LCS Estates Pty Ltd

Stage 1 Site Contamination Assessment

Proposed Residential Rezoning

Le Clos, Sancrox Road, Sancrox

Report No. RGS20821.1-AD

27 September 2019

REGIONAL GEOTECHNICAL SOLUTIONS

REGIONAL GEOTECHNICAL SOLUTIONS

Manning-Great Lakes
Port Macquarie
Coffs Harbour

RGS20821.1-AD

27 September 2019

LCS Estates Pty Ltd
c-/ Land Dynamics Australia
PO Box 2459
PORT MACQUARIE NSW 2444

Attention: Graham Burns

Dear Graham,

RE: Proposed Residential Rezoning – Le Clos, Sancrox Road, Sancrox
Stage 1 Site Contamination Assessment

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken a Stage 1 Site Contamination Assessment for the proposed residential rezoning of Lot No's 1 to 51 (excluding Lot No 49) DP776681 at Le Clos, Sancrox Road, Sancrox. The 50 lots are currently zoned RU1 – Primary Production.

The assessment found the site to be appropriate for the proposed residential development from a site contamination perspective provided the recommendations and advice of this report are adopted.

The assessment was prepared by Tim Morris, B. Appl Science (Geology). A Statement of Experience for Environmental Assessments is presented in Appendix B.

If you have any questions regarding this project, please contact the undersigned.

For and on behalf of **Regional Geotechnical Solutions Pty Ltd**

Prepared by

Tim Morris

Associate Engineering Geologist

Reviewed by

Andrew Hills

Senior Environmental Engineer

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1 INTRODUCTION

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken a Stage 1 Site Contamination Assessment for the proposed residential rezoning of Lot No's 1 to 51 (excluding Lot No 49) DP776681 at Le Clos, Sancrox Road, Sancrox. The 50 lots are currently zoned RU1 – Primary Production.

The existing lots include areas of cleared farmland and some areas of thick vegetation. In addition, the following features are visible on available satellite imagery:

- Residential dwellings are present on Lot No's 9, 13, 44 and 49. Lot No. 49 is not part of the assessment. Access to Lot No's 9, 13 and 44 was not permitted as part of the assessment;
- A large farm shed is present in Lot No. 50;
- A small farm shed is present in Lot No. 45;
- Several unnamed intermittent tributaries of Haydon's Creek flow across the site, towards the north west; and
- A large farm dam approximately 1.4ha in area is present in Lot No. 52, located near the centre of the proposed rezoning area. Lot No. 52 is excluded from the assessment.

The purpose of the work described herein was to assess the suitability of the site for residential land use with respect to the presence of site contamination resulting from past land use and activities, as well as providing discussions and recommendations regarding

- Identification of Areas of Concern and Chemicals of Concern;
- Undertake limited targeted sampling and analysis at the selected Areas of Concern to allow some preliminary analysis of the presence of contamination;
- Evaluation of test results against industry accepted criteria for the intended landuse;
- Conclusions regarding the presence of contamination at the site and its potential impacts on the proposed residential landuse; and
- The requirement for remediation, further investigation, or ongoing management of site contamination.

The work was commissioned by Graham Burns on behalf of Land Dynamics Pty Ltd and was undertaken in accordance with proposal number RGS20821.1-AA dated 26 April 2019.

2 GUIDELINES AND ASSESSMENT CRITERIA

The assessment was aimed at fulfilling the requirements of a Stage 1 Contaminated Site Assessment in accordance with NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites (2011)*.

To evaluate results and for guidance on assessment requirements, the assessment adopted the guidelines provided in the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013)*. The NEPM document provides a range of guidelines for assessment of contaminants for various land use scenarios. The proposed landuse is residential and as such comparison with the NEPM guideline values for Residential A landuse was considered appropriate. In accordance with the NEPM guideline the following criteria were adopted for this assessment:

- Health Investigation Levels (HILs) for Residential land use were used to assess the potential human health impact of heavy metals and PAH;

- Health Screening Levels (HSLs) for coarse textured (sand) or fine textured (silt and clay) soils on a Residential site were adopted as appropriate for the soils encountered to assess the potential human health impact of petroleum hydrocarbons and BTEX compounds;
- Ecological Investigation Levels (EILs) for Residential land use were used for evaluation of the potential ecological / environmental impact of heavy metals and PAH;
- Ecological Screening Levels (ESLs) for coarse textured (sand) soils or fine textured (silt and clay) soils on a Residential land use site were adopted as appropriate for the soils encountered, to assess the potential ecological / environmental impact of petroleum hydrocarbons and BTEX compounds.

In accordance with NEPM 2013, exceedance of the criteria does not necessarily deem that remediation is required, but is a trigger for further assessment of the extent of contamination and associated risks. The adopted criteria are presented in the results summary table in Appendix C.

3 METHODOLOGY

In accordance with the relevant sections of the *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Amended 2013*), the assessment involved the following process:

- A brief study of site history, with the aim of identifying past activities on or near the site that might have the potential to cause contamination;
- Site walkover to assess visible surface conditions and identify any evidence of contamination, or past activities that may cause contamination;
- Review of available recent and historical aerial photography for the last 50 years to identify visible evidence of potential contamination or potentially contaminating activities;
- Search of government records of groundwater use in the area;
- Using the above information, the site was characterised into Areas of Concern, in which the potential for contamination has been identified, and Chemicals of Concern were nominated that might be associated with those activities; and
- Based on the results of the site history study, judgemental sampling at selected locations was undertaken to assist in identifying potential contamination and assessing the requirement for further investigation or site management with regard to contamination.

4 SITE SETTING AND HISTORY

4.1 Site Description

The site is located to the south of Sancrox Road in an area of gently to moderately undulating topography where it is situated on the upper to lower slopes of several low ridgelines as shown in Figure 1.

A satellite image that shows the location of the site and the site setting is reproduced below.

***Plate 1**: Satellite image dated 2012 obtained from the NSW Government 'Six Maps 'website that illustrates the site location and setting. The approximate boundaries of the site comprising Lot No's 1 to 51 (excluding Lot No. 49) DP776681 at Le Clos, Sancrox are outlined in red.*

4.2 Historical Aerial Photography

Aerial photographs of the site were purchased from the NSW Land and Property Management Authority and reviewed to assist in identifying past land uses that may contribute to site contamination. The results of the review are summarised in Table 1.

Table 1- Aerial Photograph Summary

Year	*Lot No's 1 to 51 (excluding Lot No. 49) DP776681*	Surrounding Land
1979	Site does not appear to be disturbed and is thickly vegetated by bushland.	Thick bushland is located to the east and south. To the north and west of the site there is some cleared farmland.
1997	The site is mostly cleared with rows of grape vines visible on raised planting beds. A large dam is located on the western boundary and a shed is present in the north western corner (Lot 50).	Cleared farmland to the north. A dwelling is located next to shed in Lot 49. Small quarry (?) present to south east of Lot No. 13
2009 (Google Earth)	Grapevines are no longer present, although the raised planting beds are still visible. Le Clos Sancrox Road is present near south east boundary (= Lot 51). Dwellings are present in Lot No's 9, 13, 44	No significant change.
2019 (Google Earth)	Small farm shed is present in Lot 23 from 2016. A small farm shed was visible in Lot 45 between 2011 and 2018.	Some cleared land to the south.

4.3 NSW EPA Records

A check with the NSW EPA website (www.epa.nsw.gov.au) revealed that no notices have been issued on the site under the Contaminated Land Management Act (1997).

4.4 Lot Zoning

The lots are currently zoned RU1 – Primary Production.

4.5 Geology

The site is situated in an area underlain by the Byabarra Beds that can include lithic sandstone, mudstone, tuff and limestone.

The Port Macquarie 1:25,000 Coastal Quaternary Geology Sheet indicates alluvial / colluvial fan and valley fill is present in the alluvial depressions associated with the intermittent drainage lines and can include clay, silt, fluvial sand and gravel.

4.6 Groundwater

A groundwater bore search on the Water NSW website indicates that there are no licensed groundwater bores within 500m of the site boundary.

Regional groundwater flow direction typically follows topographic slopes, which for this site would be towards the north west.

4.7 Site Observations

Fieldwork was undertaken on 7 July 2019. Observations made during the site visit are summarised below:

- A gravel access track on a raised fill embankment was present in Lot 51 along the western boundary;
- Building materials from possible timber weather station were present in Lot 17;
- Rows of raised planting beds were present across the site where previous vineyard activities had occurred;
- Existing buildings included a large metal farm shed on a concrete slab in Lot 50 and a small farm shed in Lot 23. A gravel hard stand surface surrounded by a locked security fence was present around the hard stand area and it was therefore not accessible for the assessment. Two cars were parked on the hard stand at the time of the assessment. Building debris from the shed including metal roofing was present on the gravel hardstand surface; and
- Vegetation comprised pasture grasses with scattered trees in the areas previously used as vineyards. Thick vegetation was present in the drainage lines and along the southern boundary.

Typical site photographs are presented below.

Looking north west at raised planting beds for vineyards which have since been removed.

TP7 - Looking east at metal shed located in Lot 50

TP3 - Looking north at gravel access track on raised fill embankment in Lot 51.

TP13 - Culvert located in drainage line that that passes under Le Clos Sancrox Road in Lot 23.

4.8 Site History Summary

Based on available data the chronological development of the site was undertaken as summarised below:

- Aerial photographs indicate the site was cleared between 1979 and 1997 and the vineyards, dam in Lot 52, fill embankment in Lot 51 and metal shed in Lot 50 constructed in the same period;
- The fill embankment in Lot 51 may have been constructed from material won from the dam excavation;
- Aerial photographs indicate the vineyards were removed between 1997 and 2009;
- Dwellings were constructed in Lot No's 9, 13 and 44 between 1997 and 2009. Access to these lots was restricted; and
- A small farm shed was constructed in Lot No. 45 after 2011 and then demolished prior to 2018;
- A small farm shed was constructed in Lot 23 between 2016 and 2017.

5 SITE CONTAMINATION ASSESSMENT

5.1 Conceptual Site Model

Based on the site observations and knowledge obtained about site activities as outlined above, potential Areas of Concern and Chemicals of Concern were identified for the assessment as outlined in Table 2.

Table 2: Conceptual Site Model

Area of Concern	Mode of Potential Contamination	Chemicals of Concern	Targeted Sampling Location
AEC1: Soils in vicinity of sheds	Potential spillage of chemicals from containers including cleaning fluids/ fuel/oils, herbicide/ pesticide	Heavy Metals, TPH, BTEX, PAH, OC/OPP, asbestos	TP7, TP8, TP9
AEC2: Gravel hardstand	Leakage of fuels/oils from parked vehicles	Heavy Metals, TPH, BTEX, PAH	TP3, TP8
AEC3: Fill material	Imported fill of unknown origin (Possibly site won material from dam excavation)	Heavy Metals, TPH, BTEX, PAH, OC/OPP, asbestos	TP2, TP3, TP4
AEC4: Vineyards	Spraying of herbicide and pesticide	Heavy Metals, OC/OPP	TP1, TP5, TP6, TP9, TP10, TP11, TP12, TP13, TP14, TP15
Heavy Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc *BTEX - Benzene, Toluene, Ethylbenzene and Xylene* *TPH - Total Petroleum Hydrocarbons* *PAH – Polycyclic Aromatic Hydrocarbons* *OC/OPP – Organochlorine and Organophophorus Pesticides*			

5.2 Field Work

Field work for the assessment was undertaken on 9 July 2019. Fieldwork included:

- Site walkover to assess visible surface conditions and identify any evidence of contamination, or past activities that may cause contamination;
- 15 shallow test pits undertaken by hand tools, logged and sampled by an Engineering Geologist; and
- Test pit locations were based on professional judgement with consideration of the site history and visible site features.

The locations of the test pits are shown on Figure 1. They were obtained on site by measurement relative to existing site features

Soil samples were taken from selected depths using disposable gloves and hand tools which were decontaminated between sampling points using Decon90 detergent and deionised water. The samples were collected in acid-rinsed 250mL glass jars and placed in an ice-chilled cooler box.

5.3 Laboratory Testing

Samples were transported under chain-of-custody conditions to a NATA accredited specialist chemical testing laboratory, to be tested for the following suite of contaminants:

- Polycyclic Aromatic Hydrocarbons (PAH)

- Total Recoverable Hydrocarbons (TRH)
- Benzene, Toluene, Ethyl-benzene, Xylenes (BTEX)
- Organochlorine Pesticides (OC/OPs)
- Heavy metals (arsenic, cadmium, chromium, cobalt, copper, lead, mercury, and zinc)
- Presence of asbestos.

The results are presented in Appendix A. A summary table of the results comparing them to the adopted guidelines outlined in Section 2 is also presented in Appendix A.

5.4 Quality Control

Samples were obtained using industry accepted protocols for sample treatment, preservation, and equipment decontamination. A duplicate of TP6 (0.2 - 0.3m) was submitted to the laboratory for analysis as TP6B (0.2 – 0.3m). Results of the duplicate analysis indicated heavy metal concentrations correlated well between the samples.

In addition to the field QC procedures, the laboratory conducted internal quality control testing including surrogates, blanks, and laboratory duplicate samples. The results are presented with the laboratory test results in Appendix A.

On the basis of the results of the field and laboratory quality control procedures and testing the data is considered to reasonably represent the concentrations of contaminants in the soils at the sample locations at the time of sampling and the results can be adopted for this assessment.

5.5 Analysis Results

An appraisal of the laboratory test results presented in Appendix A is provided below with reference to the adopted soil investigation and screening levels discussed in Section 2.

- Concentrations of heavy metals were above detection, but were below adopted health investigation criteria for a residential site;
- Concentrations of Total Recoverable Hydrocarbon (TRH) were above detection in two samples (TP5, 0-0.1m & TP13 0 – 0.1m), but were below adopted health investigation criteria for a residential site;
- Concentrations of PAH hydrocarbons were below laboratory detection in all samples analysed;
- Concentrations of BTEX and PCB contaminants were below laboratory detection in all samples analysed;
- Concentrations of herbicide/pesticide contaminants were below laboratory detection in all samples analysed; and
- Asbestos was not detected in the four soil samples submitted.

6 ASSESSMENT AND CONCLUSIONS REGARDING SITE CONTAMINATION

A Stage 1 Site Contamination Assessment was undertaken to assess all past and present potentially contaminating activities and contamination types and evaluate the property's suitability for residential use.

6.1 Summary

Based on the results outlined in this report the following points and recommendations are made:

- Considering the age of the sheds present on site in Lot 50 and Lot 23 there is the potential for asbestos type building materials to have been used in their construction. Prior to site demolition works a hazardous material inspection should therefore be undertaken to determine if hazardous materials including asbestos are present;
- Where asbestos containing material is present an Asbestos Management Plan will require preparation by a person with management or control of the workplace and should be prepared with reference to the relevant SafeWork Australia's Code of Practices for asbestos management and removal to an appropriately licensed waste management facility;
- Containers of various chemicals (oils, fuels and the like) present within the sheds should be disposed of in accordance with Council and NSW EPA requirements prior to demolition works;
- A site walkover should be undertaken by a suitably qualified person following demolition of existing buildings and removal of concrete slabs and hardstand areas to assess for potential contamination of the underlying soils once they are exposed; and
- A fill embankment was located in Lot 51 along the western boundary and rows of fill mounds from previous vineyard activities are located across the site. Should any existing fill require removal off-site, it will require assessment for a Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 in accordance with the Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 – the Excavated Natural Material (ENM) Order 2014.

6.2 Conclusion

Based on the results obtained in this investigation the site is considered suitable for the proposed residential land use with regard to the presence of soil contamination provided the recommendations and advice of this report are adopted, and site preparation works are conducted in accordance with appropriate site management protocols and legislative requirements.

7 LIMITATIONS

The findings presented in the report and used as the basis for recommendations presented herein were obtained using normal, industry accepted environmental design practises and standards. To our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

If site conditions encountered during construction vary from those discussed in this report, or, if potentially contaminated soils that contain foreign materials, or, soils with strong odours are

encountered during future works then Regional Geotechnical Solutions Pty Ltd should be contacted for further advice.

This report alone should not be used by contractors as the basis for preparation of tender documents or project estimates. Contractors using this report as a basis for preparation of tender documents should avail themselves of all relevant background information regarding the site before deciding on selection of construction materials and equipment.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

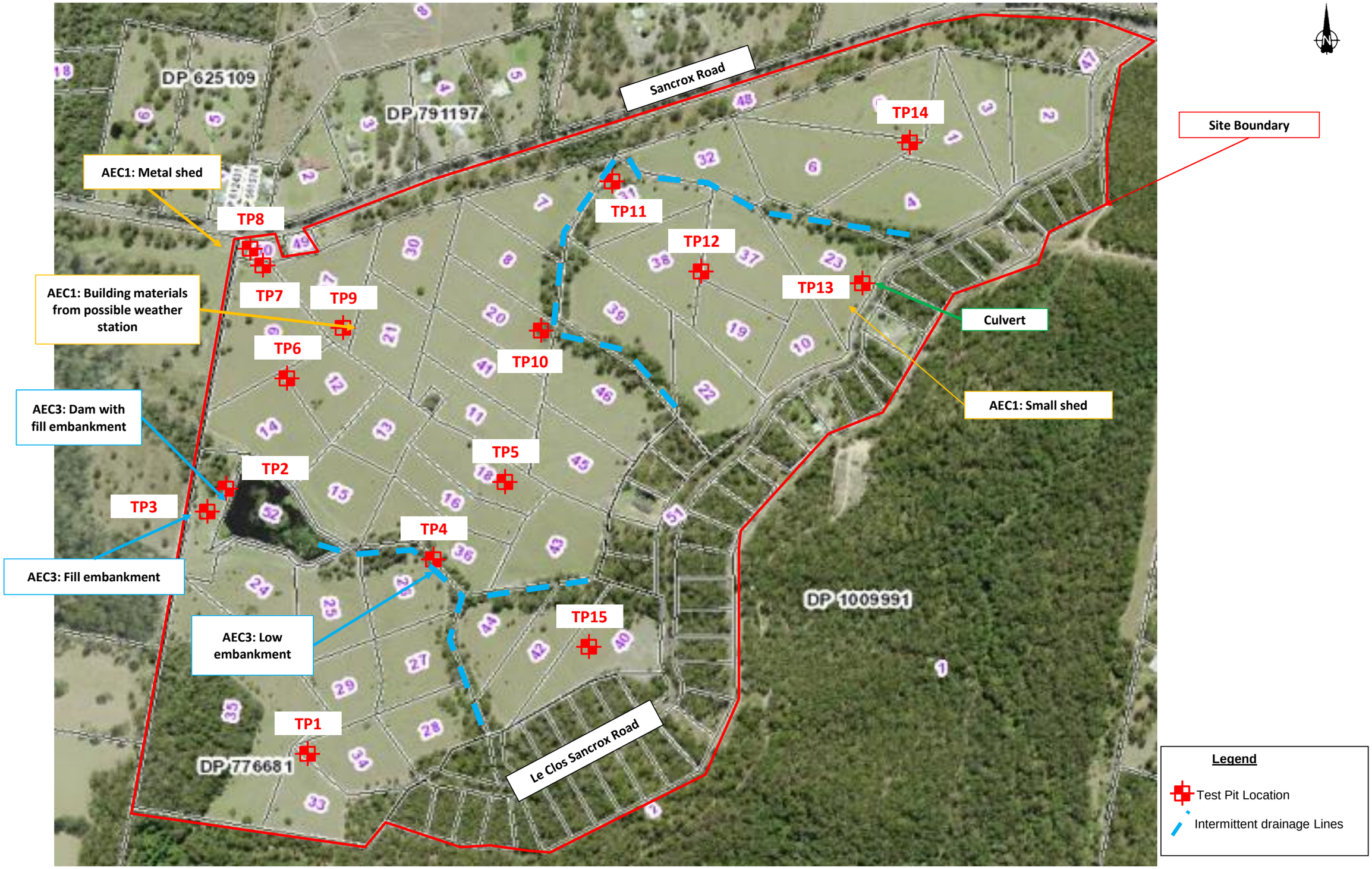
For and on behalf of

Regional Geotechnical Solutions Pty Ltd

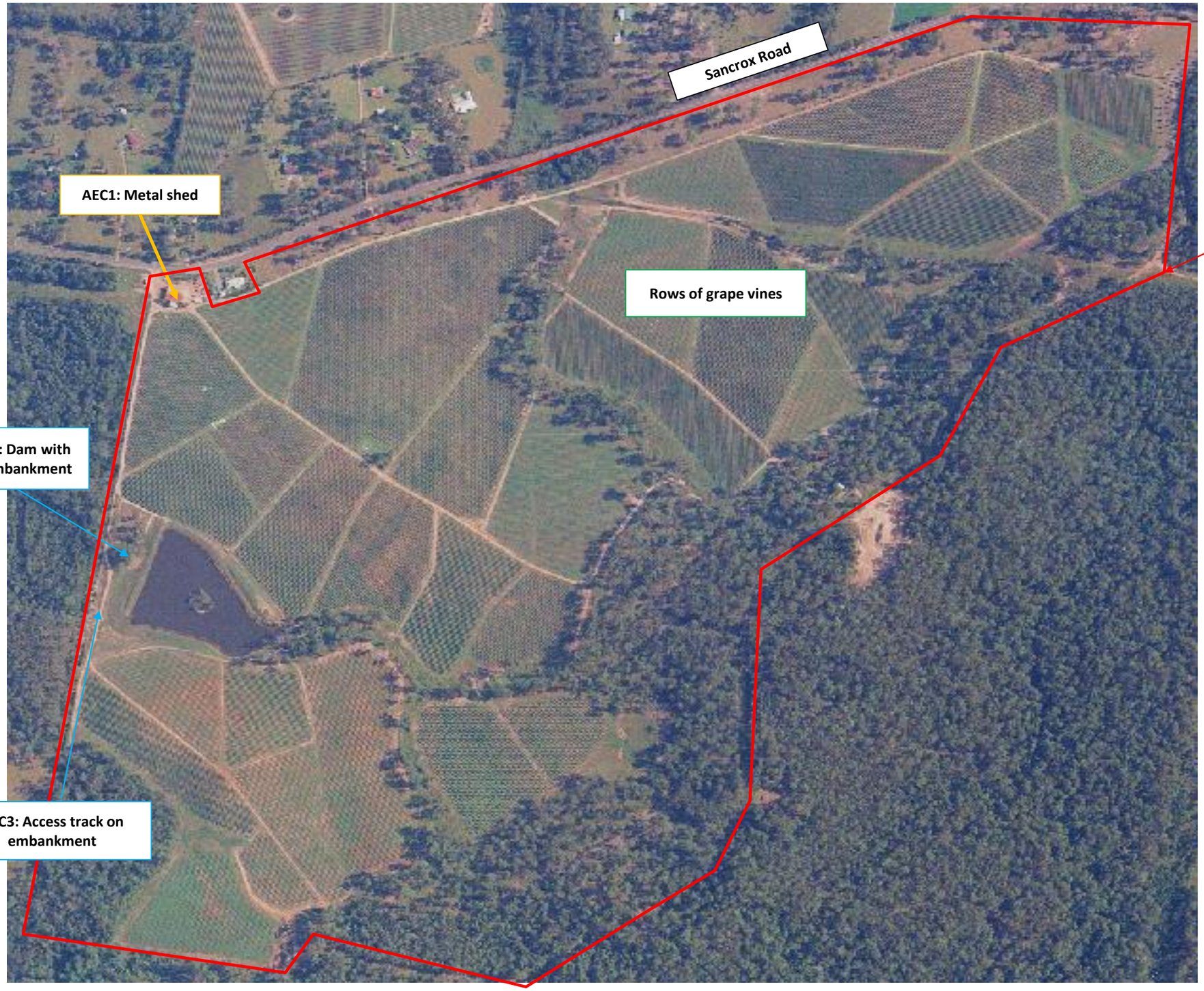
Tim Morris

Associate Engineering Geologist

Figures



REGIONAL GEOTECHNICAL SOLUTIONS	Client:	LAND DYNAMICS PTY LTD	Job No.	RGS20821.1
	Project:	PROPOSED REZONING	Drawn By:	GC
			Scale:	NTS
		LE CLOS SANCROX ROAD, SANCROX	Date:	12-Sep-19
	Title:	INVESTIGATION LOCATION PLAN	Figure No.	1



REGIONAL GEOTECHNICAL SOLUTIONS

Client:	LAND DYNAMICS PTY LTD	Job No.	RGS20821.1
Project:	PROPOSED REZONING	Drawn By:	GC
		Scale:	NTS
	LE CLOS SANCROX ROAD, SANCROX	Date:	12-Sep-19
Title:	1997 AERIAL PHOTOGRAPH	Figure No.	**2**

Appendix A

Laboratory Test Results

REGIONAL GEOTECHNICAL SOLUTIONS

Client: Land Dynamics
Job No. RGS20821.1
Project: Proposed Rezoning
Location: Le Clos, Sancrox Road. Sancrox

Comparison of Contamination Analysis Results with Adopted Investigation Levels (Results in mg/kg)

SAMPLE	DEPTH	Material	Asbestos Presence	TOTAL RECOVERABLE HYDROCARBONS					PAH		DDT+DDE	Aldrin	PCB	BTEX		Heavy Metals							
	(m)			C6-C10	C10-C16	C16-C34	C34-C40	TOTAL	Total	b-a-p (TEQ)	Pesticides	Pesticides		Sum	Napthalene	As	Cd	Cr (total)	Cu	Pb	Ni	Zn	Hg
TP1	0.0 - 0.1	Topsoil	----	----	----	----	----	----	----	----	----	----	----	----	----	6	<0.4	21	14	10	<5	10	<0..1
TP2	0.0 - 0.1	Topsoil	----	----	----	----	----	----	----	----	----	----	----	----	----	2.6	<0.4	11	13	9.6	15	55	<0..1
TP3	0.0 - 0.1	Fill	----	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	12	<0.4	14	19	9.2	7.8	83	<0..1
TP4	0 - 0.1	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	13	<0.4	22	14	9.7	6.5	61	<0..1
TP5	0 - 0.1	Fill	----	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	12	<0.4	11	5.2	8.1	<5	12	<0..1
TP5	0.3 - 0.4	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	14	<0.4	10	<5	9.8	<5	6.1	<0..1
TP6	0.2 - 0.3	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	<2	<0.4	9.6	<5	5.7	<5	<5	<0..1
Duplicate TP6B	0.2 - 0.3	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	5	<0.4	15	<5	8.1	<5	<5	<0..1
TP7	0 - 0.1	Fill	No	<20	<50	170	<100	170	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	5.8	0.6	12	19	15	5	230	1.1
TP8	0 - 0.1	Fill	No	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	8.7	<0.4	22	31	17	9.3	130	<0..1
TP9	0 - 0.1	Natural	No	----	----	----	----	----	----	----	----	----	----	----	----	10	<0.4	19	7.4	14	<0.1	<5	<0..1
TP10	0 - 0.1	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	2.6	<0.4	10	5.5	7.4	<5	14	<0..1
TP11	0.25 - 0.35	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	2.8	<0.4	12	<5	8.5	<5	10	<0..1
TP13	0 - 0.1	Natural	----	<20	<50	110	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	7.9	<0.4	16	13	15	7.6	39	<0..1
TP14	0 - 0.1	Fill	No	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	9.7	<0.4	1	9.4	14	<5	7.6	<0..1
TP14	0.4 - 0.5	Natural	----	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	14	<0.4	14	<5	16	<5	5	<0..1
TP15	0 - 0.1	Fill	----	<20	<50	<100	<100	<100	<0.5	0.6	<0.05	<0.05	<0.1	<0.2	<1	10	<0.4	40	27	20	6.9	34	<0..1
TP15	0.3 - 0.4	Natural	----	----	----	----	----	----	----	----	----	----	----	----	----	4.9	<0.4	36	17	16	8.4	41	<0..1
CRITERIA (NEPM 2013)																							
Health Investigation Level (HIL):*			*0.001% (w/w)*						*300*	*3*	*240*	*6*				*100*	*20*	*100#*	*600*	*300*	*400*	*7400*	*40*
*Health Screening Level (HSL)***				*45*	*110*																		
*Ecological Screening Level (ESL)****				*180*	*120*	*300*	*2800*																
Ecological Investigation Level (EIL)@															*170*	*100*							

CRITERIA:

* Health Based Investigation Levels for Residential A (NEPM 2013)

** Health Screening Level (F2) for residential land use and fine grained soil (clay), 0 - 1m depth

*** Ecological Screening Level for residential land use

@ Ecological Investigation Level - aged (>2 years) for residential landuse

Chromium VI

Speciation testing confirmed only Chromium III present

Denotes concentration exceeds health based guideline for Residential A site

Denotes concentration exceeds ecological guideline for Residential A site

Denotes concentration exceeds health and ecological based guideline for Residential A site

Regional Geotechnical Solutions
44 Bent Street
Wingham
NSW 2429

Attention: **Tim Morris**

Report **665040-S**
Project name PROPOSED REZONING
Project ID RGS20821.1
Received Date Jul 10, 2019

Client Sample ID			**TP1 0-0.1**	**TP2 0.1-0.2**	**TP3 0-0.5**	**TP4 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Jl13477**	**S19-Jl13478**	**S19-Jl13479**	**S19-Jl13480**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	83	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			TP1 0-0.1	TP2 0.1-0.2	TP3 0-0.5	TP4 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13477	S19-Jl13478	S19-Jl13479	S19-Jl13480
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	104	-
p-Terphenyl-d14 (surr.)	1	%	-	-	106	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Dibutylchlorendate (surr.)	1	%	-	-	99	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	101	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-

Client Sample ID			TP1 0-0.1	TP2 0.1-0.2	TP3 0-0.5	TP4 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13477	S19-Jl13478	S19-Jl13479	S19-Jl13480
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	99	-
Heavy Metals						
Arsenic	2	mg/kg	6.0	2.6	12	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	11	14	22
Copper	5	mg/kg	14	13	19	14
Lead	5	mg/kg	10	9.6	9.2	9.7
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	15	7.8	6.5
Zinc	5	mg/kg	10	55	83	61
% Moisture	1	%	19	20	4.5	25

Client Sample ID			TP5 0-0.1	TP5 0.3-0.4	TP6 0.2-0.3	TP6B 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13481	S19-Jl13482	S19-Jl13483	S19-Jl13484
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	-

Client Sample ID			TP5 0-0.1	TP5 0.3-0.4	TP6 0.2-0.3	TP6B 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13481	S19-Jl13482	S19-Jl13483	S19-Jl13484
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	112	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	-
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH*	0.5	mg/kg	< 0.5	-	-	-
2-Fluorobiphenyl (surr.)	1	%	98	-	-	-
p-Terphenyl-d14 (surr.)	1	%	100	-	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-

Client Sample ID			TP5 0-0.1	TP5 0.3-0.4	TP6 0.2-0.3	TP6B 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13481	S19-Jl13482	S19-Jl13483	S19-Jl13484
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-	-
Dibutylchlorendate (surr.)	1	%	112	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	117	-	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Bolstar	0.2	mg/kg	< 0.2	-	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	-
Coumaphos	2	mg/kg	< 2	-	-	-
Demeton-S	0.2	mg/kg	< 0.2	-	-	-
Demeton-O	0.2	mg/kg	< 0.2	-	-	-
Diazinon	0.2	mg/kg	< 0.2	-	-	-
Dichlorvos	0.2	mg/kg	< 0.2	-	-	-
Dimethoate	0.2	mg/kg	< 0.2	-	-	-
Disulfoton	0.2	mg/kg	< 0.2	-	-	-
EPN	0.2	mg/kg	< 0.2	-	-	-
Ethion	0.2	mg/kg	< 0.2	-	-	-
Ethoprop	0.2	mg/kg	< 0.2	-	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	-
Fenitrothion	0.2	mg/kg	< 0.2	-	-	-
Fensulfothion	0.2	mg/kg	< 0.2	-	-	-
Fenthion	0.2	mg/kg	< 0.2	-	-	-
Malathion	0.2	mg/kg	< 0.2	-	-	-
Merphos	0.2	mg/kg	< 0.2	-	-	-
Methyl parathion	0.2	mg/kg	< 0.2	-	-	-
Mevinphos	0.2	mg/kg	< 0.2	-	-	-
Monocrotophos	2	mg/kg	< 2	-	-	-
Naled	0.2	mg/kg	< 0.2	-	-	-
Omethoate	2	mg/kg	< 2	-	-	-
Phorate	0.2	mg/kg	< 0.2	-	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Pyrazophos	0.2	mg/kg	< 0.2	-	-	-
Ronnel	0.2	mg/kg	< 0.2	-	-	-

Client Sample ID			TP5 0-0.1	TP5 0.3-0.4	TP6 0.2-0.3	TP6B 0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13481	S19-Jl13482	S19-Jl13483	S19-Jl13484
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Terbufos	0.2	mg/kg	< 0.2	-	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	-
Tokuthion	0.2	mg/kg	< 0.2	-	-	-
Trichloronate	0.2	mg/kg	< 0.2	-	-	-
Triphenylphosphate (surr.)	1	%	92	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	12	14	< 2	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	10	9.6	15
Copper	5	mg/kg	5.2	< 5	< 5	< 5
Lead	5	mg/kg	8.1	9.8	5.7	8.1
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	12	6.1	< 5	< 5
% Moisture	1	%	18	16	9.0	11

Client Sample ID			TP7 0-0.1	TP8 0-0.1	TP9 0-0.1	TP10 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13485	S19-Jl13486	S19-Jl13487	S19-Jl13488
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	23	< 20	-	-
TRH C15-C28	50	mg/kg	99	< 50	-	-
TRH C29-C36	50	mg/kg	100	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	222	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	107	105	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	170	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	170	< 100	-	-

Client Sample ID			TP7 0-0.1	TP8 0-0.1	TP9 0-0.1	TP10 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S19-Jl13485**	**S19-Jl13486**	**S19-Jl13487**	**S19-Jl13488**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	107	109	-	-
p-Terphenyl-d14 (surr.)	1	%	106	109	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	-
Dibutylchlorendate (surr.)	1	%	102	95	-	-
Tetrachloro-m-xylene (surr.)	1	%	120	114	-	-

Client Sample ID			TP7 0-0.1	TP8 0-0.1	TP9 0-0.1	TP10 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13485	S19-Jl13486	S19-Jl13487	S19-Jl13488
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Coumaphos	2	mg/kg	< 2	< 2	-	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	-
EPN	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Monocrotophos	2	mg/kg	< 2	< 2	-	-
Naled	0.2	mg/kg	< 0.2	< 0.2	-	-
Omethoate	2	mg/kg	< 2	< 2	-	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	96	98	-	-
Heavy Metals						
Arsenic	2	mg/kg	5.8	8.7	10	2.6
Cadmium	0.4	mg/kg	0.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	22	19	10
Copper	5	mg/kg	19	31	7.4	5.5
Lead	5	mg/kg	15	17	14	7.4
Mercury	0.1	mg/kg	1.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.0	9.3	< 5	< 5
Zinc	5	mg/kg	230	130	21	14
% Moisture	1	%	38	17	25	21

Client Sample ID			TP11 0.25-0.35	TP13 0-0.1	TP14 0-0.1	TP14 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13489	S19-Jl13490	S19-Jl13491	S19-Jl13492
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	66	< 50	< 50
TRH C29-C36	50	mg/kg	-	63	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	129	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	110	108	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	110	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	110	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	105	104	105
p-Terphenyl-d14 (surr.)	1	%	-	105	102	104

Client Sample ID			TP11 0.25-0.35	TP13 0-0.1	TP14 0-0.1	TP14 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13489	S19-Jl13490	S19-Jl13491	S19-Jl13492
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	-	118	117	117
Tetrachloro-m-xylene (surr.)	1	%	-	115	117	118
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2

Client Sample ID			TP11 0.25-0.35	TP13 0-0.1	TP14 0-0.1	TP14 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13489	S19-Jl13490	S19-Jl13491	S19-Jl13492
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	< 2	< 2	< 2
Naled	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	-	< 2	< 2	< 2
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	90	95	97
Heavy Metals						
Arsenic	2	mg/kg	2.8	7.9	9.7	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	16	11	14
Copper	5	mg/kg	< 5	13	9.4	< 5
Lead	5	mg/kg	8.5	15	14	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	7.6	< 5	< 5
Zinc	5	mg/kg	10	39	7.6	5.0
% Moisture	1	%	20	22	19	22

Client Sample ID			TP15 0-0.1	TP15 0.3-0.4
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13493	S19-Jl13494
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	105	-

Client Sample ID			TP15 0-0.1	TP15 0.3-0.4
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13493	S19-Jl13494
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	106	-
p-Terphenyl-d14 (surr.)	1	%	106	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-

Client Sample ID			TP15 0-0.1	TP15 0.3-0.4
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13493	S19-Jl13494
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-
Toxaphene	1	mg/kg	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-
Dibutylchlorendate (surr.)	1	%	117	-
Tetrachloro-m-xylene (surr.)	1	%	117	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	96	-

Client Sample ID			TP15 0-0.1	TP15 0.3-0.4
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S19-Jl13493	S19-Jl13494
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	10	4.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	40	36
Copper	5	mg/kg	27	17
Lead	5	mg/kg	20	16
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	6.9	8.4
Zinc	5	mg/kg	34	41
% Moisture	1	%	18	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 12, 2019	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jul 12, 2019	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Jul 12, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Jul 10, 2019	14 Days
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

Company Name: Regional Geotechnical Solutions
Address: 44 Bent Street
Wingham
NSW 2429

Project Name: PROPOSED REZONING
Project ID: RGS20821.1

Order No.:
Report #: 665040
Phone: (02) 65535641
Fax:

Received: Jul 10, 2019 2:40 PM
Due: Jul 17, 2019
Priority: 5 Day
Contact Name: Tim Morris

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins | mgt Suite B14	Moisture Set	Eurofins | mgt Suite B10
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	TP1 0-0.1	Not Provided		Soil	S19-Jl13477			X		X	
2	TP2 0.1-0.2	Not Provided		Soil	S19-Jl13478			X		X	
3	TP3 0-0.5	Not Provided		Soil	S19-Jl13479				X	X	X
4	TP4 0-0.1	Not Provided		Soil	S19-Jl13480			X		X	
5	TP5 0-0.1	Not Provided		Soil	S19-Jl13481				X	X	X
6	TP5 0.3-0.4	Not Provided		Soil	S19-Jl13482			X		X	
7	TP6 0.2-0.3	Not Provided		Soil	S19-Jl13483			X		X	
8	TP6B 0.2-0.3	Not Provided		Soil	S19-Jl13484			X		X	
9	TP7 0-0.1	Not Provided		Soil	S19-Jl13485	X			X	X	X

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Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins | mgt Suite B14	Moisture Set	Eurofins | mgt Suite B10
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
10	TP8 0-0.1	Not Provided		Soil	S19-Jl13486	X			X	X	X
11	TP9 0-0.1	Not Provided		Soil	S19-Jl13487	X		X		X	
12	TP10 0-0.1	Not Provided		Soil	S19-Jl13488			X		X	
13	TP11 0.25-0.35	Not Provided		Soil	S19-Jl13489			X		X	
14	TP13 0-0.1	Not Provided		Soil	S19-Jl13490				X	X	X
15	TP14 0-0.1	Not Provided		Soil	S19-Jl13491				X	X	X
16	TP14 0.4-0.5	Not Provided		Soil	S19-Jl13492	X			X	X	X
17	TP15 0-0.1	Not Provided		Soil	S19-Jl13493				X	X	X
18	TP15 0.3-0.4	Not Provided		Soil	S19-Jl13494			X		X	
19	TP12 0.1-0.2	Not Provided		Soil	S19-Jl13495		X				
Test Counts						4	1	10	8	18	8

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	96			70-130	Pass	
TRH C10-C14	%	86			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	116			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	81			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Anthracene	%	104			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	95			70-130	Pass	
Benzo(b&j)fluoranthene	%	79			70-130	Pass	
Benzo(g.h.i)perylene	%	95			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	100			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	101			70-130	Pass	
Naphthalene	%	104			70-130	Pass	
Phenanthrene	%	103			70-130	Pass	
Pyrene	%	102			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	88			70-130	Pass	
4.4'-DDE	%	81			70-130	Pass	
4.4'-DDT	%	79			70-130	Pass	
a-BHC	%	81			70-130	Pass	
Aldrin	%	79			70-130	Pass	
b-BHC	%	73			70-130	Pass	
d-BHC	%	81			70-130	Pass	
Dieldrin	%	80			70-130	Pass	
Endosulfan I	%	78			70-130	Pass	
Endosulfan II	%	75			70-130	Pass	
Endosulfan sulphate	%	81			70-130	Pass	
Endrin	%	78			70-130	Pass	
Endrin aldehyde	%	73			70-130	Pass	
Endrin ketone	%	74			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-BHC (Lindane)	%	80			70-130	Pass	
Heptachlor	%	77			70-130	Pass	
Heptachlor epoxide	%	81			70-130	Pass	
Hexachlorobenzene	%	79			70-130	Pass	
Methoxychlor	%	72			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	125			70-130	Pass	
Dimethoate	%	117			70-130	Pass	
Ethion	%	113			70-130	Pass	
Fenitrothion	%	98			70-130	Pass	
Methyl parathion	%	109			70-130	Pass	
Mevinphos	%	114			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	114			70-130	Pass	
Cadmium	%	103			70-130	Pass	
Chromium	%	106			70-130	Pass	
Copper	%	99			70-130	Pass	
Lead	%	104			70-130	Pass	
Mercury	%	107			70-130	Pass	
Nickel	%	100			70-130	Pass	
Zinc	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-Jl13478	CP	%	91			70-130	Pass	
Cadmium	S19-Jl13478	CP	%	100			70-130	Pass	
Chromium	S19-Jl13478	CP	%	109			70-130	Pass	
Copper	S19-Jl13478	CP	%	92			70-130	Pass	
Lead	S19-Jl13478	CP	%	99			70-130	Pass	
Mercury	S19-Jl13478	CP	%	113			70-130	Pass	
Nickel	S19-Jl13478	CP	%	100			70-130	Pass	
Zinc	S19-Jl13478	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S19-Jl19147	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S19-Jl19147	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S19-Jl21245	NCP	%	122			70-130	Pass	
Acenaphthylene	S19-Jl21245	NCP	%	123			70-130	Pass	
Anthracene	S19-Jl21245	NCP	%	118			70-130	Pass	
Benz(a)anthracene	S19-Jl21245	NCP	%	112			70-130	Pass	
Chrysene	S19-Jl21245	NCP	%	108			70-130	Pass	
Fluoranthene	S19-Jl21245	NCP	%	123			70-130	Pass	
Fluorene	S19-Jl21245	NCP	%	127			70-130	Pass	
Naphthalene	S19-Jl21245	NCP	%	110			70-130	Pass	
Phenanthrene	S19-Jl21245	NCP	%	116			70-130	Pass	
Pyrene	S19-Jl21245	NCP	%	124			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dimethoate	S19-Jl21245	NCP	%	84			70-130	Pass	
Ethion	S19-Jl21245	NCP	%	118			70-130	Pass	
Fenitrothion	S19-Jl21245	NCP	%	104			70-130	Pass	
Methyl parathion	S19-Jl21245	NCP	%	116			70-130	Pass	
Mevinphos	S19-Jl21245	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Jl13481	CP	%	84			70-130	Pass	
4.4'-DDD	S19-Jl13481	CP	%	102			70-130	Pass	
4.4'-DDE	S19-Jl13481	CP	%	76			70-130	Pass	
4.4'-DDT	S19-Jl13481	CP	%	73			70-130	Pass	
a-BHC	S19-Jl13481	CP	%	86			70-130	Pass	
Aldrin	S19-Jl13481	CP	%	85			70-130	Pass	
b-BHC	S19-Jl13481	CP	%	73			70-130	Pass	
d-BHC	S19-Jl13481	CP	%	80			70-130	Pass	
Dieldrin	S19-Jl13481	CP	%	80			70-130	Pass	
Endosulfan I	S19-Jl13481	CP	%	84			70-130	Pass	
Endosulfan II	S19-Jl13481	CP	%	78			70-130	Pass	
Endosulfan sulphate	S19-Jl13481	CP	%	79			70-130	Pass	
Endrin	S19-Jl13481	CP	%	74			70-130	Pass	
Endrin aldehyde	S19-Jl13481	CP	%	74			70-130	Pass	
Endrin ketone	S19-Jl13481	CP	%	79			70-130	Pass	
g-BHC (Lindane)	S19-Jl13481	CP	%	82			70-130	Pass	
Heptachlor	S19-Jl13481	CP	%	78			70-130	Pass	
Heptachlor epoxide	S19-Jl13481	CP	%	84			70-130	Pass	
Hexachlorobenzene	S19-Jl13481	CP	%	79			70-130	Pass	
Methoxychlor	S19-Jl13481	CP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S19-Jl13492	CP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Jl13492	CP	%	90			70-130	Pass	
Toluene	S19-Jl13492	CP	%	94			70-130	Pass	
Ethylbenzene	S19-Jl13492	CP	%	95			70-130	Pass	
m&p-Xylenes	S19-Jl13492	CP	%	92			70-130	Pass	
o-Xylene	S19-Jl13492	CP	%	93			70-130	Pass	
Xylenes - Total	S19-Jl13492	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Jl13492	CP	%	86			70-130	Pass	
TRH C6-C10	S19-Jl13492	CP	%	87			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Jl13477	CP	mg/kg	6.0	6.1	2.0	30%	Pass	
Cadmium	S19-Jl13477	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Jl13477	CP	mg/kg	21	20	3.0	30%	Pass	
Copper	S19-Jl13477	CP	mg/kg	14	13	10	30%	Pass	
Lead	S19-Jl13477	CP	mg/kg	10	9.5	6.0	30%	Pass	
Mercury	S19-Jl13477	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Jl13477	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S19-Jl13477	CP	mg/kg	10	9.3	9.0	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S19-Jl18039	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Jl18039	NCP	mg/kg	2.4	2.4	3.0	30%	Pass	
Anthracene	S19-Jl18039	NCP	mg/kg	2.9	2.9	<1	30%	Pass	
Benz(a)anthracene	S19-Jl18039	NCP	mg/kg	2.8	3.0	6.0	30%	Pass	
Benzo(a)pyrene	S19-Jl18039	NCP	mg/kg	2.4	2.7	9.0	30%	Pass	
Benzo(b&j)fluoranthene	S19-Jl18039	NCP	mg/kg	2.5	2.4	2.0	30%	Pass	
Benzo(g.h.i)perylene	S19-Jl18039	NCP	mg/kg	2.0	2.1	7.0	30%	Pass	
Benzo(k)fluoranthene	S19-Jl18039	NCP	mg/kg	2.1	2.8	28	30%	Pass	
Chrysene	S19-Jl18039	NCP	mg/kg	2.8	2.9	4.0	30%	Pass	
Dibenz(a.h)anthracene	S19-Jl18039	NCP	mg/kg	0.7	0.8	6.0	30%	Pass	
Fluoranthene	S19-Jl18039	NCP	mg/kg	5.2	5.4	4.0	30%	Pass	
Fluorene	S19-Jl18039	NCP	mg/kg	2.1	2.1	3.0	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Jl18039	NCP	mg/kg	1.8	1.9	6.0	30%	Pass	
Naphthalene	S19-Jl18039	NCP	mg/kg	2.0	1.2	47	30%	Fail	Q15
Phenanthrene	S19-Jl18039	NCP	mg/kg	5.4	5.7	6.0	30%	Pass	
Pyrene	S19-Jl18039	NCP	mg/kg	5.9	6.2	5.0	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S19-Jl10386	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S19-Jl10386	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S19-Jl10386	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S19-Jl10386	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Jl13479	CP	%	4.5	5.1	13	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Jl13481	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Jl13481	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Jl13481	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S19-Jl13481	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S19-Jl13486	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Jl13486	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S19-Jl13486	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Jl13486	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S19-Jl13486	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S19-Jl13486	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Jl13489	CP	%	20	19	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Jl13491	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Jl13491	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Jl13491	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Jl13491	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Jl13491	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Jl13491	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Jl13491	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Jl13491	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Jl13491	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Appendix B

Statement of Experience

REGIONAL GEOTECHNICAL SOLUTIONS

Manning-Great Lakes
Port Macquarie
Coffs Harbour

Contaminated Land Assessment – Statement of Experience

Report Author

Tim Morris - Associate Engineering Geologist

Date of Birth: 16 February 1972

Education & Affiliations

Bachelor of Applied Science (Honours, Geology) – University of Technology, Sydney

Graduate Certificate of Engineering Science - (Geotechnical) University of NSW

Summary

Tim worked in England from 2000 to 2002 as a Site Engineer on a range of geotechnical and environmental projects. From 2002 to 2006 he was the Acid Sulfate Soils Project Officer with Kempsey Shire Council. He then worked with the Coffey Group from 2006 to 2010 as an Engineering Geologist, working on geotechnical and environmental projects including roads, site investigations, site contamination assessments, construction and urban developments. During this time he was based out of the Port Macquarie office where he coordinated geotechnical and environmental projects and was the Port Macquarie Office Manager prior to leaving the company.

In 2010 he joined Regional Geotechnical Solutions, a consulting firm focused on providing high quality geotechnical consulting services to regional centres. He currently works on a broad range of geotechnical projects including site contamination assessments, pavement design, slope stability, and geotechnical foundation investigations.

Contamination Assessments – Previous Experience

Recent site contamination assessments completed by Tim for RGS on similar contamination assessment projects are summarised in Table 1.

Table 1 – Summary of Site Contamination Assessments

Job Number	Project	Location
RGS20494.1	Stage 1 and Stage 2 Contamination Assessment – Oxley Beach	Port Macquarie
RGS20578.1	Stage 1 Contamination Assessment – Proposed College, Kempsey Airport	Aldavilla
RGS00975.1	Stage 1 and Stage 2 Contamination Assessment – Proposed Daycare, 226 Oxley Highway	Port Macquarie