

25 October 2019

Attention: Colby Farmer
Coolamon Shire Council
PO Box 101
Coolamon NSW 2701
cfarmer@coolamon.nsw.gov.au
BY EMAIL

Dear Colby

Re: Contamination Assessment Lot 2 DP 838319 Wade Street Coolamon NSW 2701

I refer to the written instructions from yourself to undertake limited investigation and assessment of soil at the subject site for potential contamination. This assessment is for use only of Colby Farmer of Coolamon Shire Council for initial evaluation purposes and is not to be relied upon for any other purpose. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this assessment. This letter format report has been prepared to minimise the cost to the client however, comprehensive reports can be prepared at an additional cost if required. Please find as follows a summary of the investigation and assessment.

1. McMahon Earth Science (McMahon) was engaged by Colby Farmer of Coolamon Shire Council to undertake an initial inspection, investigation and contamination assessment of vacant block of land at Lot 2 DP 838319 Wade Street Coolamon (the site) on 8 October 2019.
2. Coolamon Shire Council intends to purchase the site from State Rail, the current owners. After purchasing the site, Council intends to develop the land for light industrial purposes. Council have conducted their own research and enquiries and have assessed that there have been no known contaminated land uses/practices on the site (pers. comm. Colby Farmer 23 September 2019). A map of the location of the site and proposed development footprint can be seen in Attachment 1.
3. McMahon conducted a site inspection on 8 October 2019 which included a site walkover after a review of desktop information. The site landform is a low foot slope of recently formed Quaternary colluvium underlain by Ordovician Metasediments located at an elevation of approximately 250m AHD. There are no natural drainages nor registered groundwater bores on site. There are scattered pine and gum trees on site and groundcover is typical of unimproved ley ground. Based on such, McMahon assesses environmental receptors are limited from any potential contamination on site.
4. McMahon noted from the site inspection on 8 October 2019, relating to potential contamination:
 - a) The site lies between the Junee-Hay railway line to the north and Wade Street to the south.
 - b) Surrounding land use is commercial/industrial and residential.
 - c) The site is a vacant block with some farm fencing along the northern boundary.
 - d) There were two low, open man-made drainages traversing the site running to the south. Both of these man-made drainages were dry at the time of inspection.
 - e) The natural soil surface and subsurface was not disturbed, coloured or stained.
 - f) There were no bonded asbestos containing material fragments identified on the soil surface.

- g) There was no disturbed vegetation.
- h) There were no unusual odours.
- i) There were some stockpiles of road gravel in the far western section of the site totalling <5m³

5. McMahon collected ten surface and three subsurface samples in a transect line across the site. These surface and subsurface samples were sent to a NATA accredited laboratory for analysis. The samples were analysed for heavy metals, pesticides (OCCs, SPs), hydrocarbons (TRH, PAHs PCBs), phenols, solvents (BTEXN) and asbestos. A map of the sample locations can be seen in Attachment 2.

6. The results of the analysis from the soil samples taken at the surface and subsurface returned contaminant levels below the adopted Tier 1 commercial/industrial risk criteria for human health and the environment, see Attachment 3. The laboratory reports can be seen in Attachment 4.

7. The QA/QC results from the laboratory are assessed to be:

- a) Within the withholding periods for all parameters.
- b) Of a suitable quality to deem the results as reliable.

8. In conclusion the following assessment applies:

- a) From the available information as outlined in this letter format report, there is no qualitative or quantitative evidence of previous contaminating activities nor gross surface or subsurface soil contamination on site.
- b) Based on the above, McMahon assesses that the site is suitable for development as commercial/industrial land.
- c) If unexpected findings relating to potential contamination do occur during development, McMahon should be contacted for further investigation and assessment.

If you have any queries about the content of this letter format report, please contact the undersigned.

Yours sincerely



David McMahon CEnvP
BAppSc SA
GradDip WRM
MEnvMgmt
MEIANZ MSSA MALGA

Disclaimer

The information contained in this report has been extracted from field and laboratory sources believed to be reliable and accurate. DM McMahon Pty Ltd will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. It should be noted that findings in this report are based solely upon the said site conditions at the time of inspection. The results of the said investigations undertaken are an overall representation of the conditions encountered. The properties of the soil within the location may change due to variations in ground conditions outside the inspected area.

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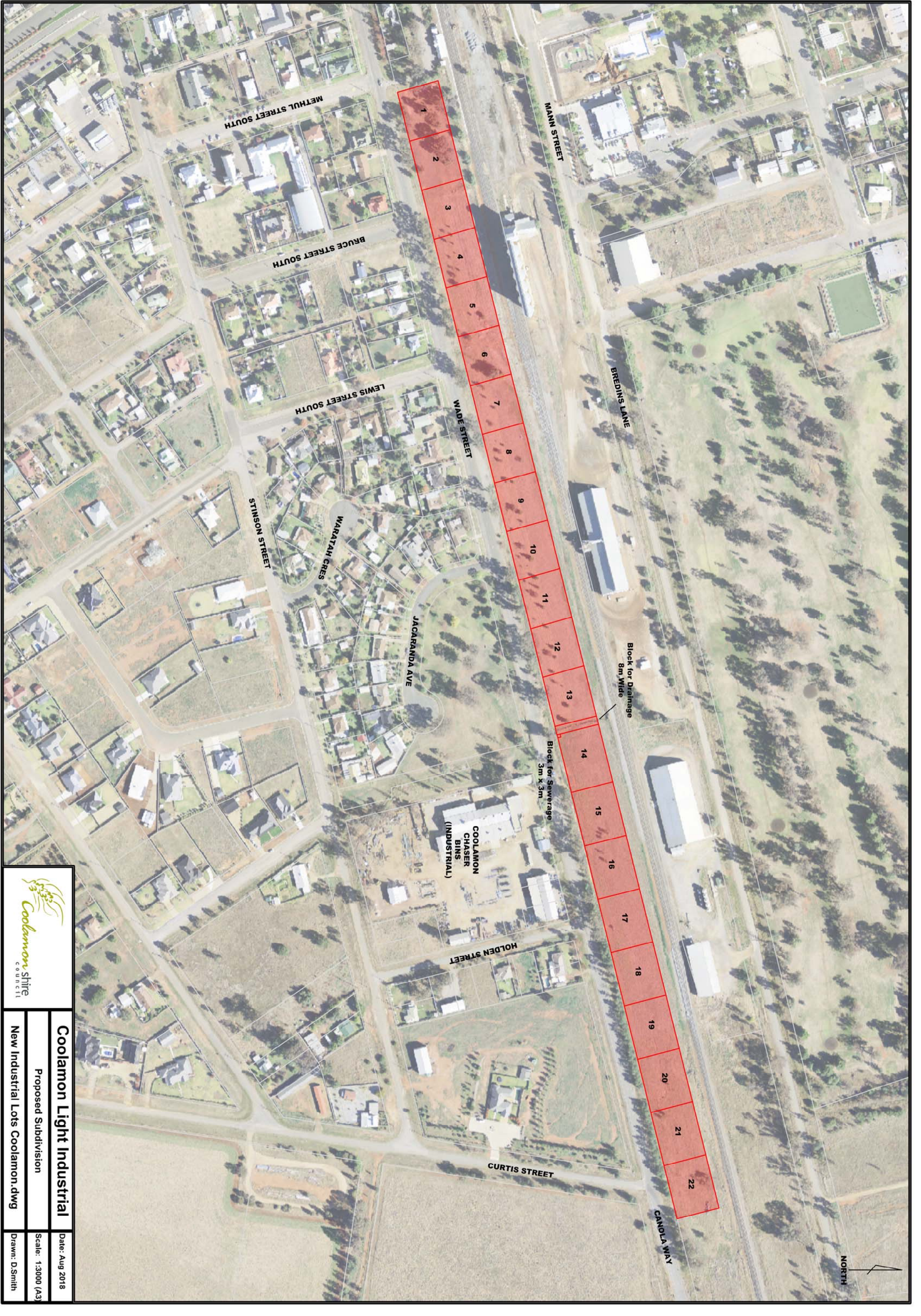
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Attachments

1. Map of site and proposed development footprint.
2. Map of sampling locations.
3. Tabulated results.
4. Laboratory reports.



Attachment 1 : *Map of site and proposed development footprint*



Coolamon Light Industrial		Date: Aug 2018
Proposed Subdivision		Scale: 1:3000 (A3)
New Industrial Lots Coolamon.dwg		Drawn: D.Smith

Attachment 3 : *Tabulated results*



Figure 1: Map of Sampling Locations



Attachment 4 : *Laboratory reports*

Table 1: Results

Parameter	Limit	Unit	Sample Identification													
			1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	2/3	5/2	9/3	D
Depth	-	Metres	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0.5-1.0	0.5-1.0	0.5-1.0	9/3
Asbestos	presence	yes/no	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Trace asbestos	presence	yes/no	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Arsenic	3000A/160D	mg/kg	7	18	35	6	6	<5	<5	7	13	8	15	7	15	18
Barium	-	mg/kg	50	50	160	50	50	40	40	50	40	40	20	120	70	----
Beryllium	500A	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	1	----
Boron	300 000A	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	----
Cadmium	900A	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	310C	mg/kg	18	39	25	32	32	28	31	34	57	32	40	39	42	55
Cobalt	4000A	mg/kg	5	5	6	4	5	5	7	7	3	4	4	11	8	----
Copper	240 000A/140C	mg/kg	14	14	12	10	9	8	9	9	8	7	12	14	14	18
Lead	1500A / 1800C	mg/kg	27	22	18	18	14	12	12	13	11	9	14	14	14	13
Manganese	60 000A	mg/kg	151	148	192	387	365	323	536	469	74	264	50	120	57	----
Nickel	6000A/55C	mg/kg	8	10	11	7	10	8	9	9	7	7	10	22	14	7
Selenium	10 000A	mg/kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	----
Vanadium	-	mg/kg	30	55	43	40	43	38	44	46	54	39	68	59	66	----
Zinc	400 000A/110C	mg/kg	49	32	28	31	22	19	17	17	11	12	16	19	16	15
Mercury	730A	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

^A National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1A(1) Health Investigation levels for soil contaminants: Commercial/Industrial

^C National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1B(1-4) Added Contaminant limits: Commercial/Industrial (Most conservative value)

^D National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1B(5) Ecological Investigation Levels: Commercial/Industrial

NOTE: Parameters were excluded from table one if no concentration was found above the laboratory limit and/or no criteria were available

Table 2: Results (continued)

Parameter	Limit	Unit	Sample Identification													
			1/1	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	2/3	5/2	9/3	D
Depth	-	Metres	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0-02	0.5-1.0	0.5-1.0	0.5-1.0	9/3
Chromium VI	3600A	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cyanide	1500A	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
Total PCBs	7A	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	45A	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDD + DDE + DDT	3600A	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenol	240000A	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	0.7E	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of PAHs	4000A	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
C6 - C10 - BTEX	260B/215E	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C16 - C34	1700E	mg/kg	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34 - C40	3300E	mg/kg	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10 - C16 - Naph	170E	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Benzene	3B/75E	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	135E	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	165E	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	230B/95E	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	370D	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

^A National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1A(1) Health Investigation levels for soil contaminants: Commercial/Industrial

^B National Environment Protection (Assessment of Site Contamination) Measure 1999 Table 1A(3) Soil HSLs for vapour intrusion (mg/kg): Commercial/Industrial

^D National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1B(5) Ecological Investigation Levels: Commercial/Industrial

^E National Environment Protection (Assessment of Site Contamination) Measure 1999. Table 1B(6) Ecological Screening Levels: Commercial/Industrial (Most conservative value)

NOTE: Parameters were excluded from table one if no concentration was found above the laboratory limit and/or no criteria were available



Attachment ** : *Name of attachment document*

CERTIFICATE OF ANALYSIS

Work Order : **ES1932897**
Client : **DM MCMAHON PTY LTD**
Contact : ZACH
Address : 6 JONES ST
 Wagga Wagga NSW, AUSTRALIA 2650
Telephone : ----
Project : Coolamon - Wade St
Order number : 6373
C-O-C number : ----
Sampler : Zach Bradley
Site : ----
Quote number : EN/222
No. of samples received : 14
No. of samples analysed : 14

Page : 1 of 18
Laboratory : Environmental Division Sydney
Contact : Customer Services ES
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 09-Oct-2019 11:40
Date Analysis Commenced : 10-Oct-2019
Issue Date : 16-Oct-2019 16:40



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

LOR = Limit of reporting

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

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EG048G: Poor spike recovery for Alkyl Hexavalent Chromium due to matrix interferences.
- EG048G: LOR raised for Alkyl Hexavalent Chromium on various samples due to sample matrix.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	1/1	2/1	3/1	4/1	5/1
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		ES1932897-001	ES1932897-002	ES1932897-003	ES1932897-004	ES1932897-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		3.5	4.8	4.4	3.9	6.0
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		7	18	35	6	6
Barium	7440-39-3	10	mg/kg		50	50	160	50	50
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		18	39	25	32	32
Cobalt	7440-48-4	2	mg/kg		5	5	6	4	5
Copper	7440-50-8	5	mg/kg		14	14	12	10	9
Lead	7439-92-1	5	mg/kg		27	22	18	18	14
Manganese	7439-96-5	5	mg/kg		151	148	192	387	365
Nickel	7440-02-0	2	mg/kg		8	10	11	7	10
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		30	55	43	40	43
Zinc	7440-66-6	5	mg/kg		49	32	28	31	22
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<5.0	<5.0	<5.0	<5.0	<5.0
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	1	mg/kg		<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<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	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				1/1	2/1	3/1	4/1	5/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1932897-001	ES1932897-002	ES1932897-003	ES1932897-004	ES1932897-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<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	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Mirex	2385-85-5	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<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	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	1/1	2/1	3/1	4/1	5/1
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		ES1932897-001	ES1932897-002	ES1932897-003	ES1932897-004	ES1932897-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<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	<0.05
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068D: Pyrethroids									
Bifenthrin	82657-04-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
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
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

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	1/1	2/1	3/1	4/1	5/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1932897-001	ES1932897-002	ES1932897-003	ES1932897-004	ES1932897-005	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	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	<50	<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	
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	----	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	%	124	126	125	120	99.0	
EP068S: Organochlorine Pesticide Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	1/1	2/1	3/1	4/1	5/1
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		ES1932897-001	ES1932897-002	ES1932897-003	ES1932897-004	ES1932897-005
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		132	117	113	120	96.8
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		103	93.2	114	107	83.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		99.3	91.6	97.1	98.9	90.3
2-Chlorophenol-D4	93951-73-6	0.5	%		98.4	91.0	88.4	95.7	93.5
2,4,6-Tribromophenol	118-79-6	0.5	%		94.4	82.3	48.7	81.9	86.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		95.6	95.9	94.6	96.3	91.1
Anthracene-d10	1719-06-8	0.5	%		110	101	92.4	110	101
4-Terphenyl-d14	1718-51-0	0.5	%		103	97.2	83.0	97.9	103
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		101	96.3	96.4	102	96.4
Toluene-D8	2037-26-5	0.2	%		114	119	112	122	113
4-Bromofluorobenzene	460-00-4	0.2	%		110	114	113	118	111



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	6/1	7/1	8/1	9/1	10/1
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		ES1932897-006	ES1932897-007	ES1932897-008	ES1932897-009	ES1932897-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		4.6	2.8	3.1	6.2	3.5
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	7	13	8
Barium	7440-39-3	10	mg/kg		40	40	50	40	40
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		28	31	34	57	32
Cobalt	7440-48-4	2	mg/kg		5	7	7	3	4
Copper	7440-50-8	5	mg/kg		8	9	9	8	7
Lead	7439-92-1	5	mg/kg		12	12	13	11	9
Manganese	7439-96-5	5	mg/kg		323	536	469	74	264
Nickel	7440-02-0	2	mg/kg		8	9	9	7	7
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		38	44	46	54	39
Zinc	7440-66-6	5	mg/kg		19	17	17	11	12
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<5.0	<5.0	<5.0	<5.0	<5.0
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	1	mg/kg		<1	<1	<1	1	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<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	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				6/1	7/1	8/1	9/1	10/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1932897-006	ES1932897-007	ES1932897-008	ES1932897-009	ES1932897-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<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	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Mirex	2385-85-5	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<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	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID				
Client sampling date / time				6/1	7/1	8/1	9/1	10/1
Compound				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
CAS Number	LOR	Unit		ES1932897-006	ES1932897-007	ES1932897-008	ES1932897-009	ES1932897-010
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05
EP068C: Triazines								
Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068D: Pyrethroids								
Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
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
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

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	6/1	7/1	8/1	9/1	10/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1932897-006	ES1932897-007	ES1932897-008	ES1932897-009	ES1932897-010	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	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	<50	<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	
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	----	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	%	109	126	126	101	100	
EP068S: Organochlorine Pesticide Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	6/1	7/1	8/1	9/1	10/1
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit		ES1932897-006	ES1932897-007	ES1932897-008	ES1932897-009	ES1932897-010
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		89.2	111	118	126	108
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		78.0	95.8	96.1	106	79.2
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		99.7	101	88.8	102	96.9
2-Chlorophenol-D4	93951-73-6	0.5	%		91.5	91.3	97.6	98.1	89.7
2,4,6-Tribromophenol	118-79-6	0.5	%		73.6	73.4	77.0	76.2	64.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		87.5	94.6	92.8	96.0	92.0
Anthracene-d10	1719-06-8	0.5	%		103	103	106	107	105
4-Terphenyl-d14	1718-51-0	0.5	%		95.1	96.9	97.8	97.4	92.0
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		100	101	95.1	91.7	99.1
Toluene-D8	2037-26-5	0.2	%		115	113	115	105	115
4-Bromofluorobenzene	460-00-4	0.2	%		108	109	114	113	113



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	2/3	5/2	9/3	D	----
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit		ES1932897-011	ES1932897-012	ES1932897-013	ES1932897-014	-----
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		9.4	16.5	11.1	9.2	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		15	7	15	18	----
Barium	7440-39-3	10	mg/kg		20	120	70	----	----
Beryllium	7440-41-7	1	mg/kg		<1	2	1	----	----
Boron	7440-42-8	50	mg/kg		<50	<50	<50	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg		40	39	42	55	----
Cobalt	7440-48-4	2	mg/kg		4	11	8	----	----
Copper	7440-50-8	5	mg/kg		12	14	14	18	----
Lead	7439-92-1	5	mg/kg		14	14	14	13	----
Manganese	7439-96-5	5	mg/kg		50	120	57	----	----
Nickel	7440-02-0	2	mg/kg		10	22	14	7	----
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	----	----
Vanadium	7440-62-2	5	mg/kg		68	59	66	----	----
Zinc	7440-66-6	5	mg/kg		16	19	16	15	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	----
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	1	mg/kg		<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<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	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				2/3	5/2	9/3	D	----
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit	ES1932897-011	ES1932897-012	ES1932897-013	ES1932897-014	-----
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
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	----	----
Mirex	2385-85-5	0.20	mg/kg	<0.20	<0.20	<0.20	----	----
^ 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	72-54-8/72-55-9/50-2	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	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	2/3	5/2	9/3	D	----
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit		ES1932897-011	ES1932897-012	ES1932897-013	ES1932897-014	-----
					Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
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	----	----
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068D: Pyrethroids									
Bifenthrin	82657-04-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<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	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<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	----	----

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	2/3	5/2	9/3	D	----
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit	ES1932897-011	ES1932897-012	ES1932897-013	ES1932897-014	-----	
				Result	Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	----		----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----		----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----		----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----		----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----		----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----		----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----		----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----		----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----		----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----		----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----		----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----		----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----		----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----		----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----		----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----		----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----		----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----		----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	80.8	91.9	116	----		----
EP068S: Organochlorine Pesticide Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	2/3	5/2	9/3	D	----
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----
Compound	CAS Number	LOR	Unit		ES1932897-011	ES1932897-012	ES1932897-013	ES1932897-014	-----
					Result	Result	Result	Result	----
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		109	105	112	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		91.5	86.8	87.2	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.2	88.2	100.0	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		96.8	98.3	92.4	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		70.2	66.3	63.2	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		91.9	92.0	92.7	----	----
Anthracene-d10	1719-06-8	0.5	%		103	106	100	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		104	100	95.9	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		95.1	89.5	96.2	----	----
Toluene-D8	2037-26-5	0.2	%		113	107	114	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		116	117	108	----	----



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	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

CERTIFICATE OF ANALYSIS

Work Order : **ES1934212**
Client : **DM MCMAHON PTY LTD**
Contact : Zach Bradley
Address : 6 JONES ST
 Wagga Wagga NSW, AUSTRALIA 2650
Telephone : 0269310511
Project : Coolamon - Wade St - 2
Order number : 6373
C-O-C number : ----
Sampler : Zach Bradley
Site : ----
Quote number : EN/222
No. of samples received : 13
No. of samples analysed : 13

Page : 1 of 5
Laboratory : Environmental Division Sydney
Contact : Customer Services ES
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164

Telephone : +61-2-8784 8555
Date Samples Received : 18-Oct-2019 11:30
Date Analysis Commenced : 22-Oct-2019
Issue Date : 25-Oct-2019 12:57



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	Position	Accreditation Category
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

LOR = Limit of reporting

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

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.



Analytical Results

Sub-Matrix: **SOIL**
 (Matrix: **SOIL**)

Client sample ID

				1/1	2/1	3/1	4/1	5/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1934212-001	ES1934212-002	ES1934212-003	ES1934212-004	ES1934212-005
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	856	332	569	621	193
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	A. SMYLYE	A. SMYLYE	A. SMYLYE	A. SMYLYE	A. SMYLYE
EA200N: Asbestos Quantification (non-NATA)								
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
∅ Weight Used for % Calculation	----	0.0001	kg	0.856	0.332	0.569	0.621	0.193
∅ Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				6/1	7/1	8/1	9/1	10/1
Client sampling date / time				08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00
Compound	CAS Number	LOR	Unit	ES1934212-006	ES1934212-007	ES1934212-008	ES1934212-009	ES1934212-010
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	651	595	518	426	663
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE
EA200N: Asbestos Quantification (non-NATA)								
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
∅ Weight Used for % Calculation	----	0.0001	kg	0.651	0.595	0.518	0.426	0.663
∅ Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	2/3	5/2	9/3	----	----
Client sampling date / time					08-Oct-2019 00:00	08-Oct-2019 00:00	08-Oct-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		ES1934212-011	ES1934212-012	ES1934212-013	-----	-----
				Result	Result	Result	Result	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	----	----
Asbestos Type	1332-21-4	-	--		-	-	-	----	----
Sample weight (dry)	----	0.01	g		202	475	457	----	----
Synthetic Mineral Fibre	----	0.1	g/kg		No	No	No	----	----
Organic Fibre	----	0.1	g/kg		No	No	No	----	----
APPROVED IDENTIFIER:	----	-	--		A. SMYLIE	A. SMYLIE	A. SMYLIE	----	----
EA200N: Asbestos Quantification (non-NATA)									
Ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	<0.0004	<0.0004	----	----
Ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	<0.001	<0.001	----	----
Ø Weight Used for % Calculation	----	0.0001	kg		0.202	0.475	0.457	----	----
Ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	<0.0004	<0.0004	----	----

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 Soils		
EA200: Description	1/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	2/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	3/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	4/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	5/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	6/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	7/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	8/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	9/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	10/1 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	2/3 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	5/2 - 08-Oct-2019 00:00	Mid brown soil.
EA200: Description	9/3 - 08-Oct-2019 00:00	Mid brown soil.



Chain of Custody

DM McMahon Pty Ltd
PO Box 6138
6 Jones St, Warragamba NSW 2650
Ph: (02) 453 310 510

Relinquished by: Zach Bradley

Date: 8/10/2019

Signature:

Received by:

Date: 8/10/2019

Signature:

Relinquished by:

Date: 8/10/2019

Signature:

Received by:

Date: 8/10/2019

Signature:

Turnaround Requirements: ☒ Standard TAT ☐ Non Standard or Urgent TAT (List Due Date):

Analysing Laboratory: ALS -Sydney

Project: Coolamon - Wade St

Order No.: 6373

Project Manager: Zach Bradley

Contact Ph: (02) 69 310 510

Sampling Officer: Z. Bradley

Report Format: Default

Email Reports to: admin@dmcmahon.com.au

cc: zach@dmcmahon.com.au

Email Invoice to: admin@dmcmahon.com.au

Lab Comments:

For Laboratory Use Only (Client)

Custody Seal intact? Yes No N/A

Freeze/ Frozen ice bricks Yes No N/A

Present upon sample Yes No N/A

Random sample temp on receipt Yes No N/A

Other comments:

QUOTE NO.: EN / 222 / 18

COC SEQUENCE NUMBER

COC: 2 3 4 5 6 7 8

OF: 1 2 3 4 5 6 7 8

LAB USE		SAMPLE DETAILS		CONTAINER INFORMATION			ANALYSIS INFORMATION					Additional Information
LAB ID	SAMPLE ID	DATE/TIME	MATRIX (ref below)	TYPE & PRESERVATIVE (see codes below)	TOTAL CONTAINERS	P-21/1	EA200F	S - 2				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	1/1	8/10/2019	Soil	Glass Jar	1	X	X					
2	2/1	8/10/2019	Soil	Glass Jar	1	X	X					
3	3/1	8/10/2019	Soil	Glass Jar	1	X	X					
4	4/1	8/10/2019	Soil	Glass Jar	1	X	X					
5	5/1	8/10/2019	Soil	Glass Jar	1	X	X					
6	6/1	8/10/2019	Soil	Glass Jar	1	X	X					
7	7/1	8/10/2019	Soil	Glass Jar	1	X	X					
8	8/1	8/10/2019	Soil	Glass Jar	1	X	X					
9	9/1	8/10/2019	Soil	Glass Jar	1	X	X					
10	10/1	8/10/2019	Soil	Glass Jar	1	X	X					
TOTAL					10							
Container Codes:												
W - Water; S - Soil; P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = YOA Vial HQ Preserved; VB = YOA Vial Sed - Sediment; SI - Sludge; Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag; A - Air; D - Dust.												
Environmental Division Sydney Work Order Reference ES1932897												
Telephone : + 61-2-8784 8655												

Environmental Division
Sydney
Work Order Reference
ES1932897



Telephone : + 61-2-8784 8656

Container Codes:

W - Water, S - Soil, Sed - Sediment, Sl - Sludge, P - Unpreserved Plastic, N = Nitric Preserved Plastic, ORC = Nitric Preserved ORC, SH = Sodium Hydroxide/Cl Preserved, S = Sodium Hydroxide Preserved Plastic, AG = Amber Glass Unpreserved, AP = Airfreight Unpreserved Plastic, V = VOA Via HCl Preserved, VB = VOA Via Sodium Bisulphate Preserved, VS = VOA Via Sulfuric Preserved, AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass, H = HCl Preserved Plastic, HS = HCl Preserved Speciation bottle, SP = Sulfuric Preserved Plastic, F = Formaldehyde Preserved Glass, Z = Zinc Acetate Preserved Bottle, E = EDTA Preserved Bottles, ST = Sterile Bottle, ASS = Plastic Bag for Acid Sulphate Solids, B = Unpreserved Bag.



Chain of Custody

DM McMahon Pty Ltd
PO Box 3118
6 Jones St, Wagera Wagera NSW 2650
Ph: (02) 69 310 510

Relinquished by: Zach Bradley
Date: 8/10/2019
Signature: *[Signature]*
Received by: *[Signature]*
Date: *11/10/19*
Signature: *9/10/19*
Relinquished by: *[Signature]*
Date: *[Signature]*
Signature: *[Signature]*

Turnaround Requirements: ☒ Standard TAT ☐ Non Standard or Urgent TAT (List Due Date):

Analysing Laboratory: ALS - Sydney
Project: Coolamon - Wade St
Order No.: 6373
Project Manager: Zach Bradley
Contact Ph: (02) 69 310 510
Sampling Officer: Z. Bradley
Report Format: Default
Email Reports to: admin@dmcmahon.com.au
cc: zach@dmcmahon.com.au
Email Invoice to: admin@dmcmahon.com.au

For Laboratory Use Only (Circle)
Custody Seal Intact? Yes
Free Ice/Frozen bags Yes
Random sample temp on receipt Yes
Other comments:
QUOTE NO.: EN / 222 / 18
COC SEQUENCE NUMBER
COC: 1 3 4 5 6 7 8
OF: 1 3 4 5 6 7 8

SAMPLE DETAILS				CONTAINER INFORMATION				TESTS REQUIRED				Additional Information			
LAB ID	SAMPLE ID	DATE/TIME	MATRIX (ref below)	TYPE & PRESERVATIVE (see codes below)	TOTAL CONTAINERS	P-21/1	EA200F	S - 2						Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.	
11	2/3	8/10/2019	Soil	Glass Jar	1	X	X								
12	5/2	8/10/2019	Soil	Glass Jar	1	X	X								
13	9/3	8/10/2019	Soil	Glass Jar	1	X	X								
14	D	8/10/2019	Soil	Glass Jar	1			X							
TOTAL					4										
Matrix															
Container Code															
W - Water; S - Soil; P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VA = VOA Vial Sed - Sediment; SI - Sludge; Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; A - Air; D - Dust.															

Matrix: W - Water; S - Soil; Sed - Sediment; Sl - Sludge; A - Air; D - Dust.
Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cl Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic; V = VOA/VIA HQ Preserved; V3 = VOA/VIA Sodium Bisulphate Preserved; VS = VOA/VIA Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HQ Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.



Chain of Custody

DM McMahon Pty Ltd
PO BOX 6418
6-10th St Waggaman NSW 2650
Ph: (02) 69310510

Relinquished by: Zach Bradley

Date: 17/10/2019

Signature:

Received by:

Date: 18/10/2019

Signature:

Relinquished by:

Date:

Signature:

Received by:

Date:

Signature:

Turnaround Requirements: ☒ Standard TAT ☐ Non Standard or Urgent TAT (List Due Date):

Analysing Laboratory: ALS-Sydney

Project: Coolamon - Wade St - 2

Order No.: 6373

Project Manager: Zach Bradley

Contact Ph: (02) 69 310 510

Sampling Officer: Z. Bradley

Report Format: Default

Email Reports to: admin@dmcmahon.com.au

cc: zach@dmcmahon.com.au

Email Invoice to: admin@dmcmahon.com.au

Lab Comments:

QUOTE NO.: EN / 222 / 18

COC SEQUENCE NUMBER

COC: 2 3 4 5 6 7 8

OF: 1 3 4 5 6 7 8

SAMPLE DETAILS

ANALYSIS REQUIRED

Additional Information

LAB ID	SAMPLE ID	DATE/TIME	MATRIX (ref below)	TYPE & PRESERVATIVE (see codes below)	TOTAL CONTAINERS	EA200F	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	1/1	8/10/2019	Soil	Glass Jar	1	X	✓
2	2/1	8/10/2019	Soil	Glass Jar	1	X	✓
3	3/1	8/10/2019	Soil	Glass Jar	1	X	✓
4	4/1	8/10/2019	Soil	Glass Jar	1	X	✓
5	5/1	8/10/2019	Soil	Glass Jar	1	X	✓
6	6/1	8/10/2019	Soil	Glass Jar	1	X	✓
7	7/1	8/10/2019	Soil	Glass Jar	1	X	✓
8	8/1	8/10/2019	Soil	Glass Jar	1	X	✓
9	9/1	8/10/2019	Soil	Glass Jar	1	X	✓
10	10/1	8/10/2019	Soil	Glass Jar	1	X	✓
TOTAL					10		

Lab / Analysis: New Castle (SH200F)

Organised By / Date: 1-13

Relinquished By / Date: 18/10/19

Connote / Courier: 18/10/19

WO No: 18/10/19

Attached By: Environmental Division

Sydney

Work Order Reference

ES1934212

Barcode

Telephone: + 61-2-9704 8555

Container Codes:

W - Water; S - Soil;
Sed - Sediment; ST - Sludge;
A - Air; D - Dust.
P - Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial
Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Plastic; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc
Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.



Signature:

Signature:

Signature: *A. L. 11-7-02*

Signature:

Email Invoice to: admin@drmmcmahon.com.au

Signature:

COC:	1	2	3	4	5	6

OF: 1 1 3 4 5 6 7 8

OF: 1 1 3 4 5 6 7 8

SAMPLE DETAILS
CONTAINER INFORMATION
ANALYSIS REQUIRED
ADDITIONAL INFORMATION

[illegible]