

Appendix I

Preliminary Contamination Assessment

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Contaminated Land Assessment
For
Proposed Riverside Tourist Cabin Development
At
Lot 4 (DP 1022342) New Entrance Road
South West Rocks NSW 2431

Prepared For
Shannon Pacific P/L
PO Box 52
South West Rocks NSW 2431

Reference Number: 1616-001-002-CLA
23rd August 2010



Engineering, Geotechnical & Environmental Consultant & Technical Service
Laboratory and Field Testing Services for Soil, Rock and Aggregate
Concrete Instrumentation for Civil Engineering Projects

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Executive Summary

Shannon Pacific P/L has engaged Australian Soil and Concrete Testing P/L to undertake an environmental investigation for possible contamination of the proposed Riverside Tourist Cabin development at Lot 4 (DP 1022342) New Entrance Road, South West Rocks, NSW. The investigation was carried out in October 2009.

The proposed development site is located in a low-lying coastal area and has good access off New Entrance Road to the west. The site is currently vacant land but is bordered by the Riverside Tavern to the north, Marlin Drive to the south and by wetland vegetation to the east. Furthermore, the Macleay River is located approximately 50m to the west of the proposed development site just beyond New Entrance Road. The proposed development will be located in the southwest corner of the lot and will include nine, one and two bedroom tourist cabins as well as grassed open spaces, landscaped grounds and a paved access road off Marlin Drive to the south of the site.

The site and site boundaries were inspected for physical signs of contamination at the time of sampling, including soil staining, soil bare patches, plant stress, odours, poor quality surface waters and the presence of drums, wastes and fill material. However, no signs of contamination were evident.

A site history was obtained by a review of other relevant previous studies within the study area (including historical aerial photographs), a land title search, a search of the NSW Department of Environment and Climate Change (DECC) records for contaminated sites, a search of the Department of Primary Industries (DPI) records of cattle dip sites and interviews with the current owner and long term local residents. Historical investigations have shown that the site has predominately been used for agriculture since the early 1900s and the Tavern complex was developed in 2002. However, historical investigations have not identified other land uses at the site.

Soil samples were collected from twelve locations across the 0.5 ha proposed development area on the 7th October 2009, using a systematic sampling pattern in accordance with NSW EPA (1995). Samples were collected with a hand held Jarret auger and were taken from immediately below the root zone (approximately 0.2m below the ground surface). The twelve individual samples were subsequently combined to create 3 composite samples with 4 soil sub-samples per composite.

On the basis of field observations and the known site history the investigation analysed soil samples for metals, organochlorine pesticides (OC), organophosphorous pesticides (OP), polynuclear aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB) and total petroleum hydrocarbons (TPH).

The results of the soil sample analysis for metals, OC, OP, PAH and PCB were compared to the Health Based Investigation Levels (HBIL) in the NSW EPA (2002) Contaminated Sites – Guidelines for the NSW Site Auditor Scheme, using column 1 'residential'. However, the results for TPH have been compared to the threshold levels listed in NSW EPA (1994) Contaminated Sites – Guidelines for Assessing Service Station Sites. The results of the composite soil sample analysis for all contaminants of concern were below the relevant threshold levels. On this basis, together with the site observations and known land use history it is concluded that further soil contamination assessment is not required at the site.

1 Introduction

Australian Soil and Concrete Testing P/L (ASCT) have been engaged by Shannon Pacific P/L to undertake an environmental investigation for possible contamination of the proposed Riverside Tourist Cabin development at Lot 4 (DP 1022342) New Entrance Road, South West Rocks, NSW. The purpose of the investigation is to determine if the soil at the site is contaminated from previous or current land use.

2 Scope of Work

A soil sampling regime was carried out for the investigation and the results of the soil sample analysis have been compared with the Health Based Investigation levels (HBIL) for residential use in accordance with NSW EPA (2002). The relevant guidelines used for the investigation are as follows:

- NSW Environment Protection Authority (EPA) (2002), Contaminated Sites – Draft Guidelines for the NSW Site Auditor Scheme.
- NSW EPA (2000), Guidelines for Consultants Reporting on Contaminated Sites.
- Department of Urban Affairs and Planning (DUAP) (1998), Managing Land Contamination – Planning Guidelines.
- NSW EPA (1995), Contaminated Sites – Sampling Design Guidelines.
- NSW EPA (1994), Contaminated Sites – Guidelines for Assessing Service Station Sites.
- AS 4482.1 (2005). Australian Standard – Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.

3 The Proposed Development

The proposed development will be located in the southwest corner of the lot and covers an area of 0.5 hectares. It will include nine one and two bedroom tourist cabins as well as grassed open spaces, landscaped grounds and a paved access road off Marlin Drive to the south of the site. A plan of the proposed development is displayed in figure 3.

4 Site Condition and Surrounding Environment

The site is located in a low-lying coastal area and has good access off New Entrance Road to the west as shown on the locality map in figure 1. The proposed development site is currently vacant land but is bordered by the Riverside Tavern to the north, Marlin Drive to the south and by wetland vegetation to the east. Furthermore, the Macleay River is located approximately 50m to the west of the proposed development site just beyond New Entrance Road. The site is predominately cleared with some scattered, small to medium Casuarina trees and the ground surface contains good grass cover and slopes about 1% east towards the adjacent wetlands. Underground services including power, phone, water and sewer run along the road reserve of New Entrance Road to the west of the site. Photos of the site taken at the time of the investigation are displayed in figures.

5 Site History

A site history was obtained by:

- a review of other relevant previous studies within the study area;
- a land title search;
- a search of NSW Department of Environment and Climate Change (DECC) records for contaminated sites;
- a search of Department of Primary Industries (DPI) records of cattle dip sites,
- an interview of long term local residents and the current owner.

5.1 Review of Previous Studies

Martens and Associates Pty Ltd (MA) prepared a contamination assessment for the study area in November 2006. The objectives of the Martens and Associates report objectives were to:

- investigate soil contamination potentially resulting from past activities on the site;
- assess soil contamination levels under EPA guidelines; and
- determine whether the site is suitable for the proposed use as a tourist park.

The assessment included a review of historical aerial photographs:

“Historical aerial photographs covering the site were reviewed in order to investigate the history of land use on the site. Photographs dating 1954, 1967, 1980, 1986, 1991, 1997 and 2000 were available for review. The historical aerial photographs indicated that the condition of the site appears to have been largely unchanged from 1954 through to the present day. It is likely that the site was used for grazing sometime during this period”.

The assessment results indicated that contaminant levels across the general site were at low levels and within the relevant guidelines – NSW EPA, 1998 “Guidelines for the NSW Site Auditor Scheme” Health-based Investigation Levels; Column 1 – Residential sites with gardens and accessible soil; and Column 5 – Provisional Phytotoxicity-based Investigation Levels.

The report concluded that based on the observed site conditions, the land use history of the site and the results of laboratory analysis of soil samples, it is considered that the site is suitable for the proposed tourist park development. No further analyses or investigation was considered necessary and no site remediation required, based on site conditions at the time of investigation.

5.2 Land Titles Search

A list of past registered proprietors and lessors of the Lot 4 DP 1022342 was obtained from the Land Titles Office. This information is summarised in Table 1, and copies of the documents are attached as an appendix.

Table 1: Historical title search

Date	Dealing type	Proprietors/Lessors	
15/8/2001	Transfer	Transferor	Randale Pty Ltd
		Transferee	Shannon Pacific Pty Ltd and Eastland Constructions Pty Ltd
10/6/2004	Lease	Lessor	Shannon Pacific Pty Ltd and Eastland Constructions Pty Ltd
		Lessee	A&A Moore Property Pty Ltd
19/12/2007	Transfer of lease	Transferor	A&A Moore Property Pty Ltd
		Transferee	TTD Hotels Pty Ltd and Jason Alan Juillerat

The property was purchased by Shannon Pacific Pty Ltd in August 2001. It was leased to A&A Moore Property Pty Ltd in June 2004. The lease was transferred to TTD Hotels Pty Ltd and Jason Alan Juillerat in December 2007 and a copy of lease transfer is attached in Appendix C.

5.3 NSW DECC Records

A search of the NSW DECC records revealed that no notices under the Environmentally Hazardous Chemicals Act (1985) and the Contaminated Land Management Act (1997) have been issued within the study area or on land adjacent to the study area. A copy of the database search is attached in Appendix C.

5.4 NSW DPI Records

A search of the NSW Department of Primary Industries (DPI) did not reveal any cattle dip sites within the study area. A copy of the database search is attached in Appendix C.

5.5 Personal Interviews

Discussion with Peter Hadlow, a long term resident of South West Rocks, indicated that the tavern complex was developed in 2002. Prior to that and since the early 1900s, the land was cleared, drained and used for agricultural.

6 Soil and Geology

The site contains natural alluvial and marine soil and generally consists of clayey sandy silt overlying silty sand and sand. Groundwater inflows were also encountered in the boreholes from about 1.3 m below the ground surface. A summary of the sub-surface conditions found at the investigation site is displayed in table 2 below and the full geotechnical borehole logs have been included in the geotechnical report compiled by ASCT (Ref: 064-001, dated 30/10/09).

Table 2: Summary of sub-surface conditions at the proposed development site.

Soil Type	Description	Depth (m)
A	Sandy Clayey Silt: Brown	0.0 – 0.5
B	Silty Sand: Brown	0.5 – 1.0
C	Sand: Dark Grey	1.0 – 2.0
D	Groundwater	Below 1.3

Source: South West Rocks Topographic Map 9536-3-S Date: January 2009



NOTE: Grid lines shown are based on the Geocentric Datum of Australia
0 500



GeoLINK
Geographic Information Systems

Preliminary Environmental Assessment
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Site Locality

Illustration 2.2

Figure 1: locality map of the South West Rocks area showing the location of the proposed Riverside Tourist Cabin development site.



Photo 1: investigation site facing north towards the Riverside Tavern.

Figure 2: photo of the investigation site facing north towards the Riverside Tavern.



Photo 2: investigation site facing east toward the adjacent wetlands.

Figure 3: photo of the investigation site facing east toward the adjacent wetlands



Photo 3: investigation site facing south towards Marlin Drive.

Figure 4: photo of the investigation site facing south towards Marlin Drive.

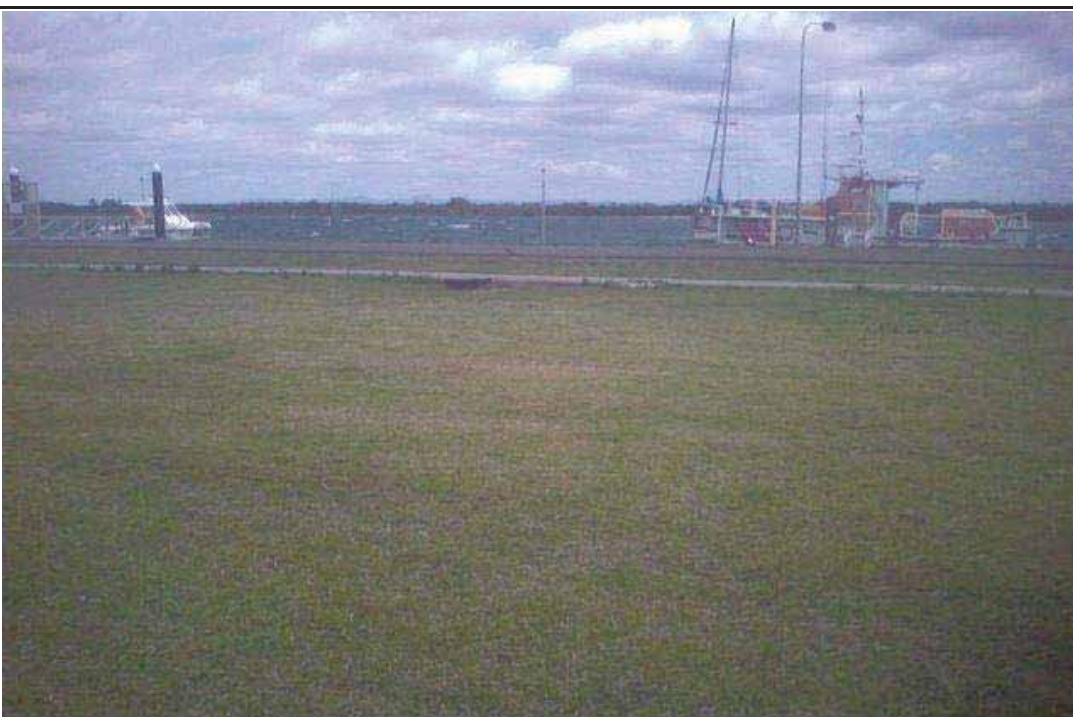


Photo 4: investigation site facing west toward the Macleay River.

Figure 5: photo of the investigation site facing west toward the Macleay River.

7 Signs of Contamination

The site was inspected for the following physical signs of contamination at the time of sampling:

- Discolouration or staining of soil, soil bare patches – both on-site and off-site adjacent to the site boundary.
- Visible signs of plant stress.
- Presence of drums, wastes and fill material.
- Odours.
- Poor quality surface water.

None of the physical signs of contamination listed above were evident at the time of the investigation.

8 Soil Sampling Regime

The soil sampling regime was determined based on:

- site history;
- the previous preliminary site contamination assessment undertaken by Martens and Associates in 2004; and
- in accordance with the EPA document Contaminated Sites: Sampling Design Guidelines.

The soil sampling methodology conducted for the investigation is outlined below:

- Soil analysis tests were undertaken to determine the presence of metals, organochlorine pesticides (OC), organophosphorous pesticides (OP), polynuclear aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB) and total petroleum hydrocarbons (TPH).
- All soil sampling was undertaken on the 7th October, 2009, by staff of ASCT, namely by Greg McIlwain (Senior Technician).
- Twelve locations were sampled across the 0.5 ha proposed development area using a systematic sampling pattern in accordance with the NSW EPA (1995) and the sampling locations are displayed in figure 6. At each location soil samples were collected from immediately below the root zone (approximately 0.2m below the ground surface). Three composite samples were subsequently created with each composite containing four sub-samples. The make-up of the composite samples and the sample depths is displayed in table 3.
- Soil was sampled using a hand held Jarret auger and stainless steel mixing bowls and scoops. All equipment was decontaminated between samples using Decon 90® and sampling staff used a clean pair of vinyl gloves to collect each sample.
- Samples were placed in glass jars and transferred immediately to an esky with ice before being frozen in storage at ASCT's Toormina laboratory. Seven days later the samples were transported under ASCT's chain of custody conditions to Australian Laboratory Services (ALS, Brisbane) for analysis. The chain of custody documentation has been included in appendix B of this report.

Table 3: The make-up of composite samples.

Composite Sample Number	Individual Samples	Sample Depth (m)
1	1 – 4	0.2
2	5 – 8	0.2
3	9 – 12	0.2

Soil samples were not obtained from the constructed wetland area as it is proposed to utilise existing topography, with minimal landform or soil disturbance. Contamination in the area is additionally not considered a significant risk due to its proposed use. Activity in the area would be restricted to pedestrian access on the formal pathway and boardwalk, and therefore exposure is considered negligible.

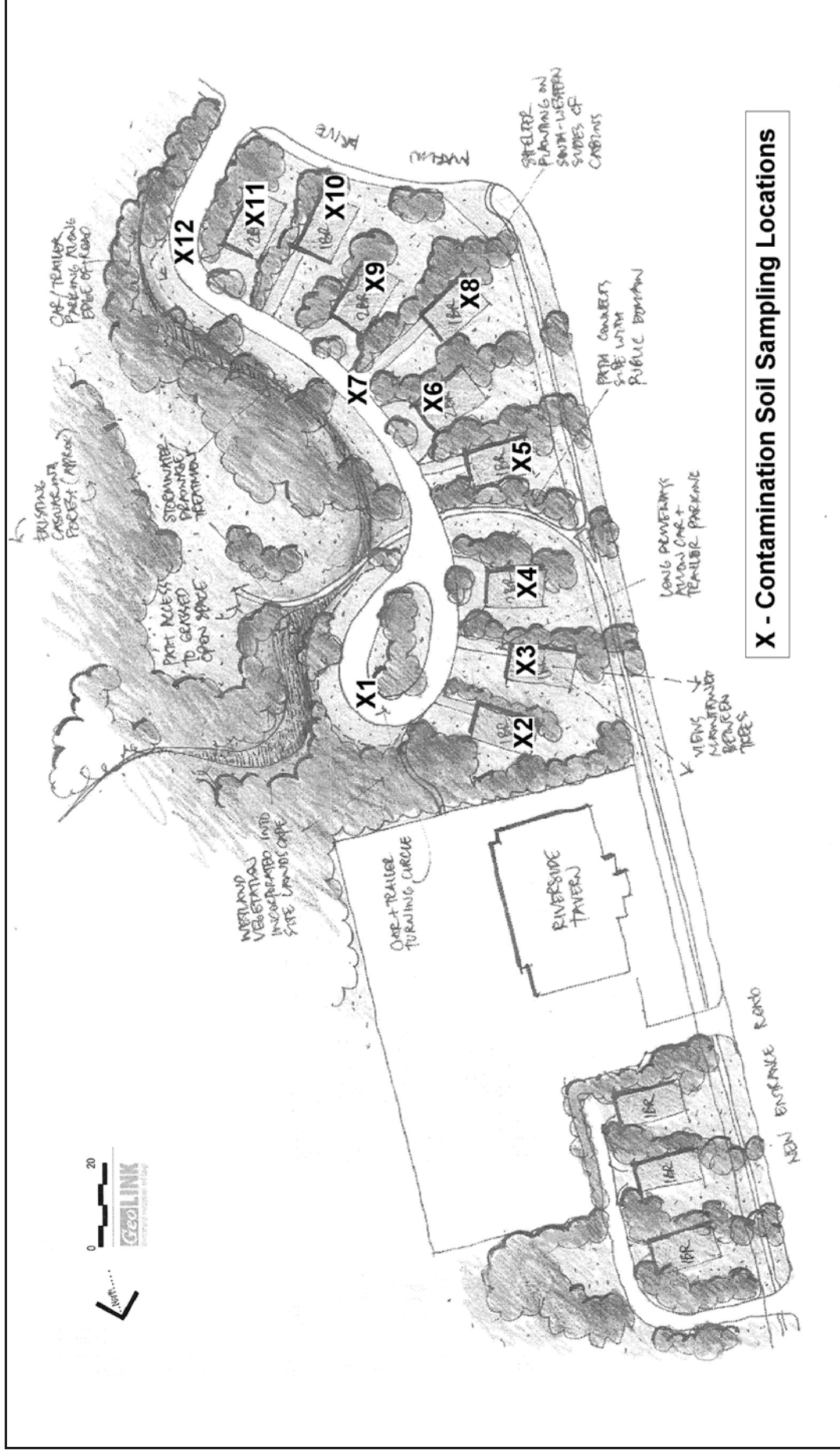


Figure 6: plan of the proposed Riverside Tourist Cabin development at South West Rocks, showing the soil sampling locations for the contaminated land assessment.

9 Performance Criteria

The results of the soil sample analysis for metals, OC, OP, PAH and PCB were compared to the Health Based Investigation Levels (HBIL) in the NSW EPA (2002) Contaminated Sites – Guidelines for the NSW Site Auditor Scheme, using column 1 ‘residential’. However, the results for TPH have been compared to the threshold levels listed in NSW EPA (1994) Contaminated Sites – Guidelines for Assessing Service Station Sites.

The investigation has used composite samples and the acceptable threshold is therefore adjusted. The adjusted acceptable threshold is the acceptable threshold divided by the number of soil sub-samples per composite; in this case four soil sub-samples were combined for the composite samples. The adjustable acceptable threshold is a conservative approach used to determine the presence of hotspots. If the results of the composite soil analysis are above the adjusted acceptable threshold, then all sub-samples of the failed composite will be analysed individually. The NSW EPA (1995), state that if the contaminant concentration is below the threshold level, the site can be considered uncontaminated.

10 Results

The results of the composite soil sample analysis for metals, OC, OP, PAH, PCB and TPH are all below the relevant adjusted acceptable thresholds and a summary is displayed in table 4. The complete soil analysis results have been included in appendix A of this report and they include the analytical methods used for the laboratory testing. Furthermore, quality assurance and quality control (QA/QC) was carried out by ALS including laboratory duplicates, laboratory control samples, method blanks and matrix spikes and the ALS QA/QC reports have also been included in Appendix A. The QA/QC data have established that the laboratory methods are reliable and the data reasonably represents the concentrations at the sampling locations at the time of sampling.

Table 4: Summary of soil analysis results for composite samples 1 – 3.

Contaminant	Composite Sample 1	Composite Sample 2	Composite Sample 3	Adjusted Acceptable Threshold (mg/kg)	Individual HBIL Threshold (mg/kg)	Background Range (mg/kg) ¹
Metals						
Arsenic (mg/kg)	7	6	7	<25	<100	0.2-30
Lead (mg/kg)	8	7	8	<75	<300	<2-200
Cadmium (mg/kg)	<1	<1	<1	<5	<20	0.04-2.0
Chromium (mg/kg)	9	11	12	<25	<100	0.04-2.0
Copper (mg/kg)	7	7	7	<250	<1000	1-190
Nickel (mg/kg)	6	6	6	<150	<600	2-400
Zinc (mg/kg)	45	29	26	<1750	<7000	2-180
Mercury (mg/kg)	<0.1	<0.1	<0.1	<3.75	<15	0.001-0.1
OC (mg/kg)	<0.2	<0.2	<0.2	<2.5	<10	<0.2
OP (mg/kg)	<0.2	<0.2	<0.2	<2.5	<10	<1
PAH (mg/kg)	<0.5	<0.5	<0.5	<5	<20	na
PCB (mg/kg)	<0.10	<0.10	<0.10	<2.5	<10	na
TPH C6-C9 (mg/kg)	<10	<10	<10	<16.25	<65 ²	na
TPH C10-C36 (mg/kg)	<50	<50	<50	<250	<1000 ²	na

¹ Environmental Soil Quality Guidelines, Page 40, ANZECC, 1992.

² Contaminated Sites – Guidelines for Assessing Service Station Sites, NSW EPA, 1994.

11 Conclusion

Shannon Pacific P/L engaged Australian Soil and Concrete Testing P/L (ASCT) to undertake an environmental investigation for possible contamination of the proposed Riverside Tourist Cabin development at Lot 4 (DP 1022342) New Entrance Road, South West Rocks, NSW. Twelve individual soil samples were collected from the site on the 7th October 2009 using a systematic sampling pattern in accordance with NSW EPA (1995). On the basis of field observations and the known site history the samples were analysed for metals, OC, OP, PAH, PCB and TPH. The results of the composite soil analysis for metals, OC, OP, PAH and PCB were compared to the HBIL (NSW EPA, 2002) for 'residential' development. The results of the composite soil analysis for TPH were compared to the threshold levels listed in NSW EPA (1994) Contaminated Sites – Guidelines for Assessing Service Station Sites. The results of the composite soil sample analysis for all contaminants of concern were below the relevant threshold levels. On this basis, together with the site observations and known land use history it is concluded that further soil contamination assessment is not required at the site.

12 Limitations

This report relies on information supplied by the client and the results of investigations conducted in accordance with accepted practices and standards. The report is intended to represent a reasonable interpretation of the appropriate legislation and the condition of the site at the time of the investigation. However, due to these elements being subject to change over time the report under no circumstances can be considered to represent the definitive state of the site at all times.

Finally, should any problem or concern arise that needs clarification or assistance the client should not hesitate to call this office.

Yours Faithfully,
Australian Soil and Concrete Testing P/L



Ben Hart
Environmental Officer
(B. App. Sc.)



Brian Dick
Managing Director

13 References

Australian and New Zealand Environment and Conservation Council (ANZECC) and National Health and Medical Research Council (1992). *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated sites.*

AS 4482.1 (2005). Australian Standard – *Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*

Department of Urban Affairs and Planning (DUAP) (1998), *Managing Land Contamination – Planning Guidelines.*

New South Wales Environment Protection Authority (NSW EPA), 2002. *Contaminated Sites – Draft Guidelines for the NSW Site Auditor Scheme. 2nd Edition.*

NSW EPA, (2000). *Guidelines for Consultants Reporting on Contaminated Sites.*

NSW EPA, (1995). *Contaminated Sites – Sampling Design Guidelines.*

NSW EPA, (1994). *Contaminated Sites – Guidelines for Assessing Service Station Sites.*

APPENDIX A – Soil Analysis Results

ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES


Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB0916264	Page	: 1 of 6
Client	: AUSTRALIAN SOIL & CONCRETE P/L	Laboratory	: Environmental Division Brisbane
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E-mail	: asct@bigpond.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 02 66868567	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 66868396	Facsimile	: +61-7-3243 7218
Project	: Riverside Tourist Cabins South West Rocks	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---	Date Samples Received	: 15-OCT-2009
C-O-C number	: ---	Issue Date	: 23-OCT-2009
Sampler	: G McIlwain/B Dick	No. of samples received	: 3
Site	: ---	No. of samples analysed	: 3
Quote number	: ---		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with
ISO/IEC 17025.

Signatories

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

Signature	Position	Accreditation Category
Kim McCabe	Senior Inorganic Chemist	Inorganics
Matt Frost	Organic Instrument Chemist	Inorganics
Matt Frost	Organic Instrument Chemist	Organics

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A Compulab Brothers Limited Company



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 Work Order : EB0916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0.00 the information was not provided by client.

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

- **Pesticides: High failing LCS and MS results deemed acceptable as all associated analytes are less than LOR.**

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 Work Order : EB0916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Analytical Results

Sub-Matrix: **soil**

Sub-Matrix: SOIL	Client sample ID				Client sampling date / time			
Compound	CAS Number	LOR	Unit	Composite 1	Composite 2	Composite 3		
				07-OCT-2009 14:30	07-OCT-2009 15:15	07-OCT-2009 15:50		
				EB0916264-001	EB0916264-002	EB0916264-003		
EA065: Moisture Content				12.4	13.3	12.9		
^ Moisture Content (dried @ 103°C)			%					
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	6	7		
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1		
Chromium	7440-47-3	2	mg/kg	9	11	12		
Copper	7440-50-8	5	mg/kg	7	7	7		
Lead	7439-92-1	5	mg/kg	8	7	8		
Nickel	7440-02-0	2	mg/kg	8	6	8		
Zinc	7440-66-6	5	mg/kg	45	29	26		
EG035T: Total Recoverable Mercury by FILMS								
Mercury	7439-07-6	0.1	mg/kg	<0.1	<0.1	<0.1		
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls		0.10	mg/kg	<0.10	<0.10	<0.10		
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		
alpha-Endosulfan	959-88-8	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		
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		
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05		

A Campbell Brothers Limited Company

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 Work Order : EB0916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Analytical Results

Sub-Matrix: SOIL

Sub-Matrix: SOIL	Client sample ID	Composite 1	Composite 2	Composite 3		
Compound	Client sampling date / time	07-OCT-2009 14:30	07-OCT-2009 15:15	07-OCT-2009 15:50		
	CAS Number	EB0916264-001	EB0916264-002	EB0916264-003		
EP068B: Organophosphorus Pesticides (OP) - Continued						
Demeton-S-methyl	919-86-8	0.05				
Monocrotophos	6923-22-4	0.2	<0.05	<0.05	<0.05	
Dimethoate	60-51-5	0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	<0.05	<0.05	<0.05	
Chlorpyrifos-methyl	5698-13-0	0.05	<0.05	<0.05	<0.05	
Parathion-methyl	298-00-0	0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	<0.2	<0.2	<0.2	
Pirimphos-ethyl	23505-41-1	0.05	<0.05	<0.05	<0.05	
Chlorfenviophos	470-90-5	0.05	<0.05	<0.05	<0.05	
Bromophos-ethyl	4824-78-6	0.05	<0.05	<0.05	<0.05	
Fenamiphos	22224-92-6	0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	<0.05	<0.05	<0.05	
Ilithion	563-12-2	0.05	<0.05	<0.05	<0.05	
Carbophenothion	785-19-6	0.05	<0.05	<0.05	<0.05	
Azinphos Methyl	*****	0.05	<0.05	<0.05	<0.05	
EP07E(SM)B: Polynuclear Aromatic Hydrocarbons						
Naphthalene	91-20-3	0.5	<0.5	<0.5	<0.5	
Acenaphthylene	208-96-8	0.5	<0.5	<0.5	<0.5	
Acenaphthene	83-32-9	0.5	<0.5	<0.5	<0.5	
Fluorene	86-73-7	0.5	<0.5	<0.5	<0.5	
Phenanthrene	85-01-5	0.5	<0.5	<0.5	<0.5	
Anthracene	120-12-7	0.5	<0.5	<0.5	<0.5	
Fluoranthene	206-44-0	0.5	<0.5	<0.5	<0.5	
Pyrene	129-00-0	0.5	<0.5	<0.5	<0.5	
Benz[a]anthracene	56-55-3	0.5	<0.5	<0.5	<0.5	
Chrysene	218-01-9	0.5	<0.5	<0.5	<0.5	
Benz[b]fluoranthene	205-99-2	0.5	<0.5	<0.5	<0.5	
Benz[k]fluoranthene	207-08-9	0.5	<0.5	<0.5	<0.5	
Benz[a]pyrene	50-32-8	0.5	<0.5	<0.5	<0.5	
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	<0.5	<0.5	<0.5	
Dibenzo[a,h]anthracene	53-70-3	0.5	<0.5	<0.5	<0.5	
Benz[ghi]perylene	191-24-2	0.5	<0.5	<0.5	<0.5	
EP080971: Total Petroleum Hydrocarbons						
C8 - C9 Fraction	*****	10	<10	<10	<10	
C10 - C14 Fraction	*****	50	<50	<50	<50	

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 Work Order : E60916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Analytical Results

Sub-Matrix: SOIL

Sub-Matrix: SOIL	Client sample ID				Composite 1 07-OCT-2009 14:30 EB0916264-001	Composite 2 07-OCT-2009 15:15 EB0916264-002	Composite 3 07-OCT-2009 15:50 EB0916264-003
	Compound	CAS Number	LOR	Unit			
EP080971: Total Petroleum Hydrocarbons - Contained							
C15 - C28 Fraction	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	50	mg/kg	<50	<50	<50	<50	----
EP0665: PCB Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	45.0	45.0	47.5	----
EP0665: Organochlorine Pesticide Surrogate							
Dibromo-DDI	21655-73-2	0.1	%	98.0	94.6	96.3	----
EP0667: Organophosphorus Pesticide Surrogate							
DEF	78-48-6	0.1	%	82.4	73.9	76.4	----
EP076(SIM): Phenolic Compound Surrogates							
Phenol-d6	13127-88-3	0.1	%	90.0	88.2	86.3	----
2-Chlorophenol-d4	93951-73-6	0.1	%	88.9	76.7	75.9	----
2,4,6-Tribromophenol	118-79-6	0.1	%	103	75.6	74.9	----
EP076(SIM): PAH Surrogates							
2-Fluorobiphenyl	321-60-3	0.1	%	83.6	81.9	89.4	----
Anthracene-d10	1719-06-8	0.1	%	103	75.4	75.8	----
4-Terphenyl-d14	1718-51-0	0.1	%	88.4	88.3	85.0	----
EP0805: TPH(VBTEX) Surrogates							
1,2-Dichloroethane-d4	17060-07-0	0.1	%	97.0	92.0	96.0	----
Toluene-D8	2037-26-5	0.1	%	91.3	91.8	95.1	----
4-Bromofluorobenzene	460-00-4	0.1	%	96.2	94.5	96.7	----

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 Work Order : E50916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	110
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	19	115
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	121
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

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ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB0916264	Page	: 1 of 12
Client	: AUSTRALIAN SOIL & CONCRETE P/L	Laboratory	: Environmental Division Brisbane
Contact	: MR BEN HART	Contact	: Tim Kilminster
Address	: P O BOX 5120 BALLINA NSW, AUSTRALIA 2478	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: asct@bigpond.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 02 66888567	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 66888396	Facsimile	: +61-7-3243 7218
Project	: Riverside Tourist Cabins South West Rocks	QC Level	: NENM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 15-OCT-2009
C-O-C number	: ----	Issue Date	: 23-OCT-2009
Sampler	: G McIlwain/B Dick	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3
Quote number	: ----		

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

This Quality Control Report contains the following information:

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



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Position	Accreditation Category
Kim McCabe Matt Frost Matt Frost	Inorganics Inorganics Organics
Senior Inorganic Chemist Organic Instrument Chemist Organic Instrument Chemist	

Environmental Division Brisbane

Part of the ALS Laboratory Group

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Work Order

: EB0916264

Client

: AUSTRALIAN SOIL & CONCRETE P/L

Project

: Riverside Tourist Cabins South West Rocks

**General Comments**

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

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

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

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

Key :

Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

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

LOR = Limit of reporting

RPD = Relative Percentage Difference

= Indicates failed QC

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 Work Order : E80916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected interlaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method CMI-EN38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR- No Limit, Result between 10 and 20 times LOR- 0% - 50%, Result > 20 times LOR- 0% - 20%.

Sub-Matrix: SOIL		Client sample ID	Min/Max/Composite	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Original Result						Duplicate Result	RPD (%)	Recovery Limits (%)	
EA055: Moisture Content (QC Lot: 1134137)										
EB0916263-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	----	1.0	%	16.7	16.0	4.0	0% - 50%
EB0916263-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	----	1.0	%	17.7	17.0	4.0	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1137209)										
Composite 1										
EB0916304-001	Composite 1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	9	9	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	15.8	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	7	6	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	8	7	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	45	28	45.5	No Limit	
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	68	60	12.5	0% - 20%	
		EG005T: Nickel	7440-02-0	2	mg/kg	66	62	6.3	0% - 20%	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	65	62	5.0	0% - 50%	
EB0916304-005	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	10	9	12.4	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	480	448	6.9	0% - 20%	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1137211)										
EB0916264-001	Composite 1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit	
EB0916464-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.9	62.8	No Limit	
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1134182)										
EB0916005-005	Anonymous	EP066: Total Polychlorinated biphenyls	----	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1134181)										
Anonymous										
EB0916005-005	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: alpha-Endosulfan	959-88-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	

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 Work Order : E80916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Allylpest: Conserved	CLAS Number	LOI	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP0685A - Organochlorine Pesticides (OC) (QC Lot: 1134181) - continued	E80916205-005	Anonymous	EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endosulfan sulfide	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
			EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
			EP068: alpha-BHC	319-94-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP0685B - Organophosphorus Pesticides (OP) (QC Lot: 1134181)	E80916201-027	Anonymous	EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: alpha-Endosulfan	969-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endosulfan sulfide	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP0685C - Organophosphorus Pesticides (OP) (QC Lot: 1134181)	E80916205-005	Anonymous	EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: alpha-Endosulfan	969-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP0685D - Organophosphorus Pesticides (OP) (QC Lot: 1134181)	E80916205-005	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endosulfan sulfide	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
			EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
			EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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 Work Order : EB0916204
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Substrate: SOIL		Client sample ID		Method: Concocted		CAS Number		Unit		Laboratory Duplicate (DUP) Report				Recovery Limits (%)	
Laboratory sample ID	Client sample ID	EP068B: Organophosphorus Pesticides (OP) (QC Lot: 113411) - continued		EP068B: Organophosphorus Pesticides (OP) (QC Lot: 113411) - continued		CAS Number		Unit		Original Result		Duplicate Result		RPD (%)	
EB0916005-005		Anonymous		Anonymous		23505-41-1		mg/kg		<0.05		<0.05		0.0	
		EP068: Pirimiphos-ethyl				470-90-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Chlorfenvinphos				4824-78-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Bromophos-ethyl				22224-92-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Fenamiphos				34643-46-4		mg/kg		<0.05		<0.05		0.0	
		EP068: Prothiofos				563-12-2		mg/kg		<0.05		<0.05		0.0	
		EP068: Ethion				796-19-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Carbophenothion				---		mg/kg		<0.05		<0.05		0.0	
		EP068: Aclonophos Methyl				6623-22-4		mg/kg		<0.2		<0.2		0.0	
		EP068: Monocrotophos				296-00-0		mg/kg		<0.2		<0.2		0.0	
		EP068: Parathion-methyl				55-38-2		mg/kg		<0.2		<0.2		0.0	
		EP068: Parathion				62-73-7		mg/kg		<0.05		<0.05		0.0	
		EP068: Dichlorvos				919-86-8		mg/kg		<0.05		<0.05		0.0	
		EP068: Demeton-S-methyl				60-51-5		mg/kg		<0.05		<0.05		0.0	
		EP068: Dimethoate				333-41-5		mg/kg		<0.05		<0.05		0.0	
		EP068: Diazinon				5598-13-0		mg/kg		<0.05		<0.05		0.0	
		EP068: Chlorpyrifos-methyl				121-75-5		mg/kg		<0.05		<0.05		0.0	
		EP068: Malathion				55-38-9		mg/kg		<0.05		<0.05		0.0	
		EP068: Fenthion				2921-88-2		mg/kg		<0.05		<0.05		0.0	
		EP068: Chlorpyrifos				23505-41-1		mg/kg		<0.05		<0.05		0.0	
		EP068: Pirimiphos-ethyl				470-90-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Chlorfenvinphos				4824-78-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Bromophos-ethyl				22224-92-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Fenamiphos				34643-46-4		mg/kg		<0.05		<0.05		0.0	
		EP068: Prothiofos				563-12-2		mg/kg		<0.05		<0.05		0.0	
		EP068: Ethion				796-19-6		mg/kg		<0.05		<0.05		0.0	
		EP068: Carbophenothion				---		mg/kg		<0.05		<0.05		0.0	
		EP068: Aclonophos Methyl				6623-22-4		mg/kg		<0.2		<0.2		0.0	
		EP068: Monocrotophos				296-00-0		mg/kg		<0.2		<0.2		0.0	
		EP068: Parathion-methyl				55-38-2		mg/kg		<0.2		<0.2		0.0	
		EP068: Parathion				62-73-7		mg/kg		<0.2		<0.2		0.0	
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QC Lot: 11336 13)		Anonymous		Anonymous		91-20-3		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Naphthalene				208-96-8		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Acenaphthylene				83-32-9		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Acenaphthene				85-73-7		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Fluorene				85-01-8		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Phenanthrene				120-12-7		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Anthracene				205-44-0		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Fluoranthene				129-00-0		mg/kg		<0.5		<0.5		0.0	
		EP075(SIM): Pyrene				129-00-0		mg/kg		<0.5		<0.5		0.0	

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 Work Order : EB0916264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Substrate: SOIL	Laboratory sample ID	Client sample ID	Method/Concentration	CAS Number	LOI	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
							Original Result	Duplicate Result	RPD (%)	
EB0916264-005	Anonymous	Anonymous	Polynuclear Aromatic Hydrocarbons (QC Lot: 1133613) - continued	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Chrysene						
				205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(b)fluoranthene						
				207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(k)fluoranthene						
				50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(a)pyrene						
				193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Indeno(1,2,3-cd)pyrene						
				53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Dibenz(a,h)anthracene						
				191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0916233-005	Anonymous	Anonymous	Polynuclear Aromatic Hydrocarbons (QC Lot: 1133613) - continued	91-20-3	0.5	mg/kg	50.2	44.4	12.3	0% - 20%
				EP075(SIM): Naphthalene						
				205-96-8	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Acenaphthylene						
				83-32-9	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Acenaphthene						
				86-73-7	0.5	mg/kg	2.2	2.0	11.0	No Limit
				EP075(SIM): Fluorene						
				85-01-8	0.5	mg/kg	2.6	9.9	0.0	No Limit
				EP075(SIM): Phenanthrene						
				120-12-7	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Anthracene						
				206-44-0	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Fluoranthene						
EB0916201-001	Anonymous	Anonymous	Polynuclear Aromatic Hydrocarbons (QC Lot: 1135210)	129-00-0	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Pyrene						
				56-55-3	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Benzo(a)anthracene						
				218-01-9	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Chrysene						
				205-99-2	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Benzo(b)fluoranthene						
				207-08-9	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Benzo(k)fluoranthene						
				50-32-8	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Benzo(a)pyrene						
				193-39-5	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Indeno(1,2,3-cd)pyrene						
				53-70-3	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
EB0916201-001	Anonymous	Anonymous	Polynuclear Aromatic Hydrocarbons (QC Lot: 1135210)	191-24-2	0.5	mg/kg	<2.0	<2.0	0.0	No Limit
				EP075(SIM): Dibenz(a,h)anthracene						
				91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Naphthalene						
				206-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Acenaphthylene						
				83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Acenaphthene						
				86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Fluorene						
				85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Phenanthrene						
				120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Anthracene						
				206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB0916201-001	Anonymous	Anonymous	Polynuclear Aromatic Hydrocarbons (QC Lot: 1135210)	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Pyrene						
				56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(a)anthracene						
				218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Chrysene						
				205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(b)fluoranthene						
				207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(k)fluoranthene						
				50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(a)pyrene						
				193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Indeno(1,2,3-cd)pyrene						

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 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limit (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1135210) - continued	EB0916201-001	Anonymous	EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Benzo(g,h)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
	EB0916201-041	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080(071): Total Petroleum Hydrocarbons (QC Lot: 1132550)	EB0916211-001	Anonymous	EP080: C8 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
			EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
	EB0916235-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
			EP071: C15 - C28 Fraction	----	100	mg/kg	30600	28900	17.0	0% - 20%
			EP071: C29 - C36 Fraction	----	100	mg/kg	15200	12500	19.3	0% - 20%
			EP071: C10 - C14 Fraction	----	50	mg/kg	18800	16800	16.3	0% - 20%
	EB0916233-005	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
EP080(071): Total Petroleum Hydrocarbons (QC Lot: 1135512)	EB0916201-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
	EB0916201-041	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
			EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
			EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
			EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
			EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit

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 Project : Riverside Tourist Cabins South West Rocks



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

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL	Method Component	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
						Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
							LCS	Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 1137209)										
EG005T: Arsenic	7440-38-2	5	mg/kg	<5		13.8 mg/kg	112	78	124	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1		2.82 mg/kg	111	77	117	
EG005T: Chromium	7440-47-3	2	mg/kg	<2		61.6 mg/kg	106	83	119	
EG005T: Copper	7440-50-8	5	mg/kg	<5		54.7 mg/kg	120	82	122	
EG005T: Lead	7439-92-1	5	mg/kg	<5		55.5 mg/kg	110	83	117	
EG005T: Nickel	7440-02-0	2	mg/kg	<2		55.1 mg/kg	112	83	121	
EG005T: Zinc	7440-66-6	5	mg/kg	<5		105 mg/kg	111	82	120	
EG005T: Total Recoverable Mercury by FI/MS (QCLot: 1137211)										
EG005T: Mercury	7439-97-6	0.10	mg/kg	<0.1		1.34 mg/kg	104	73	119	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1134182)										
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.10		0.2 mg/kg	# 118	53.8	109	
EP068A: Organochlorine Pesticides (OC) (QCLot: 1134181)										
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05		0.1 mg/kg	# 120	58.4	116	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05		0.1 mg/kg	105	57.7	107	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05		0.1 mg/kg	106	59.3	116	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05		0.1 mg/kg	# 118	59.1	118	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05		0.1 mg/kg	# 124	51	117	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05		0.1 mg/kg	# 150	57.3	119	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05		0.1 mg/kg	# 138	58.2	113	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05		0.1 mg/kg	# 126	60.4	113	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05		0.1 mg/kg	# 126	60.3	114	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05		0.1 mg/kg	# 128	56	120	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05		0.1 mg/kg	# 125	60.8	113	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05		0.1 mg/kg	# 123	58.8	115	
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05		0.1 mg/kg	# 120	61.2	116	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05		0.1 mg/kg	128	47	133	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05		0.1 mg/kg	# 121	58.5	117	
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05		0.1 mg/kg	# 120	58.4	118	
EP068: Endrin aldehyde	7421-83-4	0.05	mg/kg	<0.05		0.1 mg/kg	109	42	115	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05		0.1 mg/kg	# 125	53.6	120	
EP068: 4,4'-DDT	50-29-3	0.05	mg/kg	----		0.1 mg/kg	# 136	52.6	129	
		0.2	mg/kg	<0.2		-----	-----	-----	-----	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05		0.1 mg/kg	# 126	51.6	124	

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 Project : Riverside Tourist Cabins South West Rocks



Sub-Matrix: SOIL		Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		Recovery Limits (%)	
Method Contaminant	CAS Number	LOR	Unit	Result	Spike Concentration	LCS Spike Recovery (%)	Low High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1134181) - continued							
EP068: Methoxychlor	72-43-5	0.05	mg/kg	---	0.1 mg/kg	# 145	52.4 129
		0.2	mg/kg	<0.2	---	---	---
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1134181)							
EP068: Dieldrin	62-73-7	0.05	mg/kg	<0.05	0.1 mg/kg	98.1	43.9 113
EP068: DDT	50-65-8	0.05	mg/kg	<0.05	0.1 mg/kg	104	31.2 112
EP068: DDT-methyl	919-86-8	0.05	mg/kg	---	0.1 mg/kg	82.2	33 130
EP068: Monocrotophos	6923-22-4	0.05	mg/kg	<0.2	---	---	---
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.1 mg/kg	100	40 129
EP068: Disulfoton	333-41-5	0.05	mg/kg	<0.05	0.1 mg/kg	# 117	57.1 114
EP068: Chlorpyrifos-methyl	5508-13-0	0.05	mg/kg	<0.05	0.1 mg/kg	# 126	58.9 113
EP068: Parathion-methyl	298-00-0	0.05	mg/kg	---	0.1 mg/kg	# 117	54.8 112
		0.2	mg/kg	<0.2	---	---	---
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.1 mg/kg	109	57.8 119
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.1 mg/kg	# 121	68 109
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.1 mg/kg	# 123	62.2 115
EP068: Permethrin	56-38-2	0.05	mg/kg	---	0.1 mg/kg	# 114	54.7 113
		0.2	mg/kg	<0.2	---	---	---
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.1 mg/kg	117	51.9 121
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.1 mg/kg	116	58 118
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.1 mg/kg	# 118	59.8 115
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.1 mg/kg	# 116	32.5 101
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.1 mg/kg	# 120	59.6 116
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.1 mg/kg	# 120	58.4 118
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.1 mg/kg	# 120	56.9 117
EP068: Azinphos Methyl	---	0.05	mg/kg	<0.05	0.1 mg/kg	129	42 130
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 1133513)							
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	5.0 mg/kg	96.7	66 114
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	5.0 mg/kg	102	63 113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	5.0 mg/kg	90.8	65 114
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	5.0 mg/kg	101	65 111
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	5.0 mg/kg	87.6	60 112
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	5.0 mg/kg	104	65 110
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	5.0 mg/kg	101	64 111
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	5.0 mg/kg	97.6	64 111
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	5.0 mg/kg	88.2	61 115
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	5.0 mg/kg	96.2	57 114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	5.0 mg/kg	84.3	44 124
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	5.0 mg/kg	93.7	46 124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	5.0 mg/kg	100	50 116

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Sub-Matrix: SOIL				Method Blank (MB) Report		Laboratory Control Spike (LCS) Report	
Method/Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 1133613) - continued							
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.0 mg/kg	89.3	52 130
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	5.0 mg/kg	94.2	54 129
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	5.0 mg/kg	85.5	52 128
EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 11336210)							
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	5.0 mg/kg	91.3	66 114
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	5.0 mg/kg	89.1	63 113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	5.0 mg/kg	86.2	65 114
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	5.0 mg/kg	90.0	65 111
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	5.0 mg/kg	83.9	60 112
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	5.0 mg/kg	89.0	65 110
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	5.0 mg/kg	97.9	64 111
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	5.0 mg/kg	93.3	64 111
EP075(SIM): Benz(a)anthracene	96-55-3	0.5	mg/kg	<0.5	5.0 mg/kg	93.6	61 115
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	5.0 mg/kg	84.5	57 114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	5.0 mg/kg	70.1	44 124
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	5.0 mg/kg	86.3	48 124
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	5.0 mg/kg	93.4	50 116
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.0 mg/kg	85.2	52 130
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	5.0 mg/kg	89.0	54 129
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	5.0 mg/kg	84.5	52 128
EP000071: Total Petroleum Hydrocarbons (QCLot: 1133550)							
EP000: C8 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	93.7	71 123
EP000071: Total Petroleum Hydrocarbons (QCLot: 1133612)							
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	259 mg/kg	94.6	65 112
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	524 mg/kg	85.1	76.2 122
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	-----	-----	-----
EP000071: Total Petroleum Hydrocarbons (QCLot: 1136209)							
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	259 mg/kg	93.4	65 112
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	524 mg/kg	81.1	76.2 122
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	-----	-----	-----

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 Project : Riverside Tourist Cabins South West Rocks



Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL		Matrix Spike (MS) Report					
Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	Spike Concentration	MS	Recovery (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QCLot: 1137209)							
EB0916264-002	Composite 2	EG005T: Arsenic	7440-38-2	50 mg/kg	106	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	112	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	120	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	112	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	112	70	130
EG005T: Zinc	7440-66-6	50 mg/kg	110	70	130		
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1137241)							
EB0916264-002	Composite 2	EG035T: Mercury	7439-97-6	5.0 mg/kg	116	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1134182)							
EB0916005-008	Anonymous	EP066: Total Polychlorinated biphenyls	---	0.1 mg/kg	130	70	130
EP066A: Organochlorine Pesticides (OC) (QCLot: 1134181)							
EB0916005-008	Anonymous	EP066: gamma-BHC	58-89-9	0.05 mg/kg	112	70	130
		EP066: Heptachlor	76-44-8	0.05 mg/kg	# 148	70	130
		EP066: Aldrin	309-00-2	0.05 mg/kg	# 152	70	130
		EP066: Dieldrin	60-57-1	0.05 mg/kg	121	70	130
		EP066: Endrin	72-20-8	0.2 mg/kg	# 131	70	130
		EP066: 4,4'-DDT	50-29-3	0.2 mg/kg	123	70	130
EP066B: Organophosphorus Pesticides (OP) (QCLot: 1134181)							
EB0916005-008	Anonymous	EP066: Diazinon	333-41-5	0.05 mg/kg	120	70	130
		EP066: Chlorpyrifos-methyl	5958-13-0	0.05 mg/kg	127	70	130
		EP066: Pirimiphos-ethyl	23505-41-1	0.05 mg/kg	116	70	130
		EP066: Bromophos-ethyl	4824-78-6	0.05 mg/kg	112	70	130
		EP066: Prothios	34843-46-4	0.05 mg/kg	104	70	130
EP076(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1133613)							
EB0916005-008	Anonymous	EP076(SIM): Acenaphthene	83-32-9	2.5 mg/kg	105	70	130
		EP076(SIM): Pyrene	129-00-0	2.5 mg/kg	102	70	130
EP076(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1138210)							
EB0916201-005	Anonymous	EP076(SIM): Acenaphthene	83-32-9	2.5 mg/kg	99.4	70	130
		EP076(SIM): Pyrene	129-00-0	2.5 mg/kg	94.6	70	130
EP080(071): Total Petroleum Hydrocarbons (QCLot: 1133650)							
EB0916211-003	Anonymous	EP080: C6 - C9 Fraction	---	28 mg/kg	72.0	70	130
EP080(071): Total Petroleum Hydrocarbons (QCLot: 1133612)							

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Sub-Matrix: SOIL					Main: Spike (MS) Report		
Laboratory sample ID	Client sample ID	Method/Concussion	CAS Number	Spike Concentration	MS Spike Recovery (%)	Recovery Limits (%)	
						Low	High
EP000071: Total Petroleum Hydrocarbons (QCLot: 1133612) - continued							
EB0916005-008	Anonymous	EP071: C10 - C14 Fraction	----	259 mg/kg	97.6	70	130
		EP071: C15 - C28 Fraction	----	524 mg/kg	92.4	70	130
EP000071: Total Petroleum Hydrocarbons (QCLot: 1135209)							
EB0916201-005	Anonymous	EP071: C10 - C14 Fraction	----	259 mg/kg	78.5	70	130
		EP071: C15 - C28 Fraction	----	524 mg/kg	71.9	70	130

ALS Laboratory Group
 ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division
INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB0916264	Page	: 1 of 9
Client	: AUSTRALIAN SOIL & CONCRETE P/L	Laboratory	: Environmental Division Brisbane
Contact	: MR BEN HART	Contact	: Tim Kilminster
Address	: P O BOX 5120 BALLINA NSW, AUSTRALIA 2478	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: asct@bigpond.com	E-mail	: Services.Brisbane@alsenviro.com
Telephone	: +61 02 66868567	Telephone	: +61-7-3243 7222
Facsimile	: +61 02 66868396	Facsimile	: +61-7-3243 7218
Project	: Riverside Tourist Cabins South West Rocks	QC Level	: NEPM 1998 Schedule B(3) and ALS QCS3 requirement
Site	: ---	Date Samples Received	: 15-OCT-2009
C-O-C number	: ---	Issue Date	: 23-OCT-2009
Sampler	: G.McIlwain/B Dick	No. of samples received	: 3
Order number	: ---	No. of samples analysed	: 3
Quote number	: ---		

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

This Interpretive Quality Control Report contains the following information:

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

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 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample data for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NENM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (including elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (100 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix : **SOIL**

Metric: SOIL		Evaluation: * = Holding time breach ; ✓ = Within holding time				
Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
			Date extracted	Due for extraction	Date analysed	Due for analysis
EA055: Moisture Content						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	---	---	18-OCT-2009	14-OCT-2009
EG005T: Total Metals by ICP-AES						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	21-OCT-2009	04-NOV-2009	21-OCT-2009	05-APR-2010
EG035T: Total Recoverable Mercury by FIMS						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	21-OCT-2009	04-NOV-2009	22-OCT-2009	04-NOV-2009
EP068: Polychlorinated Biphenyls (PCB)						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	20-OCT-2009	21-OCT-2009	21-OCT-2009	29-NOV-2009
EP068A: Organochlorine Pesticides (OC)						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	20-OCT-2009	21-OCT-2009	21-OCT-2009	29-NOV-2009
EP068B: Organophosphorus Pesticides (OP)						
Soil Glass Jar - Unpreserved Composite 1, Composite 3	Composite 2,	07-OCT-2009	20-OCT-2009	21-OCT-2009	21-OCT-2009	29-NOV-2009
EP075(SMB): Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved Composite 1		07-OCT-2009	19-OCT-2009	21-OCT-2009	19-OCT-2009	28-NOV-2009
Soil Glass Jar - Unpreserved Composite 2,	Composite 3	07-OCT-2009	20-OCT-2009	21-OCT-2009	21-OCT-2009	29-NOV-2009

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 Project : Riverside Tourist Cabins South West Rocks



Matrix: SOIL		Evaluation: x = Holding time breach ; ✓ = Within holding time.			
Method	Sample Date	Extraction / Preparation		Analysis	
Container / Client Sample ID(s)	Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis
EP1081074: Total Petroleum Hydrocarbons					
Soil Glass Jar - Unpreserved Composite 1, Composite 3	07-OCT-2009	16-OCT-2009	21-OCT-2009	✓	19-OCT-2009
Soil Glass Jar - Unpreserved Composite 1	07-OCT-2009	16-OCT-2009	21-OCT-2009	✓	19-OCT-2009
Soil Glass Jar - Unpreserved Composite 2, Composite 3	07-OCT-2009	20-OCT-2009	21-OCT-2009	✓	22-OCT-2009
					21-OCT-2009
					28-NOV-2009
					29-NOV-2009

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 Project : Riverside Tourist Cabins South West Rocks



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical kit(s) in which the submitted sample(s) was/were processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: * = Quality Control frequency not within specification ; * = Quality Control frequency within specification.

Matrix: SOIL									
Quality Control Sample Type Analytical Methods	Method	Count		Remainder	Rate (%)		Quality Control Specification		
		QC			Actual	Expected	Actual	Expected	
Laboratory Duplicates (DUP)									
Moldure Content	EA065-103	2		20		10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4		29		13.8	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2		20		10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1		8		12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2		20		10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2		20		10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4		36		11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2		15		13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)									
PAH/Phenols (SIM)	EP075(SIM)	2		29		6.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1		8		12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2		36		5.8	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1		15		6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)									
PAH/Phenols (SIM)	EP075(SIM)	2		29		6.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1		8		12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1		20		5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2		36		5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1		15		6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)									
PAH/Phenols (SIM)	EP075(SIM)	2		29		6.9	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1		20		5.0	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1		8		12.5	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1		20		5.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1		20		5.0	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2		36		5.6	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1		15		6.7	5.0	✓	ALS QCS3 requirement

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 Work Order : EB0016264
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analysis/Method	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG005T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)/Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504 505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506 1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN09	SOIL	USEPA 2002 Mod. Hot Block Acid Digestion 10g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house: Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

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Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids (Option B - Non-concentrating)	OR317B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

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Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QM/N38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068: Polychlorinated Biphenyls (PCB)	1307390-008	---	Total Polychlorinated biphenyls	---	118 %	53.8-109%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	alpha-BHC	319-84-6	120 %	58.4-118%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	gamma-BHC	58-59-9	118 %	59.1-118%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	delta-BHC	319-86-8	124 %	61.1-117%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Heptachlor	76-44-8	150 %	57.3-119%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Aldrin	309-00-2	138 %	58.2-113%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Heptachlor epoxide	1024-57-3	126 %	60.4-113%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	trans-Chlordane	5103-74-2	126 %	60.3-114%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	alpha-Endosulfan	959-08-8	128 %	56-120%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	cis-Chlordane	5103-71-9	125 %	60.8-113%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Dieldrin	60-57-1	123 %	58.8-115%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	4,4'-DDE	72-85-9	120 %	61.2-116%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	beta-Endosulfan	33213-65-9	121 %	58.5-117%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	4,4'-DDD	72-84-8	120 %	58.4-118%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Endosulfan sulfate	1031-07-8	125 %	53.6-120%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	4,4'-DDT	50-29-3	136 %	52.6-129%	Recovery greater than upper control limit
EP068A: Organochlorine Pesticides (OC)	1307390-002	---	Endrin ketone	53494-70-5	126 %	51.6-124%	Recovery greater than upper control limit

A Cansel Brothers Limited Company

Page : 8 of 9
 Work Order : EB0916054
 Client : AUSTRALIAN SOIL & CONCRETE P/L
 Project : Riverside Tourist Cabins South West Rocks



Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries - Continued							
EP068A: Organochlorine Pesticides (OC)	1307290-002	---	Methoxychlor	72-43-5	145 %	52.4-120%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Diazinon	333-41-5	117 %	57.1-114%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Chlorpyrifos methyl	5508-13-0	128 %	58.9-113%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Parathion-methyl	298-00-0	117 %	54.8-112%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Fenthion	55-38-9	121 %	68-109%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Chlorpyrifos	2921-88-2	123 %	62.2-115%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Parathion	56-38-2	114 %	54.7-113%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Bromophos-ethyl	4824-78-6	118 %	59.8-115%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Permethrin	2224-92-8	116 %	32.5-101%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Prothiofos	34643-46-4	120 %	59.8-116%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Ethion	563-12-2	120 %	58.4-118%	Recovery greater than upper control limit
EP068B: Organophosphorus Pesticides (OP)	1307290-002	---	Carbophenothion	786-19-6	120 %	56.9-117%	Recovery greater than upper control limit
Matrix Spike (MS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	EB0916005-008	Anonymous	Heptachlor	76-44-8	148 %	70-130%	Recovery greater than upper data quality objective
EP068A: Organochlorine Pesticides (OC)	EB0916005-008	Anonymous	Aldrin	309-00-2	152 %	70-130%	Recovery greater than upper data quality objective
EP068A: Organochlorine Pesticides (OC)	EB0916005-008	Anonymous	Endrin	72-20-8	131 %	70-130%	Recovery greater than upper data quality objective

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

Matrix: SOIL

A Campbell Brothers Limited Company

Page : 9 of 9
Work Order : E60916264
Client : AUSTRALIAN SOIL & CONCRETE P/L
Project : Riverside Tourist Cabins South West Rocks



Matrix: SOIL		Extraction / Preparation		Analyze	
Method		Date extracted	Due for extraction	Date analyzed	Days overdue
Container / Client Sample ID(s)					
EA055: Moisture Content					
Soil Glass Jar - Unpreserved					
Composite 1,	Composite 2,	---	---	16-OCT-2009	2
Composite 3				14-OCT-2009	

Outliers : Frequency of Quality Control Samples

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

- No Quality Control Sample Frequency Outliers exist.

APPENDIX B – Chain of Custody Documentation

CHAIN OF CUSTODY DOCUMENTATION									
CLIENT: Shannon Pacific CL- ASCT P/L					SAMPLER: Greg McIlwain / Brian Dick				
ADDRESS/OFFICE: 7/17 Southern Cross Dr, Bellina NSW 2478					MOBILE: 0408079826				
PROJECT MANAGER (PM):					PHONE (02) 65868567				
PROJECT ID: Riverside Tourist Cabins, South West Rocks					EMAIL REPORT TO: asct@b.bignard.com				
SITE:					EMAIL INVOICE TO: (if different to report) same as above.				
P.O. NO.:					ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)				
RESULTS REQUIRED (Date):					QUOTE NO.:				
FOR LABORATORY USE ONLY					COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				
COOLER SEAL (circle appropriate)									
Product Yes No N/A									
SAMPLE TEMPERATURE									
CRUSHED Yes No									
SAMPLE INFORMATION (note: S = Soil, W = Water)					CONTAINER INFORMATION				
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles			
1	Composite 1	Soil	7.10.09	2.30pm	Clear Jar	1			
2	Composite 2	Soil	7.10.09	3.15pm	Glass Jar	1			
3	Composite 3	Soil	7.12.08	3.50pm	Glass Jar	1			
Notes: e.g. Highly contaminated samples, Extra volume for QC or trace LORs etc. Environmental Division Brisbane Work Order EB0916264 Telephone : +61-7-3243 7222									
RELIQUISHED BY:					RECEIVED BY:				
Name: Ben Hart					Name: A. K. K.				
Of: ASCT					Of: ALS				
Date:					Date: 14.10.09				
Time:					Time: 12:00pm				
Name:					Name:				
Of:					Of:				
Date:					Date:				
Time:					Time:				
METHODOLOGY:					METHODOLOGY:				
Con' Note No:					Con' Note No:				
Transport Co:					Transport Co:				
Water Container Codes: 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; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulphuric 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.									

ENFM (204/4)

ALS Environmental

APPENDIX C – Historical Search Documents

Req:R145022 /Doc:DL AE052806 /Rev:01-Jul-2008 /Sts:NO.OK /Prt:15-Jul-2009 13:18 /Pgs:ALL /Seq:1 of 2
 Ref:GE001291 /Src:M

Form: 01TL
 Release: 1
 www.lpi.nsw.gov.au

TRANSFER OF LEASE MORTGAGE OR CHARGE

New South Wales
 Real Property Act 1900



AE52806H

PRIVACY NOTE: this information is legally required and will become part of the public record

STAMP DUTY

Office of State Revenue use only

NEW TREASURY	
Client No: 1626724	207
Duty: 52.00	Phone No: 4755713
And details:	

(A) LEASE/MORTGAGE/ CHARGE

AA460133

(B) TORRENS TITLE

4/1022342

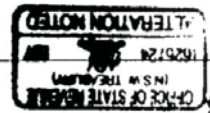
(C) LODGED BY

Delivery Box	Name, Address or DX and Telephone	CODE
49R	LLPN: ANZ BANK C/- ESPREON DX 885 SYDNEY 02 9210 0953	TL TM TC
Reference: ANZ TTD		

(D) TRANSFEROR

A & A Moore Property Pty Limited ACN 102 663 570

PROPERTY



(E)

The transferor acknowledges receipt of the consideration of \$ 400,000.00 and transfers to the transferee all the transferor's estate and interest in the above lease

(F)

Encumbrances (if applicable):

(G) TRANSFEREE

TTD Hotels Pty Limited ACN 115 023 946 as to a 60% share & Jason Alan Juillerat as to a 40% share

(H)

TENANCY: Tenants in Common

DATE

19th December 2007

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: A & A Moore Property Pty Limited ACN 102 663 570

Authority: section 127 of the Corporations Act 2001

Signature of authorised person:

Alex Moore

Signature of authorised person:

Amanda Moore

Name of authorised person: Alex Moore
 Office held: Director

Name of authorised person: Amanda Moore
 Office held: Director

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Peter Cecil Pardy

Signatory's name: Peter Cecil Pardy
 Signatory's capacity: transferee's solicitor

600

All handwriting must be in block capitals.

Page 1 of ____

LAND AND PROPERTY INFORMATION NSW

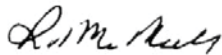
Req:R145022 /Doc:DL AE052806 /Rev:01-Jul-2008 /Sts:NO.OK /Prt:15-Jul-2009 13:18 /Pgs:ALL /Seq:2 of 2
Ref:GE001291 /Src:M

THIS IS AN ANNEXURE TO **TRANSFER OF LEASE MORTGAGE OR CHARGE**
BETWEEN A & A Moore Property Pty Limited ACN 102 663 570 AS TRANSFEROR
AND TTD Hotels Pty Limited ACN 115 023 946 and Jason Alan Juillerat AS
TRANSFeree
DATED 19 December 2007

NATIONAL AUSTRALIA BANK LIMITED ABN 12 004 044 937 as Mortgagee under
Mortgage/s Number/s 8977062 hereby consents to the within **Transfer of Lease**
from

DATED at Sydney this 14th day of April, Two thousand and eight

Signed in my presence by Roger James
Corkery, Level 2 Attorney of National
Australia Bank Limited pursuant to Power
of Attorney Registered No. 39 Book 4512
who is personally known to me.



.....
Robyne Elizabeth McNeill
Bank Officer
255 George Street, Sydney NSW

Signed for and on behalf of National
Australia Bank Limited by its said
Attorney.



.....
Level 2 Attorney

EPA | Search results
Page 1 of 1

Department of **Environment and Climate Change**

- [Management overview](#)
- [Site auditor scheme](#)
- [Guidelines under the CLM Act](#)
- [Record of EPA notices](#)
- [Engaging a consultant](#)
- [Information on gasworks sites](#)
- [Regulatory Impact Statement - Proposed Underground Petroleum Storage Systems Regulation](#)
- [Frequently asked questions](#)
- [More information about land](#)

Search results

Your search for: LGA:
Kempsey
Shire Council

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

[... more search tips](#)

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record and What's not in the record](#).



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<http://www.environment.nsw.gov.au/clmapp/searchresults.aspx?&LGA=4350&Subur...> 15/07/2009

Cattle dip site locator

Page 1 of 1



NSW DEPARTMENT OF PRIMARY INDUSTRIES | AGRICULTURE

[Home](#) » [Animals](#) » [Health, disease and pests](#) » [Cattle health and disease](#) » [Cattle tick](#) »

Cattle dip site locator

This search retrieved 0 dip sites.

Related information:

* [Cattle tick control in NSW](#)

Dip name

Road

Town/Locality

Council

South West Rocks

KEMPSEY

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.

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<http://www.agric.nsw.gov.au/tools/>

15/07/2009

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