National Environmental Protection Measure (Assessment of Site Contamination) (ASC NEPM)*, as amended May 2013.

AECOM

Yours sincerely

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encl: Appendix A - Figure
Appendix B - Table
Appendix C - Laboratory Certificates
Appendix D - Calibration Records
Appendix E - Site Photographs

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APPENDIX A – FIGURE

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Validation Sample (VS)

TP05 Excavated Area

AEC 04 - Potential uncontrolled fill

Site Location

Charnwood Phase 2 Environmental Site Assessment Report
Validation Soil Sampling Locations

APR 2015
60339175

Fig. 1

0 5 10 20 m

N

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APPENDIX B – TABLE

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Client Name: Land Development Agency
Project Name: Charnwood Remediation
Project No: [illegible]

Table T1 - Soil Validation Results 0 to <1 m bgs

Sample_ID		LOR	Site Validation Criteria 0 - 1 m bgs	VS01	RPD %	QC102	VS02	RPD %	QC202	VS03	QC300
Sampled_Date				8/04/2015		8/04/2015	8/04/2015		8/04/2015	8/04/2015	8/04/2015
Sample Type				Primary		Duplicate	Primary		Triplicate	Primary	Rinsate
Units		mg/kg	mg/kg	mg/kg		mg/kg	mg/kg		mg/kg	mg/kg	µg/L
TPH	C6 - C9	10		<10	nc	<10	<10	nc	<20	<10	<20
	C10 - C14	50		<50	nc	<50	<50	nc	<20	<50	<50
	C15 - C28	100		<100	nc	<100	<100	nc	<45	<100	<100
	C29-C36	100		<100	nc	<100	<100	nc	<45	<100	<50
	C10 - C36 (Sum of total)	50		<50	nc	<50	<50	nc	<110	<50	<50
TRH	C6-C10 less BTEX (F1)	10	45	<10	nc	<10	<10	nc	<25	<10	<20
	C10-C16	50		<50	nc	<50	<50	nc	<25	<50	<100
	C16-C34	100		<100	nc	<100	<100	nc	<90	<100	<100
	C34-C40	100		<100	nc	<100	<100	nc	<120	<100	<100
	F2-NAPHTHALENE	50	110	<50	nc	<50	<50	nc	<25	<50	<100
	C10 - C40 (Sum of total)	50		<50	nc	<50	<50	nc	<210	<50	<100
BTEXN	Benzene	0.2	0.5	<0.2	nc	<0.2	<0.2	nc	<0.1	<0.2	<1
	Toluene	0.5	160	<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<2
	Ethylbenzene	0.5	55	<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<2
	Xylene (m & p)	0.5		<0.5	nc	<0.5	<0.5	nc	<0.2	<0.5	<2
	Xylene (o)	0.5	650	<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<2
	Xylene Total	0.5	40	<0.5	nc	<0.5	<0.5	nc	<0.3	<0.5	<2
	Naphthalene	0.1	3	<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
Halogenated Benzenes	Hexachlorobenzene	0.05	0.33	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	<0.05
Metals	Arsenic	5		5	nc	<5	6	40	4	7	<0.001
	Cadmium	1		1	nc	1	1	nc	<0.3	<1	<0.0001
	Chromium (total)	2		33	nc	33	36	44	23	32	<0.001
	Copper	5		10	nc	11	11	12	9.8	10	<0.001
	Lead	5	300	25	nc	14	15	22	12	13	<0.001
	Nickel	2		15	nc	17	13	41	8.6	13	<0.001
	Zinc	5		20	nc	22	21	27	16	19	<0.005
	Mercury	0.1		<0.1	nc	<0.1	<0.1	nc	0.02	<0.1	<0.0001
OCPs	4,4-DDE	0.05	1.6	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	a-BHC	0.05	0.085	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Aldrin	0.05	0.031	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Aldrin + Dieldrin	0.05	6	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	b-BHC	0.05	0.3	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Chlordane	0.05	50	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Chlordane (CIS)	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Chlordane (trans)	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	d-BHC	0.05		<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	DDE	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	DDD	0.05	2.2	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	DDT	0.2	1.9	<0.02	nc	<0.02	<0.02	nc	-	<0.02	-
	DDT+DDE+DDT	0.05	240	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Dieldrin	0.05	0.033	<0.05	nc	<0.05	<0.05	nc	<0.2	<0.05	-
	Endosulfan	0.05	270	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Endrin	0.05	10	<0.05	nc	<0.05	<0.05	nc	<0.2	<0.05	-
	Endrin Aldehyde	0.05		<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Endrin ketone	0.05		<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	g-BHC	0.05	0.56	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Heptachlor	0.05	6	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Heptachlor epoxide	0.05	0.059	<0.05	nc	<0.05	<0.05	nc	<0.1	<0.05	-
	Methoxychlor	0.2	300	<0.2	nc	<0.2	<0.2	nc	<0.1	<0.2	-
OPPs	Azinophos methyl	0.05	180	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Bromophos-ethyl	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Carbophenothion	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Chlorfenvinphos	0.05	43	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Chlorpyrifos	0.05	160	<0.05	nc	<0.05	<0.05	nc	<0.2	<0.05	-
	Chlorpyrifos-methyl	0.05	620	<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Diazinon	0.05	43	<0.05	nc	<0.05	<0.05	nc	<0.5	<0.05	-
	Dichlorvos	0.05	2	<0.05	nc	<0.05	<0.05	nc	<0.5	<0.05	-
	Dimethoate	0.05	12	<0.05	nc	<0.05	<0.05	nc	<0.5	<0.05	-
	Ethion	0.05	31	<0.05	nc	<0.05	<0.05	nc	<0.2	<0.05	-
	Fenthion	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
	Malathion	0.05	1200	<0.05	nc	<0.05	<0.05	nc	<0.2	<0.05	-
	Methyl Parathion	0.2	15	<0.2	nc	<0.2	<0.2	nc	-	<0.2	-
	Monocrotophos	0.2		<0.2	nc	<0.2	<0.2	nc	-	<0.2	-
	Prothiofos	0.05		<0.05	nc	<0.05	<0.05	nc	-	<0.05	-
PAHs	Acenaphthene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Acenaphthylene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Anthracene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Benz(a)anthracene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Benzo(a) pyrene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero)	0.5		<0.5	nc	<0.5	<0.5	nc	<0.2	<0.5	<0.5
	Benzo(a)pyrene TEQ (half LOR)	0.5	3	0.6	nc	0.6	0.6	nc	<0.2	0.6	-
	Benzo(a)pyrene TEQ (LOR)	0.5		1.2	nc	1.2	1.2	nc	<0.3	1.2	-
	Benzo(b+j)fluoranthene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Benzo(g,h,i)perylene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Benzo(k)fluoranthene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Chrysene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Dibenzo(a,h)anthracene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Fluoranthene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Fluorene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Indeno(1,2,3-c,d)pyrene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Phenanthrene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	Pyrene	0.5		<0.5	nc	<0.5	<0.5	nc	<0.1	<0.5	<1.0
	PAHs (Sum of total)	0.5	300	<0.5	nc	<0.5	<0.5	nc	<0.8	<0.5	<0.5
PCBs	PCBs (Sum of total)	0.1	1	<0.1	nc	<0.1	<0.1	nc	<1	<0.1	-
Pesticides	Demeton-S-methyl	0.05		<0.5	nc	<0.5	<0.5	nc	-	<0.5	-
	Fenamiphos	0.05	15	<0.5	nc	<0.5	<0.5	nc	-	<0.5	-
	Parathion	0.2	370	<0.2	nc	<0.2	<0.2	nc	<0.2	<0.2	-
	Pirimphos-ethyl	0.05		<0.5	nc	<0.5	<0.5	nc	-	<0.5	-
Asbestos	Asbestos Detected	0.1		No	-	No	No	-	No	No	-
	Sample weight	0.01		1930	-	1220	1450	-	-	1550	-
	Asbestos free fibres	5		No	-	No	No	-	-	No	-
AFFF	PFOS	0.0005	6	1.30	nc	1.30	1.06	66	2.1	1.92	-
	PFOA	0.0005	16	0.0039	21	0.0048	0.0043	nc	nd	0.0061	-

Notes
mg/kg = miligrams per kilogram
µg/L = micrograms per litre
LOR = Limit of Reporting
nd = Not Detected
nc = Not Calculated

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APPENDIX C – QA/QC AND LABORATORY CERTIFICATES

Form: 1 of 1

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Chain of Custody & Analysis Request Form

AECOM - Canberra
Level 2, 60 Marcus Clarke Street
Canberra, ACT 2600
Tel: 02 6201 3000
Fax: 02 6201 3099
Email: [redacted]

Laboratory Details
Lab. Name: ALS Sydney
Lab. Address: Smithfield
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: EN/004/14

Project Name: Charnwood ~~Road~~ Remediation **Project Number:** 60339175 **Purchase Order Number:** Project 60339175, Task No. ~~15~~ 1.3

Sample collected by: [redacted] **Sample Results to be returned to:** ALS Sydney

Specifications:	(Tick)		
1. Urgent TAT required? (please circle: 24hr 48hr ____days) STANDARD	☐ Yes	☑ No	☐ N/A
2. Fast TAT Guarantee Required?	☐ Yes	☑ No	☐ N/A
3. Is any sediment layer present in waters to be excluded from extractions?	☐ Yes	☐ No	☑ N/A
4. Special storage requirements?	☐ Yes	☐ No	☑ N/A
5. Preservation requirements?	☐ Yes	☐ No	☑ N/A
6. Other requirements? ☐ Fax ☐ Hard copy ☑ Email	☐ Yes	☐ No	☑ N/A

7. Report Format: 8. Project Manager: tel:

Lab. ID	Sample ID	Sampling Date	Sampling Time	Matrix: soil	water	other	Preservation: filtered	acid	Ice	other	Container (No. & type)	TPH	BTEX	PAH	PCB	OCP	OPP	As 200F (Asbestos)	Metals	PFOS and PFOA	PFOA	Remarks & comments
1	VS01	8/4/15	–	✓					✓		1x Jar 1 Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	VS02	8/4/2015	–	✓					✓		1x Jar 1 Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	VS03	8/4/2015	–	✓					✓		1x Jar 1 Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4	QC102	8/4/2015	–	✓					✓		1x Jar 1 Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~4~~ A	QC202	8/4/2015	–	✓					✓		1x Jar 1 Bag	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Send to SGS Sydney
5	QC300	8/4/2015	–		✓				✓		2 Vials 1x Amber 1 Plastic	✓	✓	✓					✓			

Environmental Division Sydney
Work Order
ES1508057
Telephone : +61-2-8784 8555

Relinquished By: [redacted] Date: 8/4/2014 Time: 11:25 of: AECOM

Received by: Ben B Date: 8/4/15 Name: Time: 11:45 of:

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Postal ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

Relinquished By: Name: Date: Time: of:

Received by: Steven Date: 9/4/15 Time: 800 Name: Date: Time: of:

Received in good condition? Yes/No/NA Method of Shipment ☐ Courier ☐ Posta ☐ By Hand
Samples received chilled? Yes/No/NA Consignment Note No.
Yes/No/NA Transport Co:

Printed copies of this document are uncontrolled

Revision: Oct 09
BMS-PM-DV-F046

Environment

Temp = 14.3°C Ben B

ALS Group

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **ES1508057**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: [redacted]	Contact	: Client Services
Address	: LEVEL 2 60 MARCUS CLARKE ST CANBERRA ACT 2600	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: [redacted]@aecom.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 6201 3017	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 60339175 TASK NO 1 3 CHARNWOOD REMEDIATION	Page	: 1 of 3
Order number	: 60339175,TASK NO.1.3		
C-O-C number	: ----	Quote number	: ES2014HLAENV0523 (EN/004/14)
Site	: ----		
Sampler	: RO	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 09-APR-2015	Issue Date	: 09-APR-2015 18:08
Client Requested Due Date	: 16-APR-2015	Scheduled Reporting Date	: **16-APR-2015**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 18.7'C - Ice bricks present
No. of coolers/boxes	: 1 ESKY	No. of samples received	: 5
Security Seal	: Intact.	No. of samples analysed	: 5

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
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **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.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **All analysis will be reported on the scheduled due date of 16/04/15, except for PFOS / PFOA analysis which will be reported on 24/04/15.**
- **Sample QC202 to be forwarded to SGS.**
- 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 exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA200F Friable Asbestos Quantitation in Soil	SOIL - EP231 Perfluorooctyl Acids and Sulfonates	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES1508057-001	08-APR-2015 15:00	VS01	✓	✓	✓
ES1508057-002	08-APR-2015 15:00	VS02	✓	✓	✓
ES1508057-003	08-APR-2015 15:00	VS03	✓	✓	✓
ES1508057-004	08-APR-2015 15:00	QC102	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - W-26T TRH/BTEXN/PAH/Total 8 Metals
ES1508057-005	08-APR-2015 15:00	QC300	✓

Proactive Holding Time Report

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

Issue Date	: 09-APR-2015 18:08
Page	: 3 of 3
Work Order	: ES1508057
Client	: AECOM Australia Pty Ltd

Requested Deliverables

AP_CUSTOMER SERVICE ANZ

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

[redacted]

- *AU Certificate of Analysis - NATA	Email	[redacted]@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	[redacted]@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	[redacted]@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT	Email	[redacted]@aecom.com
- A4 - AU Tax Invoice	Email	[redacted]@aecom.com
- Chain of Custody (CoC)	Email	[redacted]@aecom.com
- EDI Format - ENMRG	Email	[redacted]@aecom.com
- EDI Format - ESDAT	Email	[redacted]@aecom.com
- EDI Format - HLAPro	Email	[redacted]@aecom.com
- EDI Format - XTab	Email	[redacted]@aecom.com

[redacted]

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