

# **Final Report**

Post Phase 2 Environmental Site Assessment Mobil Service Station Merimbula (NO1063) 27 Market Street, Merimbula NSW 2548

13 AUGUST 2009

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# Abbreviations

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Abbreviation	Description
AHD	Australian Height Datum
AIP	Australian Institute of Petroleum
ALS	Australian Laboratory Services
AMG	Australian Map Grid
ANZECC	Australian and New Zealand Environment and Conservation Council
AOIG	Australian Oil Industry Guidelines
AST	Above-Ground Storage Tank
bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, total Xylene
mbTOC	Metres Below Top of Casing
COC	Chain of Custody
COPC	Chemical of Potential Concern
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
FB	Field Blank
GME	Groundwater Monitoring Event
GMP	Groundwater Monitoring Plan
GRA	Global Remediation Australia
GAC	Groundwater Acceptance Criteria
На	Hectares
HASP	Health and Safety Plan
HIL	Health Investigation Levels
IL	Investigation Levels
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
LP	Leaded Petrol
LRP	Lead Replacement Petrol
m	Metres
МАН	Monocyclic Aromatic Hydrocarbons
μg/L	Micrograms per Litre
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	Natural Attenuation
N/A	Not Applicable
NEPM	National Environment Protection Measure
OCP	Organochlorine Pesticides
OPP	Organophosphorous Pesticides
PAH	Polycyclic Aromatic Hydrocarbons

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PCBPolychlorinated BiphenylP1 ESAPhase I Environmental Site AssessmentP2 ESAPhase 2 Environmental Site AssessmentPP2 ESAPost Phase 2 Environmental Site AssessmentPIDPhoto-Ionisation DetectorPSHPhase Separated HydrocarbonPULPPremium Unleaded PetrolQRAQuantitative Risk AssessmentRAPRemediation Action PlanRBRinsate BlankRPDSelative Percentage DifferenceSACSoil Acceptance CriteriaSRMPSite Risk Management PlanSVOCSemi-Volatile Organic CompoundsSWLStanding Water LevelTBTrip BlankTDSTotal Dissolved SolidsTEATotal Organic CarbonTPHTotal Petroleum HydrocarbonsTITTriple Interceptor TrapULPUnleaded PetrolUSTUnderground Storage TankURSURS Australia Pty LtdVOCVolatile Organic Compounds	Abbreviation	Description
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ULPUnleaded PetrolUSTUnderground Storage TankURSURS Australia Pty LtdVOCVolatile Organic Compounds	TPH	Total Petroleum Hydrocarbons
UST Underground Storage Tank URS URS Australia Pty Ltd VOC Volatile Organic Compounds	TIT	Triple Interceptor Trap
URSURS Australia Pty LtdVOCVolatile Organic Compounds	ULP	Unleaded Petrol
VOC Volatile Organic Compounds	UST	Underground Storage Tank
• .	URS	URS Australia Pty Ltd
WRF Work Request Form	VOC	Volatile Organic Compounds
	WRF	Work Request Form

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#### **DEFINITION OF TERMS**

Throughout this report, unless the context suggests otherwise;

"Environmental Laws" means all current and future laws (including the common law), rules and regulations of the Commonwealth of Australia or any of its States or Territories, or provisions within any such laws, rules or regulations which may apply in the State where the site is located and which prescribe standards, methods, operating procedures or remedies for:

- a) treatment, handling, transportation and disposal of products, waste material or hazardous substances; and
- b) the discharge, emission or seepage of chemicals, manufactured products or other substances into the environment, or which otherwise prescribe standards for protection of the workplace, community, livestock, wildlife or the environment or which prescribe penalties or damages for death to individuals for failure to comply with such standards or for pollution or contamination of the environment.

"Acceptance Criteria" means the criteria specified in the Attached Reports which are criteria:

- a) adopted by applicable state or national regulatory authorities and/or prescribed under Environmental Laws as at the date of the Report; and/or
- b) determined by reference to risk assessment principles and processes.

"Report" means this Environmental Report and its appendices.

"Attached Reports" means those documents which are referred to as appendices A to I.

## **Executive Summary**

URS Australia Pty Ltd (URS) was commissioned by Mobil Oil Australia Pty Ltd on 30 April 2009 to undertake a Post Phase 2 Environmental Site Assessment (PP2 ESA) of the Mobil Service Station Merimbula (NO1063), located at 27 Market Street, Merimbula, NSW, 2548 (the Site) (**Figure 1** and **2**).

#### Site Identification

FACILITY NAME	Mobil Service Station Merimbula
SITE ID NUMBER	NO1063
FACILITY ADDRESS	27 Market Street, Merimbula, NSW, 2548

### **Purpose and Objectives**

The purpose of this PP2 ESA was as follows;

- To close data gaps identified in previous P1 and P2 ESA reports conducted by IT Environmental (Australia) Pty Ltd at the Site;
- To investigate the nature and extent of petroleum hydrocarbon impacts within soil and groundwater environments beneath the Site;
- To qualitatively assess the potential risks that the identified COPC may pose to human and environmental receptors within and in close proximity to the Site; and
- To provide risk management options for corrective actions to address any encountered hydrocarbon impact.

### Scope of Work

The scope of work for this investigation included;

- Drilling of three bores and conversion into groundwater monitoring wells;
- Gauging and sampling of four existing and the three newly installed groundwater monitoring wells;
- Analysis of selected soil and groundwater samples for TPH, BTEX, PAHs, phenols and inorganics; and
- Monitoring of 7 utility service pits surrounding the Site.

#### Summary of Findings

The Site is a closed service station with all petroleum infrastructure still present. The Site is currently zoned as 3(a) General Business Zone, which allows commercial and residential land use.

The Site is bordered by Market Street to the east, Monaro Street to the south and Wonga Street to the west. Land uses and properties located adjacent to the Site include commercial properties to the north, south, east and west and residential properties to the west.

Groundwater is present in a sand aquifer at approximately 1.5 mbgs. It is of a quality suitable for drinking purposes, however, the township of Merimbula has a reticulated water supply so it is considered unlikely to be used for drinking water. Groundwater flow direction is inferred to be to the south east towards Merimbula Lake at an estimated velocity of between 0.1 to 195 m/yr. Potential surface water receptors include Merimbula Lake. There are no registered groundwater bores within a 500 m radius of the Site.

Hydrocarbon concentrations were not detected above the lower limit of reporting in the 3 soil bores (MW5 to MW7). A hydrocarbon odour and high PID reading were noted in the soil samples collected



**Executive Summary** 

from MW5 at a depth of 1.8 to 2.0 mbgs. This sample was collected from below the water table and therefore may be representative of groundwater conditions.

All 7 groundwater monitoring wells reported semi-volatile (TPH  $C_{10}$ - $C_{36}$ ) hydrocarbon impact above the LOR. It is therefore inferred that dissolved phase petroleum hydrocarbon impact is present beneath the majority of the Site. The groundwater sample from MW7 contained an ethylbenzene concentration exceeding the acceptance criteria. Concentrations of arsenic and zinc exceeded the acceptance criteria in a number of samples, however are likely to represent background concentrations.

#### Summary of Qualitative Risk Assessment

A qualitative assessment of risk posed to potential environmental and human receptors from the contamination identified at the Site was conducted. It concluded that soil concentrations for samples collected during this investigation are less than the adopted acceptance criteria and therefore the risks are acceptable and no further quantification is required,

It is noted that there was positive TPH  $C_{10}$ - $C_{36}$  concentrations in all on-site wells, however there is no human health screening guideline established for TPH. Arsenic concentrations exceeded the human health adopted investigation levels for groundwater. The arsenic investigation level is based on drinking water quality and as the Site is located within an area of domestic water supply, it is not considered that groundwater would be extracted for domestic purposes, hence the potential risks to human health are considered to be low and acceptable.

#### Summary of Risk Management Options

Risk management options recommended to mitigate the risks posed by the identified impacts include that appropriate OH&S procedures should be implemented to minimise dermal contact with soil and groundwater and to minimise exposure to vapours during any subsurface work. Such procedures should address the monitoring of hydrocarbon concentrations in the air during excavation works, and the appropriate handling, storage and management of contaminated soil and/or groundwater encountered during any Site works.

#### Conclusions

The results of this investigation indicate that the groundwater beneath the Site is impacted by petroleum hydrocarbons. Due to the semi-volatile nature of the hydrocarbons present in the groundwater, the likely source is the oil storage and infrastructure related to the workshop area. Given the direction and velocity of groundwater flow, dissolved phase impacts have the potential to reach the surface water receptor located approximately 40 m downgradient, however the low solubility and high retardation factor of the semi-volatile hydrocarbon impact would mitigate this somewhat. The soil and groundwater concentrations do not pose a potential risk to human heath or the environment.

Although concentrations of ethylbenzene, arsenic and zinc in groundwater exceeded the acceptance criteria for commercial/industrial use, the lack of a potential risk to human health and the environment means that the Site is suitable for continued use as a service station or redevelopment for commercial or residential use.

The above conclusion shall be read in conjunction with the conclusions as stated in Section 10.

## Introduction

## 1.1 General Introduction

URS Australia Pty Ltd (URS) was commissioned by Mobil Oil Australia Pty Ltd on 30 April 2009 to undertake a Post Phase 2 Environmental Site Assessment (PP2 ESA) of the Mobil Service Station Merimbula (NO1063), located at 27 Market Street, Merimbula, NSW, 2548 (the Site) (**Figure 1** and **2**).

The purpose of this PP2 ESA was as follows;

- To close data gaps identified in previous P1 and P2 ESA reports conducted by IT Environmental (Australia) Pty Ltd at the Site;
- To investigate the nature and extent of petroleum hydrocarbon impacts within soil and groundwater environments beneath the Site;
- To qualitatively assess the potential risks that the identified COPC may pose to human and environmental receptors within and in close proximity to the Site; and
- To provide risk management options for corrective actions to address any encountered hydrocarbon impact.

This PP2 ESA was undertaken in general accordance with:

- Applicable Environmental Laws;
- The Work Request Form (ref: NO1063/2) as presented in Appendix A; and
- Mobil Oil Australia Pty Ltd's Environmental Site Assessment Specification, Module 5 Post Phase 2 ESA Activities, 5<sup>th</sup> June 2006 (Doc Ref: GRA-S-ESA-Mod05-Rev1).

Relevant project management information is provided in Appendix A.

### 1.2 Scope of Work

The scope of work for this investigation included;

- Drilling of three bores and conversion into groundwater monitoring wells;
- Gauging and sampling of four existing and the three newly installed groundwater monitoring wells;
- Analysis of selected soil and groundwater samples for TPH, BTEX, PAHs, phenols and inorganics; and
- Monitoring of 7 utility service pits surrounding the Site.

## Site Historical Review

## 2.1 Introduction

Site details and historical information have been sourced from the IT Environmental (Australia) Pty Ltd reports Phase 1 ESA (2005a) and Phase 2 ESA (2005b), as well as updated information obtained from Site observations during the current PP2 ESA field program.

An interview was also conducted with Mrs Shirley Bazley, Hon Curator at The Old School Museum on 14 May 2009. She indicated that there was no additional site specific information to supplement existing source material, however, a service station was located opposite the Site on the eastern side of Market Street. It was present in a photograph of the area taken in the 1930s and replaced by shops in the 1980s.

## 2.2 Site Definition

## 2.2.1 General Information

A summary of the Site description is provided in the following table:

Facility Name	Mobil Service Station Merimbula
ExxonMobil Site Number	NO1063
Facility Address	27 Market Street Merimbula NSW 2548
Title Identification Details/ Legal Description	Lot 1 within Deposited Plan 163768 under the Local Government Area of Bega Valley, County of Auckland, Parish of Pambula.
Current Ownership	Mobil Oil Australia Pty Ltd
Current Site Use and Zoning	Site Use: Closed
	Zoning: 3(a) General Business Zone, under the Bega Valley Local Environmental Plan 2002. Allowable developments include childcare centres, recreations areas and dwelling houses attached to shops.
Proposed Site Use	Unknown. Possible commercial and/or residential redevelopment.
Previous ESA or Validation Reports	IT Environmental (Australia) Pty Ltd, 2005a, Phase 1 Environmental Site Assessment, Mobil Service Station Merimbula (NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.
	IT Environmental (Australia) Pty Ltd, 2005b, Phase 2 Environmental Site Assessment, Mobil Service Station Merimbula (Site ID: NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.
Site Area	Approximately 1,100 m <sup>2</sup>

#### Table 2-1 Summary of Site Description Details

### 2.2.2 On-Site Fuel/Chemical Storage Facilities

Information pertaining to above ground and below ground fuel/chemical storage facilities (AST and UST respectively) was obtained from the following sources:

- IT Environmental (2005a and 2005b) Phase 1 and Phase 2 ESA reports; and
- A Site inspection carried out by URS personnel on 13 May 2009.

Current and former on-site fuel storage facilities are detailed in Table 1a and 1b.



Scope:

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Not correct

Findings:

### **2 Site Historical Review**

#### 2.2.3 Summary of Past Environmental Investigations

From the two historical ESA reports reviewed for the Site, the key findings pertaining to the historical uses of the Site are detailed below:

Phase 1 Environmental Site Assessment, Mobil Service Station Merimbula (NO1063), 27 Market Street, Merimbula NSW 2548

Date 31 October 2005

The aim of the Phase 1 ESA was to compile a historical overview of the Site.

Infrastructure on-site includes five USTs and one LPG AST. According to anecdotal information from the Site operator one UST has previously been removed from the Site.

The Site was purchased by the Vacuum Oil Company (now Mobil Oil Australia Pty Ltd) in 1959 for the purposes of petroleum storage and distribution. Prior to 1959 the Site was most 1970 likely used for farming and storage purposes (see Table 2).

The potential sources of contamination include leaks and spills from petroleum related infrastructure and distribution systems, the workshop area, car wash bays and imported fill material

The chemicals of concern associated with the potential sources include TPH, BTEX, lead, PAHs and phenols. Pathways and potential receptors were identified.

Phase 2 Environmental Site Assessment, Mobil Service Station Merimbula (Site ID: NO1063), 27 Market Street, Merimbula NSW 2548

Date	31 October 2005
Scope:	The objectives of the Phase 2 ESA were to:
	<ul> <li>define the nature, extent and sources of liquid, dissolved and vapour phase petroleum hydrocarbon impacts identified at the Site;</li> </ul>
	<ul> <li>determine the influence of specific geologic and hydrogeological conditions on the fate and transport of contaminants identified at the Site;</li> </ul>
	<ul> <li>identify potential contaminants that may pose a risk to human health and the environment; and</li> </ul>
	<ul> <li>provide determination as to whether the Site is fit for ongoing use as a service station.</li> </ul>
Findings:	IT Environmental drilled 11 soil bores (MW1 to MW4, SB5 to SB11) to depths of between 4 and 6 mbgs in September 2005. Groundwater monitoring wells were installed in MW1 to MW4. Soil and groundwater samples were collected for analyses.
	The inferred direction of groundwater flow is to the south south-west with a seepage velocity of between 1 and 2 m/day.
	Hydrocarbon impacted soil (as TPH $C_{10}$ - $C_{36}$ ) exceeding the nominated ILs were detected in soil boreholes MW4 and SB7 located along the western boundary of the Site at depths of 2 m and 0.5 mbgs, respectively. The sample collected from MW4 at 2 mbgs was from below the groundwater table and therefore possibly representative of groundwater conditions.
	PSH was not detected in any monitoring wells.
	Low dissolved phase hydrocarbon concentrations (as TPH) were detected in one monitoring well (MW4) located along the western boundary of the Site.
ward?	Concentrations of dissolved arsenic, chromium, mercury and zinc were detected at concentrations above the nominated ILs in groundwater beneath the Site. Dissolved metals concentrations are likely to be related to regional background levels.
	Adverse health effects as a result of exposure to the impacted soil and/or groundwater was considered as unlikely to occur.

#### 2.3 **Historical Site Use Summary**

A summary of the historical Site use and information obtained for this PP2 ESA is presented in Table 2.

## Site Setting and Sensitive Receptor Survey

## 3.1 Topography

Topographical Site information was obtained from the Land Information Centre (1974) *Pambula 8824-2-S 1:25,000 Topographic Map* and from a Site visit. The Site topography can be described as generally flat with a gentle slop to the east towards Market Street. Regional topography for the 500 m radius surrounding the Site slopes from west/southwest to east towards Merimbula Lake. The elevation ranges from 50 mAHD to the southwest of the Site to 0 mAHD approximately 40 m to the east of the Site.

## 3.2 Site Setting

## 3.2.1 Regional Setting

Sensitive land uses located within a 500 m radius of the Site have been obtained from UBD New South Wales (2009), Google Streetview (viewed 5/6/09) and from the Site inspection conducted by URS personnel on 13 May 2009. The regional sensitive land uses are illustrated on **Figure 2** and summarised below:

- Retirement village approximately 500 m to the south west of the Site;
- Residential properties approximately 40 m to the west and 200 m to the north east of the Site;
- Commercial properties to the north, east, south and west of the Site;
- Merimbula Lake to the east, south east and south of the Site;
- Tennis courts 500 m to the north west of the Site;
- Old School Museum 300 m north of the Site;
- Berrambool sportsground 500 m to the north of the Site;
- Numerous motels located between 200 and 500 m to the north, north west and west of the Site;
- Two churches located 400 m north and 450 m north east of the Site;
- The council offices and bowling club locates 350 m north of the Site; and
- A hotel/motel located 200 m south of the Site.

It is also noted that two service stations are located on Merimbula Drive approximately 200 m and 350 m to the north west of the Site.

## 3.2.2 Local Setting

Land uses and properties adjacent to the Site, including those across adjacent roads were obtained during the Site inspection conducted by URS personnel. Identified adjacent landuses are illustrated on **Figure 2** and summarised below:

<b>Direction from Site</b>	Site Use (Nature of Activity)	Business Name
North	Commercial	Gloria Jean's Coffees and the Centrepoint Shopping Centre
South	Commercial	Sanity, Rivers, McDonalds, Jeans West
East	Commercial	Promenade Shopping Complex, Lakeside Walk Shopping Complex
West	Residential and Commercial	Monarco Court (residential apartments), Merimbula Fresh Fruit Market

Table 3-1 Adjacent Pro	perty Descriptions
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### 3 Site Setting and Sensitive Receptor Survey

## **3.3 Surface Water Receptors**

Existing surface water receptors within 500 metres of the Site were obtained from the Land Information Centre (1974) *Pambula 8824-2-S 1:25,000 Topographic Map* and from the Site inspection conducted by URS personnel. Based on the local and regional topography, the migration of surface and subsurface contaminant releases from the Site are likely to be to the east towards Merimbula Lake.

The closest and only surface water receptor within 500 m of Site is Merimbula Lake, approximately 40 m to the east of the Site (**Figure 2**).

## 3.4 Underground Utility Search

The location of on-site and off-site underground utilities is illustrated on **Figure 3**. Details of the utilities were gathered from site figures in IT Environmental's Phase 1 ESA (2005a) and Phase 2 ESA (2005b) reports, as well as results of the "Dial Before You Dig" search. Where possible, the locations of existing services were verified during the Site inspection conducted by URS personnel.

## 3.5 Regional Geology

Information on the regional geology of the Site was obtained from the following sources:

- IT Environmental (Australia) Pty Ltd, 2005a, Phase 1 Environmental Site Assessment, Mobil Service Station Merimbula (NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.
- IT Environmental (Australia) Pty Ltd, 2005b, Phase 2 Environmental Site Assessment, Mobil Service Station Merimbula (Site ID: NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.

The regional geology provided in IT Environmental's Phase 1 ESA (2005a) and Phase 2 ESA (2005b) reports was obtained from the Bega Mallacoota Geological Series Sheet SJ/55-4 and Part Sheet SJ/55-8 (1995). The Site is likely to overlap two different geological regions. The general geological profile in the region is summarised in the following table.

Geological Unit	Description	Depth Interval (mbgs)	Thickness (m)
Eastern Region			
Ben Bite Formation	Mudrock, coarse sandstone	Unknown	Unknown
Worange Point Formation	Massive sandstone with mudrock	Unknown	Unknown
Bellbird Creek Formation	eek Thin-bedded sandstone, siltstone and mudstone		Unknown
Twofold Bay Formation	Fluvial sandstone with mudrock and conglomerate	Unknown	Unknown
Western Region	Alluvial and colluvial deposits	unknown	Unknown

Table 3-2 Regional Geology

#### **3 Site Setting and Sensitive Receptor Survey**

## 3.6 Regional Hydrogeology

Information and data on the regional hydrogeology relevant to the region were obtained from the following source:

- Department of Water Resources, 1987, Groundwater in NSW Assessment of Pollution Risk Map, 1:2,000,000.
- IT Environmental (Australia) Pty Ltd, 2005a, Phase 1 Environmental Site Assessment, Mobil Service Station Merimbula (NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.
- IT Environmental (Australia) Pty Ltd, 2005b, Phase 2 Environmental Site Assessment, Mobil Service Station Merimbula (Site ID: NO1063), 27 Market Street, Merimbula NSW 2548, reported to Mobil Oil Australia Pty Ltd, Victoria.

The information indicates that the uppermost regional water bearing unit comprises generally low yielding (less than 5 L/second) and low salinity (less than 1000 mg/L) groundwater suitable for stock, domestic and some irrigation purposes. The regional hydrogeology is summarised in **Table 3**.

## 3.7 Groundwater Bore Records Search

A search for registered groundwater users located within a 500 m radius of the Site was undertaken using the Groundwater Bore Database maintained by the NSW Department of Water and Energy (DWE). The results of the search are summarised in **Table 4** and presented in **Appendix B**.

The results indicate that there are no registered groundwater users within a 500 m radius of the Site. The closest 7 registered groundwater bores are presented on **Figure 2**.

The four groundwater monitoring wells installed by IT Environmental in 2005 were not listed in the Groundwater Bore Database. No other unregistered monitoring wells were identified on or in the immediate vicinity of the Site.

## **4 Preliminary Site Conceptual Model**

- Lateral migration of impacted groundwater towards Merimbula Lake located approximately 40 m to the east of the Site.
- Direct ingestion of soil or groundwater during intrusive works or groundwater abstraction.
- Dermal contact with impacted soil or groundwater.

## 4.1.4 Potential Receptors

Identified potential receptors of COPCs, should complete exposure pathways be present in the vicinity of the Site, include:

- Visitors to Site.
- Off-site employees at commercial complexes to the north, east, south and west of the Site.
- Off-site residents located to the west of the Site.
- Potential unregistered down-gradient groundwater users for domestic, recreational and industrial purposes.
- Workers undertaking maintenance of existing subsurface utility infrastructure.
- Construction workers undertaking ground disturbance.
- Soil and groundwater environments beneath the Site and their associated ecosystems.
- Merimbula Lake receiving groundwater discharge from the Site.
- Corrosion / permeation of existing utilities including drinking water mains.
- Buildings and structures.

## **Environmental Site Assessment Methodology**

## 5.1 Soil Investigation

As part of this Post Phase 2 ESA, a soil investigation was performed at the Site. Details of the soil investigation are summarised in the following table. The locations of soil bores are presented on **Figure 3**.

Activity/Item	Details		
Date of Field Activities	13 and 14 May 2009		
Service Location	DAGS Location Services were engaged to identify underground services prior to any intrusive works commencing.		
Drilling	Dig Smart cleared drilling locations using non-destructive digging (air knifing) as per the Mobil Oil Australia Pty. Ltd. – Pre-Drilling Protocol.		
	Concrete coring was required at 3 locations (MW5, MW6 and MW7). Coring was conducted by Condrill.		
	Motorised drilling was undertaken using continuous flight hollow stem augers at all soil bore locations (MW5, MW6 and MW7).		
Bores Drilled and Target	Total of 3 soil boreholes (MW5, MW6 and MW7) were drilled.		
Depth	MW5 was drilled to a depth of 4.1 metres		
	MW6 was drilled to a depth of 4.0 metres		
	MW7 was drilled to a depth of 4.0 metres		
	The locations of the soil bores are presented on Figure 3.		
Soil Logging	Soil and rock type classifications and descriptions are based on USCS and AS4482.1-1997.		
	Soil descriptions for the lithology encountered during drilling are presented in the borelogs in <b>Appendix D</b> .		
Sampling Methodology	Soil samples were collected by hand auger for samples collected up to 1.2 mbgs. So samples were collected using pushtube from 2.0 mbgs to the termination of drilling. All samples were placed in clean, laboratory-supplied acid washed solvent rinsed glass jars with Teflon lined lids.		
Soil Screening	Concentrations of volatile organic compounds from collected soil samples were screened using a photo ionisation detector (PID) that was calibrated daily to a known concentration of iso-butylene calibration gas and adjusted to measure the benzene equivalent concentration.		
Sample Preservation	Samples were stored on ice, in an esky whilst on-site and in transit to the laboratory.		
Decontamination Procedures	The hand auger and pushtube housing were decontaminated between samples with Decon 90 solution and rinsed with potable water. Drilling equipment coming into contact with soils was decontaminated between soil-bores with a high-pressure water-jet and potable water.		
Disposal of Soil Cuttings	Soil cuttings were contained on-site in 1 x 205L drum prior to disposal by Volman Enterprises Pty Ltd in accordance with NSW Regulations. Waste disposal certificates are presented in <b>Appendix E</b> .		
Soil Bore Abandonment			

## Table 5-1 Soil Investigation Activity Summary



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## **5 Environmental Site Assessment Methodology**

## 5.2 Groundwater Investigation

As part of the Post Phase 2 ESA, a groundwater investigation was performed on the Site. Details of the groundwater investigation are summarised in the following table. The locations of monitoring wells are presented on **Figure 3**.

Table 3-2 Groundwater investigation Activity Summar	Table 5-2	Groundwater Investigation Activity Summar
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Activity/Item	Details			
Date of Field Activities	Groundwater monitoring well construction – 14 May 2009 Groundwater sampling - 21 May 2009			
Well Construction	Three (3) wells (MW5, MW6 and MW7) were constructed with 50 mm, Class 18 uPVC threaded screen and casing. Construction details for groundwater monitoring wells are presented in <b>Appendix D</b> .			
Well Development	Following installation of the monitoring wells, each well was developed by removing approximately 5 bore volumes at which point field parameters had stabilised. Development was conducted using a Waterra footvalve.			
Well Survey	A licensed surveyor, Caddey Searl & Jarman, was commissioned to survey the height (elevation) and location of all wells to metres Australian Height Datum (mAHD) and Australian Map Grid (AMG) co-ordinates, respectively. The survey data is presented in <b>Appendix F</b> .			
Well Gauging	Monitoring wells were gauged, using an oil / water interface probe, for depth to groundwater, the potential presence of PSH, and total depth of well prior to the commencement of purging.			
Well Purging	Each monitoring well was purged dry or an equivalent three (minimum) well volumes removed using dedicated disposable bailers prior to sampling. Ex-situ measurement of groundwater pH, dissolved oxygen (DO), reduction potential (redox), temperature and electrical conductivity (EC) was conducted during purging. Field data sheets showing purging details are presented in <b>Appendix G</b> .			
Sampling Methodology	<ul> <li>Field data sheets showing purging details are presented in Appendix G.</li> <li>Groundwater samples were collected using the dedicated disposable bailers used for purging the wells. The bailers were equipped with volatile organic compound sampling devices.</li> <li>Groundwater samples were collected from MW1, MW2, MW3, MW4, MW5, MW6 and MW7.</li> </ul>			
Sample Preservation	Samples were placed in laboratory-supplied bottles containing appropriate preservatives. Samples were stored on ice in an esky whilst on-site and in transit to the laboratory.			
	Samples collected for metals analysis were filtered on-site to 0.45 $\mu m$ and put in to preserved laboratory supplied bottles.			
Decontamination Procedure	Decontamination was not required on most sampling equipment as it was dedicated for each individual well. The interface probe was washed in Decon 90 solution and rinsed with potable water between measurements.			
Disposal of Purged Groundwater	Purged water was contained on-site in 1 x 205L drum prior to disposal by Volman Enterprises Pty Ltd in accordance with NSW Regulations. Waste disposal certificates are presented in <b>Appendix E</b> .			

## 5.3 Utility Pit Vapour Survey

As part of the Post Phase 2 ESA, a utility pit vapour survey was undertaken at the Site. The locations of the utility pits are shown in **Figure 3**. A summary of the utility pit vapour monitoring survey methodology and activities are presented in the following table.

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## 5 Environmental Site Assessment Methodology

## Table 5-3 Utility Pit Survey Activity Summary

Activity/Item	Details
Utility Pit location	The location of the utility pits was established in consultation with the service utility plans and from visual observations (Figure 3).
Vapour Survey	Seven utility pits located on-site and adjacent to the Site (UP1-UP7) along Market Street, Monaro Street and Wonga Street were surveyed with a PID for VOCs on the 21 May 2009. PID readings were obtained by inserting the PID probe through an opening in the utility pit cover and monitoring for 1 minute at each location.
Instrument Type	Qrae PID
Date Instrument Calibrated and Calibration standard used	21 May 2009, standard 100 ppm isobutylene, refer to <b>Appendix A</b> for calibration certificates.



## 6.1 Site Specific Geology

Bore logs illustrating the geology encountered during drilling are presented in **Appendix D**. Cross sections drawn both parallel and transverse to the groundwater flow direction are included in **Figures 4a** and **4b**.

Based on the drilling conducted during this investigation and the previous investigation by IT Environmental (2005b), the local geological details are summarised as indicated below.

Depth (mbgs) Lithology	
0.0 to 0.2	Concrete
0.2 to ~0.5	Fill Material: sand, grey-white, medium grained, some rocks and concrete rubble
~0.5 to ~4.0	Sand: grey, fine to medium grained, sub-rounded, poorly graded
~4.0 to ?	Clay: red with white to grey mottling, medium plasticity, some sand present

Sand fill was present at MW5 to 0.9 mbgs, at MW6 to 0.7 mbgs and at MW7 to 0.8 mbgs. Refusal was encountered on large concrete blocks at MW5 during NDD. The monitoring well was relocated approximately 1 m to the north.

## 6.2 Site Specific Hydrogeology

Description of the site-specific hydrogeology is based on observations made during the Site inspection, the drilling of bores, the installation of the monitoring wells and subsequent groundwater monitoring and sampling. The site-specific hydrogeology is summarised in the following table.

Table 6-2	Site	Specific	Hydrogeology
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Parameter	Description	
Groundwater Occurrence	An unconfined shallow aquifer was encountered at approximately 1.5 mbgs in the sand sequence beneath the Site.	
	Standing water levels (SWLs) across the Site varied between 1.26 and 1.79 mBTOC.	
	A summary of SWLs, including available historical results, is presented in Table 5 (attached).	
Occurrence of PSH	No PSH was encountered in any of the monitoring wells.	
	A hydrocarbon sheen was noted in MW5.	
Groundwater Elevation and Flow Direction	Groundwater elevations across the Site varied between 0.59 mAHD (MW1 and MW2) and 0.87 mAHD (MW4).	
	Groundwater elevations in all wells are tabulated in <b>Table 5</b> and inferred groundwater contours for the aquifer are presented graphically on <b>Figure 5</b> .	
	From the contours, the inferred direction of groundwater in the aquifer is south east towards the Merimbula Lake.	
Hydraulic Gradient	The hydraulic gradient calculated from the inferred groundwater contours is approximately 0.008.	
Hydraulic Conductivity	Based on literature values for the type of the lithology encountered beneath the Site, the hydraulic conductivity of the aquifer is estimated to be in the order of 0.0173 to 17.28 m/day (Domenico & Schwartz, 1990).	



Parameter	Description			
Groundwater Velocity	Assuming an effective porosity of 26-53 % (Domenico & Schwartz, 1990), typical for a fine grained sand, the groundwater velocity beneath the Site is estimated to be in the order of approximately 0.1 to 195 m/year.			
Beneficial Groundwater Use	Groundwater salinity, as calculated from EC readings <sup>1</sup> , varies from 255 to 869 mg/L indicating that the most sensitive beneficial uses of groundwater would be protection of aquatic ecosystems and domestic use. Discussion of the beneficial uses of the groundwater is provided in <b>Section 6.4.1</b> as part of the selection of appropriate groundwater investigation levels for the Site.			
Field Parameter Measurement	Ex-situ measurements of dissolved oxygen (DO), oxidation / reduction potential (redox), pH, electrical conductivity are presented in <b>Table 6</b> .			
	Dissolved oxygen ranged from 2.76 ppm to 3.67 ppm.			
	Corrected redox potential ranged from 165 mV to 266 mV.			
<i>.</i>	pH ranged from 6.0 to 6.4.			
	Electrical conductivity ranged from 393 to 1337 µS/cm.			
Anomalies in Field Data	No anomalies were noted within the field data.			

## 6.3 Field Observations of Impact

Field observations of soil and groundwater impact are detailed below in Table 6-3 and 6-4.

#### Table 6-3 Field Observations of Impact - Soil

Sample No.	PID Result	Notable odours	Comments
MW5_1.8-2.0	45.3	Hydrocarbon odour noted	Sample was collected at or just below the water table.

#### Table 6-4 Field Observations of Impact - Groundwater

Well No.	Sheen	Notable odours	Comments
MW5	Slight sheen present	Hydrocarbon odour noted	

## 6.4 Field and Laboratory Analytical Results

## 6.4.1 Applicable Acceptance Criteria

For the purposes of this Report, "Acceptance Criteria" are the adopted investigation levels (ILs) which are:

- a) adopted by applicable state or national regulatory authorities and/or prescribed under Environmental Laws as at the date of the Report; and/or
- b) determined by reference to risk assessment principles and processes.

## Soil Acceptance Criteria

The acceptance criteria adopted for comparison of the soil analytical results from this PP2 ESA are discussed below. The adopted soil assessment criteria (SAC) are summarised in **Table 7**.

<sup>&</sup>lt;sup>1</sup> EC reading ( $\mu$ g/cm) x 0.65 = TDS (mg/L)

#### **NEPM Health Based Investigation Levels**

The NEPM (1999a) provides risk-based Health Investigation Levels (HIL) for selected organic and inorganic chemicals in soils. Different levels are provided for a variety of exposure settings including residential, open-space/parks/recreational and commercial/industrial land uses. The NEPM HILs have been developed to be protective of human health and do not take into account environmental concerns. The Site is currently zoned by Bega Council as 3(a) General Business Zone, which allows commercial and residential land use. The soil analytical results have therefore been compared to NEPM Level F (Commercial/Industrial) and NEPM Level D (Residential with minimal opportunities for soil access) concentrations for available analytes.

#### **NEPM Ecological Investigation Levels**

The NEPM (1999a) provides interim Ecological Investigation Levels (EIL) for some analytes in an urban setting for selected organic and inorganic chemicals in soils based on considerations of phytotoxicity, ANZECC B levels and soil survey data from urban residential properties in four Australian capital cities. EILs have been adopted in instances where a HIL was not available.

#### **NSW EPA Guidelines**

In lieu of reliable threshold concentrations set for benzene, toluene, ethylbenzene, total xylene and unspeciated total petroleum hydrocarbons (TPH) within the NEPM guidelines, the NSW EPA *Guidelines for Assessing Service Station Sites* (1995) threshold concentrations has been adopted as the investigation levels for these analytes. It is noted that the NSW EPA Guidelines are intended for assessment of sensitive land uses and are therefore considered to be conservative for the 3(a) General Business zoning of the Site.

#### Groundwater Acceptance Criteria

The groundwater acceptance criteria (GAC) adopted for comparison of the groundwater analytical results from this PP2 ESA are discussed below. The adopted GAC are summarised in **Table 8**.

#### ANZECC/ARMCANZ Guidelines

An assessment of the quality of groundwater at the Site was carried out with reference to the Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000) trigger values for the protection of aquatic ecosystems.

The 95% trigger values for protection of marine water ecosystems were adopted based on the potential receiving water body for Site groundwater being Merimbula Lake, which is tidal. As the ANZECC/ARMCANZ (2000) guidelines are surface water guidelines they have been adopted as a screening tool only, and exceedances of these trigger values does not automatically mean remedial action is required. Where no trigger values are provided, the low reliability indicative interim working levels (IIWL) were adopted.

No guideline values exist for TPH in groundwater that are considered appropriate for this monitoring program. Low reliability IIWLs provided in the ANZECC/ARMCANZ (2000) guidelines refer to a trigger value of 7  $\mu$ g/L. This is based on US EPA methodology, which is generally not used in deriving guidelines for Australian conditions. More importantly, the values are based on the toxicity to



crustaceans from North-West Shelf crude oils. As such, the IIWL for TPH is not considered appropriate.

#### Australian Drinking Water Guidelines

The National Health and Medical Research Council (NHMRC) (2004) Australian Drinking Water Guidelines (ADWG) have been adopted for this investigation due to the potential beneficial use of the water for domestic use (based on low salinity).

The NHMRC and ARMCANZ developed the Australian Drinking Water Guidelines, updated in 2004. The guidelines provide health-based and aesthetic values for a range of micro-organisms, physical quality, inorganic chemicals, organic chemicals, radiological quality and pesticides. The health-based guideline values, which have been used to identify contaminants of potential concern in the groundwater, are concentrations which, based on present knowledge, do not result in any significant risk to the health of a consumer of the water over a lifetime. These guidelines are recognised within the NEPM Schedule B(6) Guideline on Risk Based Assessment of Groundwater Contamination (NEPC, 1999b) and Environment Protection and Heritage Council (EPHC)<sup>2</sup> as relevant Investigation Levels for the assessment of human health issues at the point of extraction (for use as drinking water – protection of human health issues associated with use of water as domestic supply within households<sup>3</sup>). These guidelines are more current and extensive than the ANZECC/ARMCANZ (2000) Guidelines for Recreational Water Quality and Aesthetics (relevant to lower levels of exposure than drinking water).

#### 6.4.2 Analytical Program

#### Soil Sampling

A total of 19 primary soil samples, 1 field duplicate and 1 field triplicate sample were collected during the investigation. Of these, 6 primary soil samples (2 from each borehole), 1 field duplicate sample and 1 field triplicate sample were submitted for analysis for the identified contaminants of potential concern, which included the following:

- Total Petroleum Hydrocarbons (TPHs);
- Benzene, toluene, ethylbenzene and xylenes (known as BTEX);
- Volatile hydrocarbons (VHCs);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Phenols; and
- Inorganics including arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), copper (Cu), nickel (Ni), lead (Pb), mercury (Hg), vanadium (V) and zinc (Zn).

The analyses scheduled for each sample are shown in the COCs included in Appendix H.

<sup>&</sup>lt;sup>2</sup> National Chemical Reference Guide, Australian Department of the Environment and Heritage, Environment Protection and Heritage Council, Supporting documentation and online database available at:

http://hermes.erin.gov.au/pls/crg\_public/ICRGPPUBLIC.pStart

<sup>&</sup>lt;sup>3</sup> Australian Drinking Water Guidelines (NHMRC, 2004) provide guideline values for water that are considered to be safe for *"human consumption, either directly, as supplied from the tap, or indirectly, in beverages, ice or foods prepared with water. Drinking water is also used for other domestic purposes such as bathing and showering".* The guidelines apply to any water intended for drinking irrespective of the source (municipal supplies, rainwater tanks, groundwater bores etc.). The methodology used to derive the guidelines allows for exposures other than ingestion (dermal contact and inhalation including inhalation of volatiles during activities such as showering in heated water). Hence the guidelines are considered relevant for the assessment of pathways of exposure that may be associated with use of groundwater.

Primary samples were delivered to the ALS Laboratory Group (ALS) in Sydney for analyses, while field triplicate samples were submitted to LabMark in Melbourne. All laboratories are registered by NATA for the analyses required.

Two samples from each borehole were selected for analysis on the basis of field observations and sample depth.

#### Groundwater Sampling

A total of 7 primary groundwater samples, 1 field duplicate sample and 1 field triplicate sample were collected during the investigation. The samples were submitted for analysis for the identified contaminants of potential concern, which included the following:

- Total Petroleum Hydrocarbons (TPHs);
- Benzene, toluene, ethylbenzene and xylenes (known as BTEX);
- Volatile hydrocarbons (VHCs);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Phenols; and
- Inorganics including arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), copper (Qu), lead (Pb), mercury (Hg), nickel (Ni), vanadium (V) and zinc (Zn).

The analyses scheduled for each sample are shown in the COCs included in Appendix H.

Primary samples were delivered to the ALS Laboratory Group (ALS) in Sydney for analyses, while field triplicate samples were submitted to LabMark in Melbourne. All laboratories are registered by NATA for the analyses required.

### **Quality Assurance / Quality Control Sampling**

Quality assurance and quality control (QA/QC) samples were collected during each sampling event. This included 2 trip blanks, 2 field blanks, 2 rinsate blanks and 2 field duplicates, which were submitted to ALS, and 2 field triplicates which were submitted to LabMark for analysis.

## 6.4.3 Field Method Validation

Field method validation details are outlined below:

#### Table 6-5Field Method Validation

Requirement	Yes/No	Comments
Monitoring bores drilled with solid stem augers.	Yes	Push tubing was used to collect soil samples in boreholes. Bores requiring installation of monitoring wells were subsequently reamed with solid augers.
Drilling and sampling equipment decontaminated correctly.	Yes	Solid stem augers were decontaminated with high pressure water. Hand auger and pushtube housing were decontaminated between each sample with Decon90 and water.
Soil sampled with pushtube.	Yes	Soil samples were collected using pushtube with disposable, single use inserts.



Requirement	Yes/No	Comments		
Monitoring wells were developed and purged according to standard URS protocol and Mobil Oil Australia Pty. Ltd. specifications.	Yes	Groundwater monitoring wells were developed using Waterra footvalve until approximately 5 well volumes were removed.		
Sample Preservation	Yes	Soil and groundwater samples were appropriately preserved and stored on ice prior to arrival at the laboratory.		
		Sample temperatures recorded by the laboratory upon receipt were 1.3°C and 5.8°C which is within the allowable range of 2-6°C.		
Samples delivered to laboratory within sample holding times.	Yes	Soil and groundwater samples were delivered to the laboratory with at least 50% of the holding time remaining. Sample analyses were conducted within holding time.		

## 6.4.4 Analytical Data Validation

Analytical data validation is the process of assessing whether data are in compliance with method requirements and project specifications. The primary objectives of this process are to ensure that data of known quality are reported, and to identify if the data can be used to fulfil the overall project objectives.

The data validation guidelines adopted are based upon data validation guidance documents published by the United States Environmental Protection Agency (US EPA). These include the US EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008; the US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004; and the US EPA Guidance on Environmental Data Verification and Data Validation, November 2002. The process involves the checking of analytical procedure compliance and an assessment of the accuracy and precision of analytical data from a range of quality control measurements, generated from both the field sampling and analytical programs.

Specific elements that have been checked and assessed for this project include:

- preservation and storage of samples upon collection and during transport to the laboratory;
- sample holding times;
- use of appropriate analytical and field sampling procedures;
- required limits of reporting;
- frequency of conducting quality control measurements;
- rinsate, field and trip blank results;
- laboratory blank results;
- field duplicate and triplicate results;
- laboratory duplicate results;
- matrix spike (MS) results;
- surrogates spike results;
- review of chromatograms; and
- the occurrence of apparently unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements.

Specific elements that have been checked and assessed for this project are detailed in Appendix I.

#### Analytical Data Quality – Soil

Analytical results for QC data are detailed in the relevant primary results tables (duplicates) and in **Table 11a** (blanks). Detailed laboratory QC data is presented in the analytical reports in **Appendix H**.

On the basis of the analytical data validation procedure employed, the overall quality of the soil analytical data produced is considered to be of an acceptable standard for interpretive use. The data validation process identified a number of QA/QC issues. The issues are summarised in **Appendix I**.

#### Analytical Data Quality – Groundwater

Analytical results for QC data are detailed in the relevant primary results tables (duplicates) and in **Table 11b** (blanks). Detailed laboratory QC data is presented in the analytical reports in **Appendix H.** 

On the basis of the analytical data validation procedure employed, the overall quality of the groundwater analytical data produced is considered to be of an acceptable standard for interpretive use. The data validation process identified a number of QA/QC issues. The issues are summarised in **Appendix I**.

### 6.4.5 Soil Sample Analytical Results

Table 6-6 below provides a summary of soil analytical results compared against the adopted investigation levels (SAC). Soil analytical results for each parameter are presented in the following attached tables:

TPH, BTEX & Lead	Table 9a
PAHs & Phenols	Table 9b
Metals and VHCs	Table 9c

**Figure 6** also provides a graphical presentation of TPH, BTEX and lead results for each soil borehole. Analytical laboratory reports for all soil samples are attached in **Appendix H**.

No. of Primary Samples Analysed	Constituent	Min Conc. (mg/kg)	Max Conc. (mg/kg)	Samples Exceeding Adopted SAC
6	Benzene	<0.2	<0.2	No samples exceeded the adopted SAC
6	Toluene	<0.5	<0.5	No samples exceeded the adopted SAC
6	Ethylbenzene	<0.5	<0.5	No samples exceeded the adopted SAC
6	Total xylene	<1.0	<1.0	No samples exceeded the adopted SAC
6	TPH (C6-C9)	<10	<10	No samples exceeded the adopted SAC
6	TPH (C10-C14)	<50	<50	No samples exceeded the adopted SAC
6	TPH (C15-C28)	<100	<100	No samples exceeded the adopted SAC
6	TPH (C <sub>29</sub> -C <sub>36</sub> )	<100	<100	No samples exceeded the adopted SAC

Table 6-6 Soil Analytical Results Summary



No. of Primary Samples Analysed	Constituent	Min Conc. (mg/kg)	Max Conc. (mg/kg)	Samples Exceeding Adopted SAC
6	Total PAHs	Not detected	Not detected	No samples exceeded the adopted SAC
6	Naphthalene	<0.5	<0.5	No samples exceeded the adopted SAC
6	Benzo(a)pyrene	<0.5	<0.5	No samples exceeded the adopted SAC
6	Total Phenols	Not detected	Not detected	No samples exceeded the adopted SAC
6	Arsenic	<5	<5	No samples exceeded the adopted SAC
6	Barium	<10	120	No samples exceeded the adopted SAC
6	Cadmium	<1	1	No samples exceeded the adopted SAC
6	Chromium (Total)	<2	14	No samples exceeded the adopted SAC
6	Copper	<5	69	No samples exceeded the adopted SAC
6	Lead	<5	205	No samples exceeded the adopted SAC
6	Mercury	<0.1	0.1	No samples exceeded the adopted SAC
6	Nickel	<2	14	No samples exceeded the adopted SAC
6	Vanadium	<5	8	No samples exceeded the adopted SAC
6	Zinc	<5	452	No samples exceeded the adopted SAC
6	VHCs	Not detected	Not detected	No samples exceeded the adopted SAC

### 6.4.6 Groundwater Sample Analytical Results

**Table 6-7** below provides a summary of groundwater analytical results compared against the adopted groundwater assessment criteria (GAC). Groundwater sample analytical results for each parameter are tabulated in the following attached tables:

TPH, BTEX & Lead	Table 10a
PAHs & Phenols	Table 10b
Metals and VHCs	Table 10c

**Figure 7** also provides a graphical presentation of TPH, BTEX, naphthalene and selected metal results for each monitoring well. Analytical laboratory reports for all groundwater samples are attached in **Appendix H**.

No. of Primary Samples Analysed	5	Min Conc. (μg/L)	Max Conc. (μg/L)	Samples Exceeding Adopted GAC
7	Benzene	<1	<1	No samples exceeded the adopted GAC
7	Toluene	<5	<5	No samples exceeded the adopted GAC
7	Ethylbenzene	<2	10	MW7 exceeded the adopted GAC
7	Total xylene	<4	<4	No samples exceeded the adopted GAC
7	TPH (C <sub>6</sub> -C <sub>9</sub> )	<20	<20	No samples exceeded the adopted GAC
7	TPH (C <sub>10</sub> -C <sub>14</sub> )	<50	260	No samples exceeded the adopted GAC
7	TPH (C15-C28)	<50	2400	No samples exceeded the adopted GAC
7	TPH (C <sub>29</sub> -C <sub>36</sub> )	<50	450	No samples exceeded the adopted GAC
7	Total PAHs	Not detected	4.2	No samples exceeded the adopted GAC
7	Naphthalene	<1	4.2	No samples exceeded the adopted GAC
7	Benzo(a)pyrene	<0.5	<0.5	No samples exceeded the adopted GAC
7	Total Phenols	Not detected	Not detected	No samples exceeded the adopted GAC
7	Arsenic	0.002	0.028	MW1, MW2, MW3, MW4 and MW6 exceeded the adopted GAC
7	Barium	0.014	0.054	No samples exceeded the adopted GAC
7	Cadmium	<0.0001	0.0002	No samples exceeded the adopted GAC
	Chromium (Total)	0.002	0.006	No samples exceeded the adopted GAC
7	Copper	<0.001	<0.001	No samples exceeded the adopted GAC
7	Lead	<0.001	<0.001	No samples exceeded the adopted GAC
7	Mercury	<0.0001	<0.0001	No samples exceeded the adopted GAC
7	Nickel	<0.001	0.001	No samples exceeded the adopted GAC
7	Vanadium	<0.01	0.02	No samples exceeded the adopted GAC
7	Zinc	0.012	0.67	MW1, MW3, MW4 and MW6 exceeded the adopted GAC
7	VHCs	Not detected	Not detected	No samples exceeded the adopted GAC

#### Table 6-7 Groundwater Analytical Results Summary

## 6.4.7 Utility Pit Vapour Monitoring Results

Vapour monitoring was conducted using a PID in utility pits located within a 20 m radius of the Site. The locations of the utility pits are shown on **Figure 3**.

Each pit was monitored for a minimum of 5 minutes duration. The results of the utility pit vapour monitoring are presented in the table below.

Pit No.	Utility Pit Type	Depth Sampled (mbgs)	Duration of Sampling (min)	Highest VOC Reading (ppm)	Comments/ Observations
UP1	Stormwater	~0.1	~1	0	None
UP2	Telstra	~0.1	~1	0	None
UP3	Telstra	~0.1	~1	0	None
UP4	Stormwater	~0.1	~1	0	None
UP5	Stormwater	~0.1	~1	0.3	None
UP6	Stormwater	~0.1	~1	0.4	None
UP7	Sewerage	~0.1	~1	0	None

#### Table 6-8 Utility Pit Vapour Monitoring - Record of VOC Reading

The benzene equivalent PID readings were compared with benzene concentrations listed in the Safe Work Australia Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]. The standard lists a time weighted average (over 8 hours) benzene concentrations of 5 ppm. The results of the utility monitoring represent all VOCs and show that values are below 5 ppm and suggest that the potential for exposure to hydrocarbon vapours through these pits is currently low.

## Discussion

## 7.1 Extent of Soil Impact

The vertical and lateral extent of soil impact encountered during this investigation in soil boreholes at the Site is presented in **Figures 4a, 4b** and **6**.

TPH, BTEX, PAH, phenol and VHC concentrations in soil samples selected for analyses were less than the LOR.

Concentrations of metals detected in soil samples were less than the adopted SAC. Metals concentrations were generally low and likely to be at naturally occurring levels.

Soil samples were selected for analyses from depths of between 0.2 and 1.2 mbgs. The water table was approximately 1.5 mbgs on-site, therefore soil samples collected from depths of greater than approximately 1.5 mbgs may be representative of groundwater conditions. No soil samples collected from below the water table were selected for analyses.

PID concentrations presented in **Appendix D** indicate that the concentration of volatile organic compounds was highest in MW5 at a depth of 1.8 to 2.0 mbgs. This sample was not selected for analyses as it was collected from below the water table and therefore considered to be representative of groundwater conditions.

## 7.2 Extent of Groundwater Impact

The inferred extent of groundwater impact is presented in Figures 4a, 4b and 7.

All 7 groundwater monitoring wells reported semi-volatile (TPH  $C_{10}$ - $C_{36}$ ) hydrocarbon impact above the LOR. It is therefore inferred that dissolved phase petroleum hydrocarbon impact is present beneath the majority of the Site. The only semi-volatile analyte detected above the LOR was naphthalene in MW4, MW5, MW6 and MW7 at concentrations less than the adopted GAC.

The TPH  $C_{10}$ - $C_{36}$  concentrations indicate that the hydrocarbon impact present in the groundwater onsite is likely to be oil rather than a fuel. The TPH  $C_{10}$ - $C_{36}$  chromatograms for groundwater samples from MW1 to MW7 are presented in **Appendix H**. The relatively low concentrations make source identification difficult, however, the chromatogram for MW7 appears to be oil. Potential sources of impact are discussed in **Section 9.3.1**.

Volatile hydrocarbon concentrations (TPH  $C_6$ - $C_9$ ) in groundwater were generally less than the LOR. The exception to this was MW7 which contained an ethylbenzene concentration exceeding the GAC. The low TPH  $C_6$ - $C_9$  and BTEX concentrations indicate that petrol is unlikely to be a source of the identified groundwater hydrocarbon impact.

Analysis for metals in groundwater samples from all monitoring wells generally reported low concentrations around expected background levels (although some exceeded the adopted GAC). Concentrations of arsenic and zinc exceeding the GAC are likely to represent background concentrations.

It is noted that groundwater elevation data measured as part of the investigation suggests the groundwater flow direction is to the south east towards Merimbula Lake.

A graphical representation of the groundwater contamination is shown in the Site Conceptual Model presented as **Figure 8**.

#### 8 Qualitative Risk Assessment

## **Qualitative Risk Assessment**

## 8.1 Introduction

A qualitative evaluation of potential risk to human health and the environment has been undertaken on the basis of the available information. The aim of the qualitative risk assessment is to identify potential receptors and exposure pathways that may be relevant for the Site and surrounding areas on the basis of current or proposed land use and the nature and extent of the impacts identified. The qualitative assessment utilises this information to identify key issues associated with on-site and off-site areas that have the potential to present unacceptable risks to human heath and/or the environment and that may require further evaluation.

To facilitate the qualitative risk assessment of the Site (and surrounding areas), a "Tier 1" evaluation has been conducted. A Tier 1 evaluation involves a comparison of concentrations reported in soils and groundwater with generic values (i.e. not site-specific) that are relevant for the identified exposure pathways and receptors groups (including on-site petroleum use, commercial/industrial, residential and environmental as required).

The Tier 1 values used in this assessment have been selected in accordance with the Mobil Oil Australia Pty Ltd "Environmental Site Assessments Specification, Module 3 – Phase 2 Environmental Site Assessments" (Section 11.4.15 and Section 3). This approach utilises current, published and approved Tier 1 values for soils and groundwater (as for relevant receptors and pathways) that are derived from NEPM, enHealth, ANZECC, NHMRC and NSW EPA Service Station Guidelines. The Tier 1 levels provided in the AIP (Final Draft April 1999) "Guidelines for the Management of Petroleum Hydrocarbon Impacted Land" are only appropriate when the Site is continuing use as a petroleum handling facility, and hence in this instance have not been adopted as Tier 1 criteria.

## 8.2 Chemicals of Potential Concern

Chemicals of potential concern (COPC) are chemicals which are known or suspected to be present at concentrations high enough to warrant inclusion in an assessment of risks to human health. The identification of COPC is based on the following:

- An assessment of the nature and extent of these chemicals in the environment at the Site; and
- A comparison of analytical results for soil and groundwater samples associated with hydrocarbon impact with relevant human health or environmental investigation levels.

Based on the nature and extent of impacts (discussed in **Section 7** - Extent of Groundwater and Soil Impact) and a summary of analytical results (presented in **Section 6**), the following were identified as COPC at the Site:

### Human Health

Soil Groundwater Semi-volatile TPH ( $C_{10}$ - $C_{36}$ ). Ethylbenzene, arsenic, zinc, and volatile and semi-volatile TPH.



### 8 Qualitative Risk Assessment

### Environmental

Groundwater

Soil

Semi-volatile TPH ( $C_{10}$ - $C_{36}$ ). However, there is no on-site environment (soils) to consider. Ethylbenzene, arsenic, zinc and volatile and semi-volatile TPH.

It should be noted that the presence of chemicals at concentrations higher than the investigation levels does not indicate a risk; rather it indicates that potential exposures to these chemicals must be evaluated in greater detail, reflecting site-specific pathways of exposure (discussed further below) or a quantitative risk assessment.

## 8.3 Revised Site Conceptual Model

## 8.3.1 Potential Sources

## Primary

Based on the presence of semi-volatile hydrocarbon impact in groundwater beneath the Site, the following infrastructure at the Site could be a source of the identified impact:

- Spillage or leak of fuel from USTs, together with associated pipework and dispensing infrastructure;
- · Fresh and waste oil storage and associates pipework infrastructure in the workshop; and
- Seepage of hydrocarbon product from spills.

### Secondary

Potential secondary sources of impact are likely to exist at the Site in the form of:

- Hydrocarbon contaminated soil beneath the Site; and
- Although phase separated hydrocarbons (PSH) have not been found on-site, if present, it may be a source of hydrocarbon contamination to soils it contacts and an ongoing source of dissolved phase contamination to groundwater.

### **Off-Site**

No significant off-site sources of hydrocarbons were identified within a 100 m radius of the Site.

An interview was conducted with Mrs Shirley Bazley, Hon Curator at The Old School Museum on 14 May 2009. She indicated that a service station was located opposite the Site on the eastern side of Market Street. It was present in a photograph of the area taken in the 1930s and replaced by shops in the 1980s. Due to the south easterly groundwater flow direction, this is unlikely to be an off-site source of the identified hydrocarbon groundwater impact.

The service stations located on Merimbula Drive approximately 200 m and 350 m to the north west of the Site are unlikely to be potential off-site sources of hydrocarbon impact due to the low solubility and high retardation factor of heavy end hydrocarbons. The detection of semi-volatile TPH in the upgradient monitoring well (MW4) may indicate the contaminant source is site wide or off-site and upgradient.

No other potential off-site sources of hydrocarbon contamination were identified.

A graphical representation of potential hydrocarbon sources at the Site is shown in the Site Conceptual Model presented as **Figure 9**.

#### 8 Qualitative Risk Assessment

## 8.3.2 Nature and Extent of Impact

#### Soil

As discussed in **Section 7.1**, hydrocarbon impacts were not encountered in soils at depths of less than 1.5 mbgs (above the groundwater table) on-site during the current investigation. The Phase 2 ESA conducted by IT Environmental (2005b) identified hydrocarbon impacted soil (as TPH  $C_{10}$ - $C_{36}$ ) in soil borehole SB7 located along the western boundary of the Site at a depth of 0.5 mbgs. The shallow soil impact at SB7 may be a localised source of impact. Based on the results of the current investigation, this impact is considered adequately delineated.

#### Groundwater

As discussed in **Section 7.2**, dissolved phase hydrocarbon impacts (TPH  $C_{10}$ - $C_{36}$  and naphthalene) were encountered in all groundwater monitoring wells on-site. The Phase 2 ESA conducted by IT Environmental (2005b) identified low concentrations of TPH  $C_{10}$ - $C_{36}$  in MW4. Hydrocarbon impact was not found in the other monitoring wells during the IT Environmental assessment (2005b).

No PSH was reported in monitoring wells on the Site during the current investigation or the previous investigation by IT Environmental (2005b).

The current investigation has not delineated these impacts to the south east, the expected groundwater flow direction and hence impacts may extend off-site in this direction. Due to the low solubility and high retardation factor of heavy end hydrocarbons the migration of semi-volatile hydrocarbon impact off-site is expected to be slow.

### Fate and Transport

Based on the findings of the Post Phase 2 ESA, the potential pathways for the migration of the impacts detected at the Site appear to include:

- Vertical seepage of hydrocarbons, originating from surface spills and leaks, and from leaking tanks, pipelines and pumps, through the surface material into the underlying natural material and into the local groundwater system. The presence of impacted groundwater in wells on-site indicates that this may have occurred.
- Leaching of hydrocarbons present in the unsaturated zone through surface infiltration, leaking utilities or fluctuating water table.
- Lateral migration of impacted groundwater through the aquifer. The presence of impacted groundwater in monitoring wells MW1, MW2 and MW3 indicates that this may have occurred between the Phase 2 ESA conducted by IT Environmental in 2005 and the current investigation conducted in May 2009.
- Migration of impacted perched water through utility trenches. Given the shallow depth to groundwater in the aquifer (<1.5 mbgs), there is potential for service trenches to act as preferred pathways for migration of contaminants.
- Attack / permeation of hydrocarbons into underground utilities i.e. through PCV or PE mains water pipes.

The fate of hydrocarbon plumes on and off-site given an assumed south easterly groundwater flow direction, estimated aquifer seepage velocity and the identified potential pathways is summarised as follows:

Hydrocarbon impacted groundwater is present beneath the Site.

### 8 Qualitative Risk Assessment

- The inferred flow direction of the aquifer beneath this area is to the south east at a velocity of between 0.1 and 195 m/yr.
- The hydrocarbon impact is delineated on-site, however is not delineated off-site to the south-east in the inferred direction of groundwater flow. Given the hydrocarbon concentrations reported in well MW1 and MW2, located less than 10 m from the south eastern Site boundary, there is potential that the plume has migrated off-site across this boundary and will continue to do so in the future.

## 8.4 Potential Receptors and Exposure Pathways

Potential human and environmental receptors and pathways for the contaminants of concern identified within soil and groundwater on-site include:

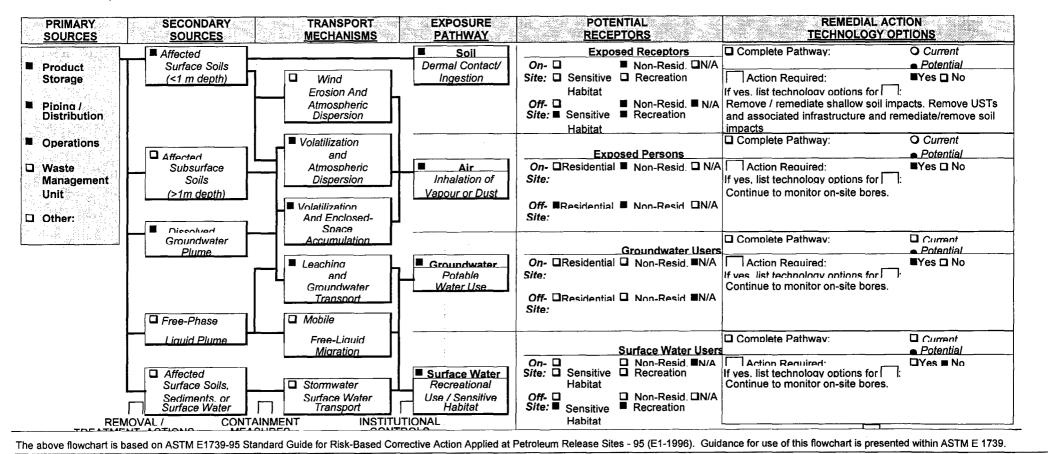
- Inhalation of volatile COPC by future occupants of the Site and existing occupants of the residential and commercial properties adjacent to the Site. However, this potential would be mitigated by the low volatile concentrations. Soil gas assessments have not been undertaken to quantify the potential and are not recommended;
- Potential current and future uses of the aquifer for drinking water (ingestion and dermal contact), irrigation (inhalation, ingestion and dermal contact) or recreational purposes (inhalation, ingestion and dermal contact) on-site and down hydraulic gradient of the Site. The Site is located within an area of reticulated water supply and it is not considered that groundwater would be extracted for drinking water purposes. No registered bores were located within a 500 m radius of the Site;
- Contact with soils (ingestion and dermal contact) and inhalation of volatile contaminants by workers conducting sub-surface excavation or entering service trenches or pits in on-site or off-site areas is possible. Soils data from the IT Environmental investigation (2005b) indicates that concentrations of TPH (C<sub>10</sub>-C<sub>36</sub>) exceeded the adopted SAC.
- Ecosystem receptors of groundwater discharge would include Merimbula Lake, located approximately 40 m hydraulically downgradient of the Site to the south east. However, the low solubility and high retardation factor of heavy end hydrocarbons would mitigate this somewhat.

### 8.5 Exposure Evaluation

An Exposure Evaluation Flowchart (EEF) that assesses the relationship between the source area of COPC, potential migration pathways and the identified potential receptors is presented below.

	POST PHASE 2 ENVIRONMENTAL SITE ASSESSMENT MOBIL SERVICE STATION MERIMBULA (NO1063) 27 MARKET STREET, MERIMBULA NSW 2548
Section 8	Qualitative Risk Assessment

### Table 8-1 Exposure Evaluation Flowchart



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### 8.6 Tier 1 Outcomes

### 8.6.1 Soil

For the purpose of this qualitative risk assessment, the SAC have been referenced with consideration of the beneficial uses of the Site in **Table 7**.

A comparison of soil analytical data and the SAC is presented in **Tables 9a** to **9c** and discussed in **Section 7.1**. Soil impacts were limited to one shallow soil sample collected from SB7 during the IT Environmental investigation (2005b), which contained a semi-volatile TPH ( $C_{10}$ - $C_{36}$ ) concentration that exceeded the SAC. No exceedances of the SAC were noted in nearby soil samples collected from SB6, MW7 or MW1, indicating that the exceedance of the SAC in SB7 maybe a localised impact. The SAC concentration for TPH  $C_{10}$ - $C_{36}$  is taken from the NSW EPA *Guidelines for Assessing Service Station Sites* (1995), which are intended for assessment of sensitive land uses. The guideline is therefore conservative for the current and proposed land use.

### 8.6.2 Groundwater

For the purpose of this qualitative risk assessment, the GAC have been referenced with consideration of the beneficial uses of groundwater beneath the Site in **Table 8**. It is noted that the Site is located within the Merimbula township, where there is a reticulated water supply, hence it is not expected that groundwater would be extracted for domestic use on-site or off-site.

A comparison of groundwater analytical data and GAC is presented in **Tables 10a** to **10c** and discussed in **Section 7.2**. It should be noted that there are no available guidelines for TPH in groundwater. There were positive results reported for TPH  $C_{10}$ - $C_{36}$ , which indicates that the dissolved phase contamination present in the groundwater is predominately non-volatile. It is not known what concentrations are migrating off-site as there no off-site wells. There are exceedances of the adopted environmental guidelines for ANZECC 2000 (95% protection) for marine environments for ethylbenzene, zinc and arsenic.

With the exception of arsenic, all of the positive concentrations reported were below the adopted human health guidelines (**Table 8**) where available. The exceedances of arsenic in groundwater may be attributable to background concentrations, and as the groundwater is not being extracted for drinking water purposes, the potential risks to human health are considered to be low and acceptable.

### 8.6.3 Human Health Risk Assessment

The conservative nature of the SAC guideline concentration for TPH  $C_{10}$ - $C_{36}$ , and the concrete sealed surface of the Site indicate that risks to human health are considered to be low and acceptable and no further quantification is required.

There were exceedances of the adopted investigation levels for groundwater for human health for arsenic. It is noted that there was positive TPH  $C_{10}$ - $C_{36}$  concentrations in all on-site wells, however, there is no human health screening guideline established for TPH. The arsenic investigation level is based on drinking water quality and as the Site is located within an area of reticulated water supply, it is not considered that groundwater would be extracted for domestic purposes, hence the potential risks to human health are considered to be low and acceptable.

### 8.6.4 Environmental Risk Assessment

As there are no on-site environments and the Site is sealed with concrete, the risks to the environment are considered to be low and acceptable and no further quantification is required.



### 8 Qualitative Risk Assessment

There were exceedances of the adopted environmental investigation levels for groundwater for ethylbenzene, arsenic and zinc. It is noted that there were positive TPH  $C_{10}$ - $C_{36}$  concentrations reported in all on-site wells, however, there is no environmental screening guideline established for TPH. The concentrations that may be migrating off-site are unknown as there are no off-site downgradient monitoring wells.

## **Risk Management Options**

Risk management options were evaluated based on the findings of the QRA and the Exposure Evaluation Flowchart (**Table 8-1** above) with the aim of mitigating the potential risks to the identified potential receptors. The recommended risk management options are detailed in the following table.

Table 9-1	Risk Management Options
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Source Media	Transport Mechanism	Exposure Pathway	Actual or Potential	Management Options	
Hydrocarbon impacted soils	Contact with and volatilisation from contaminated soils if excavations are undertaken	Dermal contact and inhalation of vapours from contaminated soils. Attack / permeation of subsurface utilities, e.g. PVC / PE water mains.	Potential	Employ appropriate OH&S procedures to minimise dermal contact with contaminated soil and minimise exposure to vapours.	
Hydrocarbon impacted groundwater	Contact with fill and impacted groundwater	Maintenance workers	Potential	Investigate potential for migration of dissolved phase hydrocarbons in service trenches running along Market Street, Monaro Street and Wonga Street. Ensure all sub-surface work has appropriate OH&S plan that addresses potential issues associated with contact with impacted groundwater and vapours.	



10

## **Conclusions and Third Party Reliance**

The results of this investigation indicate that the groundwater beneath the Site is impacted by petroleum hydrocarbons. Due to the semi-volatile nature of the hydrocarbons present in the groundwater, the likely source is the oil storage and infrastructure related to the workshop area. Given the direction and velocity of groundwater flow, dissolved phase impacts have the potential to reach the surface water receptor located approximately 40 m downgradient, however, the low solubility and high retardation factor of the semi-volatile hydrocarbon impact would mitigate this somewhat. Natural attenuation was not assessed during this investigation as a potential effective method of controlling these impacts. On-site UST and associated infrastructure are a potential source of groundwater impacts and should be removed during redevelopment. On-site residual soil impacts are likely to form a minor secondary source of groundwater impact and should be remediated or removed during infrastructure removal. The soil and groundwater concentrations do not pose a potential risk to human heath or the environment.

Although concentrations of ethylbenzene, arsenic and zinc in groundwater exceeded the acceptance criteria for commercial/industrial use, the lack of a potential risk to human health and the environment means that the Site is suitable for continued use as a service station or redevelopment for commercial or residential use.

This conclusion is provided strictly in accordance with and subject to the following limitations:

- c) This Report was prepared for Mobil Oil Australia Pty Ltd in accordance with the Acceptance Criteria.
- d) This Report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by URS for use of any part of this Report in any other context.
- e) This conclusion is based solely on the scope of work agreed between URS and Mobil Oil Australia Pty Ltd and described in **Section 1.2** ("Scope of Works") of this Report.
- f) This Report was prepared based on fieldwork undertaken between 13 June 2009 and 21 June 2009 and is based on the conditions encountered and information reviewed at the time of preparation. URS accepts no responsibility for any changes in site conditions that have occurred after this time.
- g) Where this Report indicates that information has been provided to URS by third parties, URS has made no independent verification of this information except as expressly stated in the Report.
- h) Only the chemicals specifically referred to in this Report have been tested for. URS makes no statement or representation as to the existence (or otherwise) of any chemicals other than those specifically referred to.
- i) No investigations have been undertaken into any off-site conditions, or whether any adjoining sites may have been impacted by contamination or other conditions originating from this site.
- j) Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations described in this Report. It is unlikely therefore that the results and estimations expressed in this Report will represent the extremes of conditions at any location removed from the specific points of sampling.
- k) This conclusion is based solely on the information and findings contained in this Report.
- Except as specifically stated above, URS makes no statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use.
- m) Use of the site for any purpose may require planning and other approvals and, in some cases, EPA and accredited site auditor approvals. URS offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environment works.



### **10 Conclusions and Third Party Reliance**

n) The ongoing use of the site or use of the site for a different purpose may require the owner/user to manage and/or remediate site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this Report.

## Third Party Use

In this Report a reference to:

- 1. a) Mobil means:
  - i. Mobil Oil Australia Pty Ltd ABN 88 004 052 984; or
  - ii. an Affiliate; and in this section of this Report;
  - b) Affiliate means:
    - i. a corporation owned beneficially or otherwise as to 50% of the voting shares by Mobil; or
    - ii. a related body corporate of Mobil or an Affiliate, provided that the term 'related body corporate' has the meaning ascribed in section 50 of the Corporations Act 2001 (Cth)

but does not include a corporation which has the benefit of this Third Party Use section as a purchaser, lessor or assignee of the Property

In this section of this Report a reference to the "Interested Party" means:

- 1. Where as at the date of this Report Mobil or an Affiliate is or has been the registered proprietor of the Property, the direct purchaser, if any, from Mobil or the Affiliate of the Property; or
- 2. Where as at the date of this report Mobil or an Affiliate is or has been the lessee of the Property, each of:
  - a) the lessor of the Property to Mobil or the Affiliate; and
  - b) the party who becomes the lessee of the Property as a result of Mobil or its Affiliate assigning its leasehold interest in the Property directly to that party, if any; or
- 3. Where this Report is to be submitted to a public or regulatory authority pursuant to a requirement under applicable planning or environmental controls, the authority, or
- 4. Where this Report is to be submitted to an independent environmental auditor, the auditor.

URS acknowledges that an Interested Party may be given a copy of this Report. URS consents to provision of this Report to an Interested Party on the following conditions:

- a) the Interested Party confirms that it is aware of and understands the scope of the URS engagement as described in this Report;
- b) the Interested Party acknowledges that:
  - i. in carrying out its investigations included in this Report, URS has acted on instructions provided by or on behalf of Mobil or an Affiliate;
  - ii. except as may be expressly stated in this Report, URS make no express or implied representations or warranties as to the suitability of the Property for any current or future use by the Interested Party;

### 10 Conclusions and Third Party Reliance

- iii. the information, comments, conclusions and opinions contained in this Report, and the accuracy or completeness of any information included in this Report, are subject to the limitations expressed elsewhere in this Report; and
- iv. except as expressly stated in this Report, URS makes no express or implied representations or warranties as to the professional advice included in this Report (including as to the completeness or accuracy of the information contained in this Report), all of which are hereby expressly negatived and excluded;
- c) Whilst URS does not admit that any action, liability or claim may exist or be available to any Interested Party, this Report is only available to an Interested Party on the basis that subject to any law the terms of which cannot be excluded or modified by agreement:
  - i. the maximum amount payable (if any) by URS to Interested Parties or any party claiming through an Interested Party in aggregate, whether in contract, tort or otherwise, in relation to claims, damages, liabilities, losses or expenses, under or in any way related to this Report or the services performed by URS to prepare the Report, shall be A\$2,000,000; and
  - ii. if there is more than one Interested Party, the maximum amount payable to any and all Interested Parties in total shall be **A\$2,000,000**, and

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# Tables

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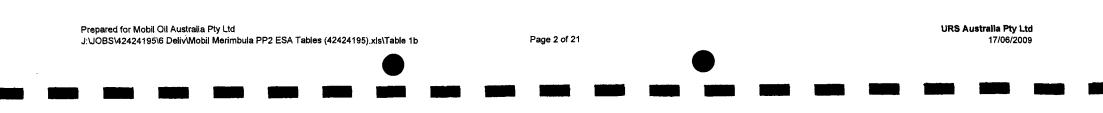
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# Table 1aCurrent Underground and Above Ground Storage TanksMobil Service Station Merimbula (NO1063)

Tank ID	Product		Capacity (L)	Year Installed	Tank Type	Status	Construction	Date and Result of Last Integrity Test
	Current	Historical						
T1	-	ULP	22,000	unknown	UST	present	single walled	unknown
T2	-	PULP	27,000	unknown	UST	present	single walled	unknown
T3	-	~ ULP	10,000	unknown	UST	present	single walled	unknown
T4	-	Diesel	10,000	unknown	UST	present	single walled	unknown
T7	-	Water	2,000	unknown	UST	present	single walled	unknown

### Table 1b Former Underground and Above Ground Storage Tanks Mobil Service Station Merimbula (NO1063)

Tank ID	Product	Capacity (L)	Year Installed	Tank Type	Status	Construction	Date and Reason for Decommissioning
T5	Diesel	10,000	unknown	UST	removed	single walled	unknown
T6	LPG	8,000	unknown	AST	removed	single walled	unknown

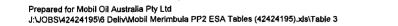


### Table 2 Historical Site Use Summary Mobil Service Station Merimbula (NO1063)

Date	Owner ID	Title Details	Information Source	Landuse / Activity	Buildings / Plant / Equipment	Earthworks	Adjacent Site Uses
prior to 1896	Crown		IT Environmental, 2005a - Historical Certificates of Title	Vacant	None	None	Unknown
1896- 1920	Armstrong Lockhart Munn, manufacturer	Conveyance BK 577 No.915	IT Environmental, 2005a - Historical Certificates of Title	Unknown	Unknown	Unknown	Unknown
1920- 1921	Randolph Cameron Munn, farmer	Conveyance BK 1185 No.324	IT Environmental, 2005a - Historical Certificates of Title	Unknown	Unknown	Unknown	Unknown
1921- 1938	Joseph William Twofold, gentlemen	Conveyance BK 1245 No.865	IT Environmental, 2005a - Historical Certificates of Title	Unknown	Unknown	Unknown	Unknown
1938- 1959	Willoughby Burnell Maunder, store keeper	Conveyance BK 1822 No.173 Aerial Photo Run 3 1940	IT Environmental, 2005a - Historical Aerial Photographs	Unknown	Sheds	Unknown	Roads to east and south, vacant land to the north and west
1959 <b>-</b> 1961	Vacuum Oil Company Proprietary Limited	Conveyance BK 2497 No.346	IT Environmental, 2005a - Historical Certificates of Title	Service station	one shed	Maybe some filling to level the Site during development	
1961- 1988	Vacuum Oil Company Proprietary Limited	Certificate of Title Volume 8237 Folio 66 Aerial Photo Run 11, 22/10/1980	IT Environmental, 2005a - Historical Certificates of Title and Aerial Photographs	Service station	Petroleum storage and distribution equipment - USTs, ASTs and pipelines	Maybe some filling to level the Site during development	Properties to the north, south beyond Monaro Street and east across Market Street appear to be commercial.
1988-date	Vacuum Oil Company Proprietary Limited	Auto Consol 8237-66 Aerial Photo Run 11, 22/2/1998 Aerial Photo Run 8, 6/3/2005	IT Environmental, 2005a - Historical Certificates of Title and Aerial Photographs Site Visit	Disused service station	Petroleum storage and distribution equipment - USTs, ASTs and pipelines	None	Properties to the north, east and south are commercial. To the west are residential and commercial properties.

### Table 3 Regional Hydrogeological Details Mobil Service Station Merimbula (NO1063)

Aquifer	Aquifer Name and Type	Top of Aquifer (mbgs)	Base of Aquifer (mbgs)	Thickness (m)	TDS (mg/L)	Hydraulic Conductivity	Expected Flow Direction	Discharge Point and Distance
Regional		Approximately 1 to 5	Unknown	Unknown		Based on sand aquifer, hydraulic conductivity is expected to be approximately 0.0173 to 17.28 m/day	East	Merimbula Lake



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# Table 4Registered Groundwater Bore Search Results SummaryMobil Service Station Merimbula (NO1063)

Bore ID	Public /	Use	Status	Direction	Distance	Topographically	Screened	Total Depth	SWL	TDS (mg/L)	Lithology
	Private			From Site	From Site	Downgradient	Depth				
GW057654	Private	Domestic	Unknown	North West	500 m	No	Unknown	15	Unknown	Unknown	Unknown
GW040590	Private	Unknown	Unknown	South east	400 m	No	Unknown	5.5	Unknown	Unknown	Sand
GW065554	Private	Domestic	Unknown	South east	500 m	No	6.1-6.7	6.7	4.2	Unknown	Unknown
GW040589	Private	Unknown	Unknown	South east	500 m	No	Unknown	4.9	Unknown	Unknown	Sand
GW105858	Unknown	Domestic	Unknown	South east	500 m	No	Unknown	Unknown	Unknown	Unknown	Unknown
GW040591	Private	Unknown	Unknown	South east	500 m	No	Unknown	2.5	Unknown	Unknown	Sand
GW056187	Private	Domestic	Unknown	South east	600 m	No	Unknown	3.1	Unknown	Unknown	Sand

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# Table 5Current and Historical Groundwater Quality Data – Field ParametersMobil Service Station Merimbula (NO1063)21 May 2009

Location	Date Measured	Total Well Depth	Top-of-Casing Elevation	Depth to Water	Depth to PSH	PSH Thickness	Groundwater Elevation	Corrected Groundwater Elevation	Well Head Condition Summary
		(mTOC)	(mAHD)	(mTOC)	(mTOC)	(m)	(mAHD)	(mAHD)	
MW1	15-Sep-05	3.63	2.37	1.83	-	0.00	0.54	0.54	•
	21-May-09	4	2.37	1.79	-	0.00	0.59	0.59	ОК
MW2	15-Sep-05	4.35	2.26	1.72	-	0.00	0.55	0.55	-
	21-May-09	4.06	2.26	1.67	-	0.00	0.59	0.59	OK
MW3	15-Sep-05	4.43	1.93	1.36	-	0.00	0.57	0.57	-
101003	21-May-09	4	1.93	1.29	-	0.00	0.65	0.65	OK
MW4	15-Sep-05	3.91	2.42	1.69	-	0.00	0.73	0.73	-
	21-May-09	3.9	2.42	1.55	-	0.00	0.87	0.87	OK
MW5	-	-	-	-	-	-	-	-	-
101000	21-May-09	4	2.02	1.26	-	0.00	0.76	0.76	OK
MW6	-	-	-	-	-	-	-	-	-
141.440	21-May-09	4	2.26	1.54	-	0.00	0.72	0.72	ОК
MW7	-	-	-	•	-	-	-	•	-
101 0 7	21-May-09	4.01	2.38	1.70	-	0.00	0.68	0.68	ОК

Notes:

Corrected groundwater elevation based on free product thickness multiplied by 0.78 shown

mAHD Metres above Australian Height Datum

mTOC Metres below top of casing

Information not available

### Table 6 Groundwater Purging Details Mobil Service Station Merimbula (NO1063) 21 May 2009

Location	Date Measured	Electrical Conductivity (μS/cm)	Estimated TDS# (mg/L)	Dissolved Oxygen (mg/L)	Field Redox Potential (mV)	Corrected Redox Potential^ (mV)	рН	Temperature (°C)	Comments
	15-Sep-05	961	625	1.4	-41	158.0	6.56	17.2	-
MW1	21-May-09	881	573	2.86	-9.0	190.0	6,3	20.90	brown, turbid
	15-Sep-05	427	278	1.57	-58	141.0	6.18	17.8	-
MW2	21-May-09	485	315	3.13	25.0	224.0	6.0	21.2	brown, turbid
	15-Sep-05	961	625	1	-41 ·	158.0	7	17	•
MW3	21-May-09	678	441	-	30	229.0	6	20	brown, turbid, no odour, dry after 22 L, dissolved oxygen not recorded
	15-Sep-05	1201	781	4.62	-13	186.0	6.75	15.7	hydrocarbon sheen on water, well purged dry after 8 L
MW4	21-May-09	747	486	3.67	-21.0	178.0	6.4	18.9	brown, turbid, purged dry after 10 L
	15-Sep-05	-	-	-	-	-	-	-	•
MW5	21-May-09	759	493	2.76	67.0	266.0	6.2	20.10	grey/black, turbid, hydrocarbon odour and slight sheen
	15-Sep-05	-	-	-	-	-	-	-	-
MW6	21-May-09	393	255	3.23	18.0	217.0	6.2	19.1	brown/black, turbid
MW7	15-Sep-05	-	-	-	-	-	-	-	-
IVI VV7	21-May-09	1337	869	3.51	-34	165.0	6.35	20.6	brown, turbid, purged dry after 5 L

Notes:

µS/cm Microseimen per centimetre

mg/L Milligrams per litre

mV Millivolts

"C Degrees celsius

# Estimated TDS based on electrical conductivity multiplied by 0.65

Redox potential relative to the standard hydrogen electrode. (Eh = Er + 199mv).

# Table 7Soil Acceptance CriteriaMobil Service Station Merimbula (NO1063)

Analyte	Units	LOR	NEPM HIL "D" <sup>1</sup>	NEPM HIL "F" <sup>2</sup>	NSW EPA Service Station Guidelines <sup>3</sup>	Adopted Soil Acceptance Criteria
Total Petroleum Hydrocarbons	s					
TPH (C <sub>6</sub> -C <sub>9</sub> Fraction)	mg/kg	10	-	-	65	65
Total TPH (C10-C36 Fraction)	mg/kg	calc	-	-	1000	1000
BTEX			·			
Benzene	mg/kg	0.2	-	-	1	1
Toluene	mg/kg	0.5	-	-	1.4	1.4
Ethylbenzene	mg/kg	0.5	-	-	3.1	3.1
Xylenes - Total	mg/kg	calc	-	-	14	14
Polycyclic Aromatic Hydrocar	bon					
Benzo(a)pyrene	mg/kg	0.5	1.	5	1	1
Total PAHs	mg/kg	calc	20	100	20	20
Phenols						
Phenol	mg/kg	0.5	8500	42500	•	8500
Metals						
Arsenic	mg/kg	5	100	500	-	100
Barium	mg/kg	10	300	300	-	300
Cadmium	mg/kg	1	20	100	-	20
Chromium	mg/kg	2	12%	60%	-	12%
Copper	mg/kg	5	1000	5000	-	1000
Lead	mg/kg	5	300	1500	300	300
Mercury (inorganic)	mg/kg	0.1	15	75	-	15
Nickel	mg/kg	5	600	3000	-	600
Vanadium	mg/kg	5	50	50	-	50
Zinc	mg/kg	5	7000	35000	-	7000

Legend:

<sup>1</sup> = **NEPM HIL 'D'** - National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure, 1999 (NEPM) - Health-Based Investigation Level (HIL) Level D - residential with minimal opportunities for soil access

<sup>2</sup> = NEPM HIL 'F' - National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure, 1999 (NEPM) - Health-Based Investigation Level (HIL) Level F - commercial/industrial

3 = NSW EPA Service Station Guideline - Guidelines for Assessing Service Station Sites (NSW EPA 1994), Threshold Concentrations for Sensitive Land Use - Soils

- = No Guideline

LOR = limit of reporting

mg/kg = milligrams per kilogram

calc= calculated

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### Table 8

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Groundwater Acceptance Criteria Mobil Service Station Merimbula (NO1063)

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Analyte	Units	LOR	ADWG	ANZECC 2000	Adopted Groundwater Acceptance Criteria
Total Petroleum Hydrocarb	ons				· · · · · · · · · · · · · · · · · · ·
C6 - C9 Fraction	µg/L	20	-	-	-
C10 - C14 Fraction	µg/L	50	-	-	-
C15 - C28 Fraction	µg/L	100	-	-	-
C29 - C36 Fraction	μg/L	50	-	-	-
Total TPH C10-C36	µg/L	calc	-	•	-
BTEX					
Benzene	µg/L	1	1	700	1
Toluene	μg/L	2	800	180	180
Ethylbenzene	µg/L	2	300	5	5
meta- & para-Xylene	µg/L	2	-	-	-
ortho-Xylene	µg/L	2	-	350	350
Total Xylenes	µg/L	calc	600	-	600
Polynuclear Aromatic Hydr	ocarbons				
Naphthalene	µg/L	1	-	70	70
Acenaphthylene	µg/L	1	-	-	-
Acenaphthene	µg/L	1	-	-	-
Fluorene	µg/L	1	-	-	-
Phenanthrene	μg/L	1	-	2	2
Anthracene	<u>μg/L</u>	1	-	0.4*	0.4*
Fluoranthene	µg/L	1	-	1.4	1.4
Pyrene	µg/L	1	-	-	-
Benz(a)anthracene	<u>μg/L</u>	1	-	-	-
Chrysene	<u>μg/L</u>	1	-	-	-
Benzo(b)fluoranthene	<u>μg/L</u>	1	-	-	-
Benzo(k)fluoranthene	<u>μց/L</u>	1			
Benzo(a)pyrene	<u>μg/L</u>	0.5	0.01*	0.2	0.01*
Indeno(1.2.3.cd)pyrene	μg/L	<u>0.5</u> 1	-	-	
Dibenz(a.h)anthracene	μg/L	1	-	-	
Benzo(g.h.i)perylene		1		-	-
Total PAHs	<u>µg/L</u>	calc		-	-
	µg/L	CalC		L,	· · · · · · · · · · · · · · · · · · ·
Phenolic Compounds	11		-	400	400
Phenol	<u>µg/L</u>	1	300	340	300
2-Chlorophenol	µg/L	1			
2-Methylphenol	µg/L_	1		-	
3- & 4-Methylphenol	µg/L_	2		2	
2-Nitrophenol	µg/L	1			2
2.4-Dimethylphenol	µg/L	1	-	2	2
2.4-Dichlorophenol	µg/L	1	200	120	120
2.6-Dichlorophenol	µg/L	1		34	34
4-Chloro-3-Methylphenol	µg/L	1		<u> </u>	
2.4.6-Trichlorophenol	µg/L	1	20	3	3
2.4.5-Trichlorophenol	µg/L_	1	<u> </u>	4	4
Pentachlorophenol	µg/L	. 2	-	22	22
Metals		r —			<b></b>
Arsenic	mg/L	0.001	0.007	0.0068	0.0068
Barium	mg/L	0.001	0.7	<u> </u>	0.7
Cadmium	mg/L	0.0001	0.002	0.0055	0.002
Chromium	mg/L	0.001	0.05	0.032	0.032
Copper	mg/L	0.001	2	0.0013	0.0013
Lead	mg/L	0.001	0.01	0.0044	0.0044
Mercury (inorganic)	mg/L	0.0001	0.001	0.0004	0.0004
Nickel	mg/L	0.001	0.02	0.07	0.02
Vanadium	mg/L	0.01	-	0.1	0.1
Zinc	mg/L	0,005	3	0,015	0.015

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# Table 8Groundwater Acceptance CriteriaMobil Service Station Merimbula (NO1063)

Analyte	Units	LOR	ADWG	ANZECC 2000	Adopted Groundwater Acceptance Criteria
Fumigants		<u></u>		<u> </u>	
2.2-Dichloropropane	µg/Ľ	5	-	-	-
1.2-Dichloropropane	µg/L	5	-	900	900
cis-1.3-Dichloropropylene	µg/L	5		1100	
trans-1.3-Dichloropropylene	µg/L	5	_	1100	1100
1.2-Dibromoethane (EDB)	µg/L	5	-	-	-
Halogenated Aliphatic Comp			· · ·		
Dichlorodifluoromethane	µg/L	50	-	-	-
Chloromethane	µg/L	50			_
Vinyl chloride	µg/L	50	0.3*	-	0.3*
Bromomethane	µg/L	50		-	-
Chloroethane	µg/L	50			
Trichlorofluoromethane	μg/L	50			
1.1-Dichloroethene	µg/L	5	30	700	30
Iodomethane	μg/L μg/L	5			
trans-1.2-Dichloroethene	_µg/∟ µg/L	5	0,06*	-	0.06*
1.1-Dichloroethane		5	0.08		
cis-1.2-Dichloroethene	µg/L	5	0.06*	250	250 0.06*
·····	_µg/L	5			
1.1.1-Trichloroethane	µg/L		<u> </u>	270	270
1.1-Dichloropropylene	µg/L	5	-		-
Carbon Tetrachloride	µg/L	5		240	3*
1.2-Dichloroethane	µg/L	· 5	3*	1900	3*
Trichloroethene	µg/L	5			
Dibromomethane	µg/L	5		-	-
1.1.2-Trichloroethane	µg/L	5	<u> </u>	1900	1900
1.3-Dichloropropane	µg/L	5		1100	1100
Tetrachloroethene	µg/L	5	50	-	50
1.1.1.2-Tetrachloroethane	µg/L	5		-	
trans-1.4-Dichloro-2-butene	µg/L	5	-	-	-
cis-1.4-Dichloro-2-butene	µg/L	5	-		-
1.1.2.2-Tetrachloroethane	_µg/L	5		400	400
1.2.3-Trichloropropane	µg/L	5	-	•	<u> </u>
Pentachloroethane	µg/L	5		80	80
1.2-Dibromo-3-chloropropane	µg/L	5		<u> </u>	
Hexachlorobutadiene	µg/L	5		-	-
Halogenated Aromatic Comp	ounds				
Chlorobenzene	µg/L	5	300	55	55
Bromobenzene	µg/L	5	-	-	-
2-Chlorotoluene	µg/L	5	-	-	-
4-Chlorotoluene	µg/L	5	-	-	-
1.3-Dichlorobenzene	µg/L	5	-	260	260
1.4-Dichlorobenzene	μg/L	5	-	60	60
1.2-Dichlorobenzene	µg/L	5	-	160	160
1.2.4-Trichlorobenzene	µg/L	5	-	80	80
1.2.3-Trichlorobenzene	µg/L	5		3*	3*
Trihalomethanes					
Chloroform	µg/L	5	-	370	370
Bromodichloromethane	µg/L	5	-	-	-
Dibromochloromethane	µg/L	5	-	-	-
Bromoform	μg/L	5	-	-	-

### Legend:

Australian Drinking Water Guidelines - Health Guideline values

ANZECC/ARMCANZ 2000 Trigger values for marine ecosystems - Level of protection 95% species

mg/L = milligrams per litre - = No Guideline

µg/L = micrograms per litre LOR = Limit of Reporting

calc = calculated concentration therefore no LOR is available

\* = LOR is greater than adopted guideline

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### Table 9a Soil Analytical Results - TPH, BTEX and Lead Mobil Service Station Merimbula (NO1063) 13 May 2009

Location		MV	V5		M	N6	M	N7
Sample ID	MW5_0.5-0.6	QC100_13/05/09	QC200	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6	MW7_1.0-1.2
Sample Date	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009
Sample Type	PS	FD '	FT	PS	PS	PS	PS	PS
PID Reading (ppm)	0.6			6.4	0.2	0.1	14.6	0.4

			Adopted Soil								
Analyte	Units	LOR	Acceptance Criteria								
Total Petroleum Hydrocarbons											
C6 - C9 Fraction	mg/kg	10	65	<10	<10	<5	<10	<10	<10	<10	<10
C10 - C14 Fraction	mg/kg	50	-	<50	<50	<10	<50	<50	<50	<50	<50
C15 - C28 Fraction	mg/kg	100	-	<100	<100	20	<100	<100	<100	<100	<100
C29 - C36 Fraction	mg/kg	100	-	<100	<100	<20	<100	<100	<100	<100	<100
Total TPH C10-C36	mg/kg	calc	1000	ND	ND	20	ND	ND	ND	ND	ND
BTEX			<b>--</b>								
Benzene	mg/kg	0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	1,4	<0.5	<0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	3,1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	< 0.5	<0.5
meta- & para-Xylene	mg/kg	0.5	-	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Total xylene	mg/kg	calc	14	ND	ND	<3	ND	ND	ND	ND	ND
Metals											
Lead	mg/kg	5	1500	9	6	8.3	<5	205	<5	203	<5
Moisture Content			· · · · · · · · · · · · · · · · · · ·								
Moisture Content (dried @ 103°C)	%	1	-	12.1	12.1	21	13.5	22.5	12.5	18.4	7.6

Legend:								
Exceeds the adopted acceptance criteria (Table 7)								
mg/kg = milligrams per kilogram	ppm ≈ parts per million							
LOR = limit of reporting	PS = primary sample							
- = no adopted SAC available	FD = field duplicate							
ND = not detected	FT = field triplicate							
calc = calculated	= not analysed							

### Table 9b Soil Analytical Results - PAHs and Phenols Mobil Service Station Merimbula (NO1063) 13 May 2009

Location		MV	/5		M\	V6	M	N7
Sample ID	MW5_0.5-0.6	QC100_13/05/09	QC200	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1,2	MW7_0.5-0.6	MW7_1.0-1.2
Sample Date	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009
Sample Type	PS	FD	FT	PS	PS	PS	PS	PS
PID Reading (ppm)	0,6			6.4	0.2	0.1	14.6	0.4

A	1 Inite		Adopted Soil								
Analyte	Units	LOR	Acceptance Criteria	<u> </u>	· · · · · · · · · · · · · · · · · · ·			·			
Polynuclear Aromatic Hydrocarbo											
Naphthalene	mg/kg	0.5	<del>_</del>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5	•	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0,5	•	<0.5	<0.5	<0.5	<0.5	<0.5	<0,5	<0.5	<0.5
Anthracene	mg/kg	0.5	<u>-</u>	<0.5	<0,5	<0,5	<0.5	<0.5	<0.5	< 0.5	<0.5
Fluoranthene	mg/kg	0.5		< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5	-	<0.5	<0,5	<0.5	<0,5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	. <0.5	<0.5	<0.5
Benzo(b)fluoranthene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	< 0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5	-	< 0.5	<0.5	~	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5	1	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5
Dibenz(a.h)anthracene	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total PAHs	mg/kg	calc	20	ND	ND	ND	ND	ND	ND	ND	ND
Phenolic Compounds				:							
Phenol	mg/kg	0,5	8500	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5
2-Chlorophenol	mg/kg	0.5	-	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0,5	<0.5
2-Methylphenol	mg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	mg/kg	1		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	mg/kg	0.5	-	< 0.5	< 0.5		< 0.5	<0.5	< 0.5	<0.5	<0.5
2.4-Dimethylphenol	ma/ka	0.5		< 0.5	<0,5		< 0.5	<0.5	< 0.5	<0,5	<0.5
2.4-Dichlorophenol	ma/kg	0.5	- 1	<0.5	<0.5		<0.5	<0.5	<0.5	< 0.5	<0.5
2.6-Dichlorophenol	mg/kg	0.5	-	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0,5	<0.5
4-Chloro-3-Methylphenol	mg/kg	0.5	-	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	ma/ka	0.5	-	<0,5	<0,5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	mg/kg	0.5		< 0.5	<0.5		<0.5	<0.5	< 0.5	<0.5	<0.5
Pentachlorophenol	mg/kg	2	•	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0

#### Legend:

Exceeds the adopted acceptance criteria (Table 7)						
mg/kg = milligrams per kilogram	ppm = parts per million					
LOR = limit of reporting	PS = primary sample					
- = no adopted SAC available	FD = field duplicate					
ND = not detected	FT = field triplicate					
calc = calculated	= not analysed					

Prepared for Mobil Oll Australia Pty Ltd J:\JOBS\42424195\6 Deliv\Mobil Merimbula PP2 ESA Tables (42424195).xls\Table 9b

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Table 9c Soil Analytical Results - Metals and VCHs Mobil Service Station Merimbula (NO1063) 13 May 2009

Location	ľ	N	W5	M	N6	MW7		
Sample ID	MW5_0.5	0.6 QC100_13/05/09	QC200	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6	MW7_1.0-1.2
Sample Date	13/05/20	9 13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009
Sample Type	PS	FD	FT	PS	PS	PS	PS	PS .
PID Reading (ppm)	0.6			6.4	0.2	0.1	14.6	0.4

Analyte	Units	LOR	Adopted Soil Acceptance Criteria								
Metals											
Arsenic	mg/kg	5	100	<5	<5	<2	<5	<5	<5	<5	<5
Barium	mg/kg	10	300	10	10	10	<10	90	<10	120	10
Cadmium	mg/kg	1	20	<1	<1	<2	<1	1	<1	1	<1
Chromium	mg/kg	2	12%	<2	<2	<2	<2	14	<2	8	3
Copper	mg/kg	5	1000	<5	<5	<2	<5	69	<5	40	<5
Lead	mg/kg	5	300	9	6	8.3	<5	205	<5	203	<5
Mercury	mg/kg	0.1	15	<0.1	<0.1	0.01	<0.1	<0.1	<0.1	0.1	<0.1
Nickel	mg/kg	2	600	<2	<2	<2	<2	14	<2	4	<2
Vanadium	mg/kg	5	50	<5	<5	<2	<5	<5	<5	8	<5
Zinc	mg/kg	5	7000	26	19	25	<5	452	<5	266	8
Fumigants											
2.2-Dichloropropane	mg/kg	0.5	-	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	mg/kg	0,5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	mg/kg	0,5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	mg/kg	0,5	-	<0,5	<0,5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Halogenated Aliphatic Compound	ds										
Dichlorodifluoromethane	mg/kg	5	-	<5	<5		<5	<5	<5	<5	<5
Chloromethane	mg/kg	5	-	<5	<5		<5	<5	<5	<5	<5
Vinyl chloride	mg/kg	5	-	<5	<5	<1	<5	<5	<5	<5	<5
Bromomethane	mg/kg	5	-	<5	<5		<5	<5	<5	<5	<5
Chloroethane	mg/kg	5	-	<5	<5	<1	<5	<5	<5	<5	<5
Trichlorofluoromethane	mg/kg	5	-	<5	<5	<1	<5	<5	<5	<5	<5
1.1-Dichloroethene	mg/kg	0,5	- 1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	< 0.5	<0.5
lodomethane	mg/kg	0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	mg/kg	0.5	-	<0.5	<0,5	<1	<0.5	<0.5	<0.5	<0.5	<0,5
cis-1.2-Dichloroethene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	mg/kg	0.5	-	<0.5	< 0.5	<1	<0.5	< 0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	mg/kg	0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	mg/kg	0,5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	mg/kg	0.5	_	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5	-	<0.5	<0.5	<1	< 0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	mg/kg	0.5	-	<0.5	<0.5	_	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	mg/kg	0.5	-	<0.5	<0.5	1	< 0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0,5	<0.5	<0.5

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### Table 9c Soll Analytical Results - Metals and VCHs Mobil Service Station Merimbula (NO1063) 13 May 2009

Location		MV	/5		MV	N6	MV	V7
Sample ID	MW5_0.5-0.6	QC100_13/05/09	QC200	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6	MW7_1.0-1.2
Sample Date	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009	13/05/2009
Sample Type	PS	FD	FT	PS	PS	PS	PS	PS
PID Reading (ppm)	0.6			6.4	0.2	0.1	14.6	0.4

			Adopted Soil								
Analyte	Units	LOR	Acceptance Criteria								
1.2.3-Trichloropropane	mg/kg	0.5	-	<0.5	<0.5	- 1	<0.5	<0.5	<0,5	<0,5	<0.5
Pentachloroethane	mg/kg	0.5	-	<0.5	<0,5	<1	<0.5	<0.5	<0.5	<0,5	<0.5
1.2-Dibromo-3-chloropropane	mg/kg	0.5	-	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	< 0.5	<0,5	<0.5
Halogenated Aromatic Compound	8										
Chlorobenzene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	mg/kg	0.5	-	<0.5	<0.5		<0.5	<0.5	< 0.5	<0.5	<0.5
2-Chlorotoluene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
4-Chlorotoluene	mg/kg	0.5	-	<0.5	< 0.5	<1	< 0.5	<0.5	< 0.5	<0.5	< 0.5
1.3-Dichlorobenzene	mg/kg	0.5	-	<0.5	< 0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
1.4-Dichlorobenzene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
1.2-Dichlorobenzene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	mg/kg	0.5	-	<0.5	< 0.5	<1	<0.5	<0.5	< 0.5	<0.5	<0.5
Trihalomethanes											
Chloroform	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	mg/kg	0.5	-	<0.5	< 0.5	<1	<0.5	<0.5	<0.5	< 0.5	<0.5
Dibromochloromethane	mg/kg	0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	mg/kg	0.5	<u> </u>	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5

#### Legend:

Exceeds the adopted acceptance criteria (Table 7)							
mg/kg = milligrams per kilogram	ppm = parts per million						
LOR = limit of reporting	PS = primary sample						
- = no adopted SAC available	FD = field duplicate						
ND = not detected	FT = field triplicate						
calc = calculated	= not analysed						



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Table 10aGroundwater Analytical Results - TPH, BTEX and LeadMobil Service Station Merimbula (NO1063)21 May 2009

Sample ID	MW1	MW2	MW3	MW4	MW5	QC100	QC200	MW6	MW7
Sample Date	21/05/200	9 21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009
Sample Type	PS	PS	PS	PS	PS	FD	FT	PS	PS

			Adopted Groundwater									
Analyte	Units	LOR	Acceptance Criteria									
Total Petroleum Hydrocarbons				•								
C6 - C9 Fraction	µg/L	20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10 - C14 Fraction	µg/L	50	-	<50	<50	<50	60	<50	<50	88	<50	260
C15 - C28 Fraction	µg/L	100	-	800	200	300	600	200	200	303	400	2400
C29 - C36 Fraction	µg/L	50	-	200	<50	<50	140	140	130	<100	140	450
Total TPH C10-C36	µg/L	calc	-	1000	200	300	800	340	330	391	540	3110
BTEX				L.								
Benzene	µg/L	1	1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1
Toluene	μg/L	2	180	<5	<5	<5	<5	<5	<5	<1	<5	<5
Ethylbenzene	µg/L	2	5	<2	<2	<2	<2	<2	<2	<1	<2	10
meta- & para-Xylene	µg/L	2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
ortho-Xylene	µg/L	2	350	<2	<2	<2	<2	<2	<2	<1	<2	<2
Total xylenes	µg/L	calc	600	ND								
Metais					•							
Lead	mg/L	0.001	0.0044	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001

Legend:

Exceeds the adopted acceptance criteria	(Table 8)
mg/L = milligrams per litre	PS = primary sample
µg/L = micrograms per litre	FD = field duplicate
LOR = Limit of Reporting	FT = field triplicate
calc = calculated concentration therefore no	ND = Not Detected
* = LOR is greater than adopted guideline	- = no GAC acailable

### Table 10b Groundwater Analytical Results - PAHs and Phenols Mobil Service Station Merimbula (NO1063) 21 May 2009

Sample ID	MW1	MW2	MW3	MW4	MW5	QC100	QC200	MW6	MW7
Sample Date	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009
Sample Type	PS	PS	PS	PS	PS	FD	FT	PS	PS

			Adopted Groundwater									
Analyte	Units	LOR	Acceptance Criteria									
Polynuclear Aromatic Hydrocar	ons											
Naphthalene	µg/L	1	70	<1.0	<1.0	<1.0	1.4	2.6	1.8	<1.0	1.2	4.2
Acenaphthylene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	µg/L	1	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	µg/L	1	0.4*	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	µg/L	1	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1,0	<1.0	<1.0
Pyrene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0
Benzo(k)fluoranthene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	~2.0	<1.0	<1.0
Benzo(a)pyrene	µg/L	0.5	0.01*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total PAHs	µg/L	calc	-	ND	ND	ND	1.4	2.6	1.8	ND	1.2	4.2
Phenolic Compounds												
Phenol	µg/L	1	400	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
2-Chlorophenol	µg/L	1	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
2-Methylphenol	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
3- & 4-Methylphenol	µg/L	2	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0
2-Nitrophenol	µg/L	1	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
2.4-Dimethylphenol	µg/L	1	2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
2.4-Dichlorophenol	µg/L	1	120	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
2.6-Dichlorophenol	µg/L	1	34	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
4-Chloro-3-Methylphenol	µg/L	1	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
2.4.6-Trichlorophenol	µg/L	1	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0
2.4.5-Trichlorophenol	µg/L	1	4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0
Pentachlorophenol	µg/L	2	22	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<30	<2.0	<2.0

Legend:

# Exceeds the adopted acceptance criteria (Table 8) mg/L = milligrams per litre PS = primary sample µg/L = micrograms per litre FD = field duplicate LOR = Limit of Reporting FT = field triplicate calc = calculated concentration therefore no ND = Not Detected

\* = LOR is greater than adopted guideline - = no GAC acailable

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J:\JOBS\42424195\6 Deliv\Mobil Merimbula PP2 ESA Tables (42424195).xls\Table 10b

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Table 10c Groundwater Analytical Results - Metals and VCHs Mobil Service Station Merimbula (NO1063) 21 May 2009

Sample ID MW1	MW2	MW3	IVI V V4	MW5	QC100	QC200	MW6	MW7
Sample Date 21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	
Sample Type PS	PS	PS	PS	PS	FD	FT	PS	PS

Analyte	Units	LOR	Adopted Groundwater Acceptance Criteria									
Metals	Tours	LUK	Acceptance Citteria									
Arsenic	ma/L	0.001	0.0068	0.028	0.009	0.014	0.023	0.003	0.003	<0.005	0.01	0.002
the second se	mg/L	0.001	0.7	0.054	0.005	0.022	0.028	0.015	0.014	0.015	0.014	0.019
Barium	ma/L	0.0001	0.002	<0.0001	<0.0001	< 0.0001	0.0002	<0.0001	< 0.0001	< 0.005	< 0.0001	< 0.0001
Cadmium	mg/L	0.001	0.032	0.002	0.005	0.005	0.003	0.002	0.002	< 0.005	0.006	<0,005
Chromium	mg/L	0.001	0.032	<0.002	<0.000	<0.000	< 0.000	<0.001	<0.001	<0.005	< 0.001	<0.001
Copper		0.001	0.0044	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	< 0.001	< 0.001
Lead	mg/L		0.0044	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	< 0.0001
Mercury	mg/L	0.0001	0.004	<0.001	<0.0001	0.001	0.001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Nickel	mg/L	0.001		<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.005	0.02	<0.01
Vanadium	mg/L	0.01	0.1				0.67	0.012	0.015	0.012	0.022	0.026
Zinc	mg/L	0.005	0.015	0.016	0.014	0.218	0.67	0.012	0.015	0.012	0.022	0.020
Fumigants					· · · · · ·							~5
2.2-Dichloropropane	µg/L	5	-	<5	<5	<5	<5	<5	<5 <5	<5	<5 <5	<5 <5
1.2-Dichloropropane	µg/L	5	900	<5	<5	<5	<5	<5			<5	<5
cis-1.3-Dichloropropylene	μg/L	5	1100	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	µg/L	5		<5	<5	<5	<5	<5	<5	<5	<5	<5
Halogenated Aliphatic Compou	nds								·			
Dichlorodifluoromethane	µg/L	50	-	<50	<50	<50	<50	<50	<50		<50	<50
Chloromethane	µg/L	50	-	<50	<50	<50	<50	<50	<50		<50	<50
Vinyl chloride	µg/L	50	0.3*	<50	<50	<50	<50	<50	<50	<5	<50	<50
Bromomethane	µg/L	50	-	<50	<50	<50	<50	<50	<50		<50	<50
Chloroethane	µg/L	50	-	<50	<50	<50	<50	<50	<50	<5	<50	<50
Trichlorofluoromethane	µg/L	50	-	<50	<50	<50	<50	<50	<50	<5	<50	<50
1.1-Dichloroethene	µg/L	5	30	<5	<5	<5	<5	<5	<5	<5	<5	<5
lodomethane	µg/L	5	-	<5	· <5	<5	<5	<5	<5		<5	<5
trans-1.2-Dichloroethene	µg/L	5	0.06*	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	µg/L	5	250	<5	· <5	<5	<5	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	µg/L	5	0.06*	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	µg/L	5	270	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.1-Dichloropropylene	µg/L	5	-	<5	<5	<5	<5	<5	<5		<5	<5
Carbon Tetrachloride	µg/L	5	3*	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2-Dichloroethane	ug/L	5	3*	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromomethane	ua/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	µg/L	5	1900	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.3-Dichloropropane	ug/L	5	1100	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	ug/L	5	50	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	ua/L	5	-	<5	<5	<5	<5	<5	<5		<5	<5
trans-1.4-Dichloro-2-butene	ug/L	5		<5	<5	<5	<5	<5	<5		<5	<5
cis-1.4-Dichloro-2-butene	ug/L	5	<u>-</u>	<5	<5	<5	<5	<5	<5		<5	<5
LIS- 1.4-DICHIOIO-Z-DULETIE	hâ,r	<u> </u>	<u> </u>		·			· · · · · · · · · · · · · · · · · · ·	<u> </u>	L	A	

Prepared for Mobil Oil Australia Pty Ltd J:\JOBS\42424195\6 Deliv\Mobil Merimbula PP2 ESA Tables (42424195).xis\Table 10c

### Table 10c Groundwater Analytical Results - Metals and VCHs Mobil Service Station Merimbula (NO1063) 21 May 2009

Sample ID	MW1	MW2	MW3	MW4	MW5	QC100	QC200	MW6	MW7
Sample Date	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009	21/05/2009
Sample Type	PS	PS	PS	PS	PS	FD	FT	PS	PS

Analyte	Units	LOR	Adopted Groundwater Acceptance Criteria									
1.1.2.2-Tetrachloroethane	µg/L	5	400	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	µg/L	5		<5	<5	<5	<5	<5	<5		<5	<5
Pentachloroethane	µg/L	5	80	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	µg/L	5	-	<5	<5	<5	<5	<5	<5		<5	<5
Hexachlorobutadiene	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Halogenated Aromatic Compour	nds											
Chlorobenzene	µg/L	5	55	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromobenzene	µg/L	5	-	<5	<5	<5	<5	<5	<5		<5	<5
2-Chlorotoluene	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-Chlorotoluene	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.3-Dichlorobenzene	µg/L	5	260	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.4-Dichlorobenzene	µg/L	5	60	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2-Dichlorobenzene	µg/L	5	160	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	µg/L	5	80	<5	<5	<5	<5	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	µg/L	5	3*	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trihalomethanes							_					
Chloroform	µg/L	5	370	<5	<5	<5	<5	<5	<5	<10	<5	<5
Bromodichloromethane	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	µg/L	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5

Legend:

 Exceeds the adopted acceptance criteria (Table 8)

 mg/L = milligrams per litre
 PS = primary sample

  $\mu g/L$  = micrograms per litre
 FD = field duplicate

 LOR = Limit of Reporting
 FT = field triplicate

 calc = calculated concentration therefore no ND = Not Detected
 \* = LOR is greater than adopted guideline
 - = no GAC acailable

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### Table 11a Solid Quality Control Sample Analytical Results Mobil Service Station Merimbula (NO1063)

Sample ID	TRIPBLANK_14/05/09
Sample Date	14/05/2009
Sample Type	Trip Blank

Analyte	Units	LOR	
Total Petroleum Hydrocarbons	S		
C6 - C9 Fraction	mg/kg	10	<10
C10 - C14 Fraction	mg/kg	50	<50
C15 - C28 Fraction	mg/kg	100	<100
C29 - C36 Fraction	mg/kg	100	<100
Total TPH C10-C36	mg/kg	calc	0
BTEX			
Benzene	mg/kg	0.2	< 0.2
Toluene	mg/kg	0.5	<0.5
Ethylbenzene	mg/kg	0.5	<0.5
meta- & para-Xylene	mg/kg	0.5	< 0.5
ortho-Xylene	mg/kg	0.5	< 0.5
Total xylene	mg/kg	calc	0

Legend:

mg/kg = milligrams per kilogram LOR = limit of reporting calc ≈ calculated

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# Table 11bLiquid Quality Control Sample Analytical ResultsMobil Service Station Merimbula (NO1063)

Sample ID		1	QC300 14/05/09	QC400 14/05/09	OCR1 21/05/09	OCE1 21/05/09	OCTB 21/05/09
Sample Date			14/05/2009	14/05/2009	21/05/2009	21/05/2009	13/05/2009
Sample Type			Rinsate Blank	Field Blank	Rinsate Blank	Field Blank	Trip Blank
Analyte	Units	LOR					
Total Petroleum Hydrocarbons		•					
C6 - C9 Fraction	µg/L	20	<20	<20	<20	<20	<20
C10 - C14 Fraction	µg/L	50	<50	<50	160	100	
C15 - C28 Fraction	µg/L	100	<100	<100	100	200	
C29 - C36 Fraction	µg/L	50	<50	<50	<50	<50	
Total TPH C10-C36	µg/L	calc	ND	ND	260	300	
BTEX							
Benzene	µg/L	1	<1	<1	<1	<1	<1
Toluene	µg/L	2	<5	<5	<5	<5	<5
Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2
meta- & para-Xylene	µg/L	2	<2	<2	<2	<2	<2
ortho-Xylene	µg/L	2	<2	<2	<2	<2	<2
Total xylenes	µg/L	calc	ND	ND	ND	ND	ND
Fumigants							
2.2-Dichloropropane	µg/L	5	<5	<5	<5	<5	
1.2-Dichloropropane	µg/L	5	<5	<5	<5	<5	
cis-1.3-Dichloropropylene	µg/L	5	<5	<5	<5	<5	
trans-1.3-Dichloropropylene	µg/L	5	<5	<5	<5	<5	
1.2-Dibromoethane (EDB)	µg/L	5	<5	<5			
Halogenated Aliphatic Compounds							
Dichlorodifluoromethane	µg/L	50	<50	<50	<50	<50	
Chloromethane	µg/L	50	<50	<50	<50	<50	
Vinyl chloride	µg/L	50	<50	<50	<50	<50	<u> </u>
Bromomethane	µg/L	50	<50	<50	<50	<50	
Chloroethane	µg/L	50	<50	<50	<50	<50	
Trichlorofluoromethane	µg/L	50	<50	<50	<50	<50	-
1.1-Dichloroethene	µg/L	5	<5	<5	<5	<5	
lodomethane	µg/L	5	<5	<5	<5	<5	<u> </u>
trans-1.2-Dichloroethene	µg/L	5	<5	<5	<5	<5	
1.1-Dichloroethane	µg/L	5	<5	<5	<5	<5	
cis-1.2-Dichloroethene	µg/L	5	<5	<5	<5	<5	
1.1.1-Trichloroethane	µg/L	5	<5	<5	<5	<5	
1.1-Dichloropropylene	µg/L	5	<5	<5	<5	<5	
Carbon Tetrachloride	µg/L	5	<5	<5	<5	<5	
1.2-Dichloroethane	µg/L	5	<5	<5	<5	<5	
Trichloroethene	µg/L	5	<5	<5	· <5·	<5	·
Dibromomethane	µg/L	5	<5	<5	<5	<5	<u> </u>
1.1.2-Trichloroethane	µg/L	5	<5	<5	<5	<5	
1.3-Dichloropropane	µg/L	5	<5	<5	<5	<5	
Tetrachloroethene	µg/L	5	<5	<5	<5	<5	
1.1.1.2-Tetrachloroethane	µg/L	5	<5	<5	<5	<5	
trans-1.4-Dichloro-2-butene	µg/L	5	<5	<5	<5	<5	
cis-1.4-Dichloro-2-butene	µg/L_	5	<5	<5	<5	<5	
1.1.2.2-Tetrachloroethane	µg/L	5	<5	<5	<5	<5	
1.2.3-Trichloropropane	µg/L	5	<5	<5	<5	<5	<u> </u>
Pentachloroethane	<u>μg/L</u>	5	<5	<5	<5	<5	
1.2-Dibromo-3-chloropropane	<u>µg/L</u>	5	<5 <5	<5	<5	<5	
Hexachlorobutadiene Halogenated Aromatic Compounds	μg/L	5		<5	<5	<5	I
Chlorobenzene		5	<5	<5	<5	<5	
Bromobenzene	µg/L	5 5	<5	<5	<5	<5	
2-Chlorotoluene	µg/L µg/L	5 5	<5	<5	<5	<5 <5	
4-Chlorotoluene		5 5	<5 <5	<5 <5	<5 <5	<5 <5	
1.3-Dichlorobenzene	<u>µg/L</u>	5 5	< <u>5</u>		<5	<5 <5	
1.3-Dichlorobenzene	µg/L	5	<5 <5	<5 <5	<5	<5	<u> </u>
1.4-Dichlorobenzene	µg/L	5	<> <5	<5 <5	<5	<5 <5	
1.2-Dichlorobenzene	μg/L	5	<5 <5	<5 <5	<5	<5 <5	
1.2.3-Trichlorobenzene	<u>µg/L</u>				<5	<5	<u> </u>
	µg/L	5	<5	<5	1 5	L	<u> </u>

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### Table 11b

# Liquid Quality Control Sample Analytical Results

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Mobil Service Station Merimbula (NO1063)

Sample ID		Į	QC300_14/05/09	QC400_14/05/09	QCR1_21/05/09	QCF1_21/05/09	QCTB_21/05/0
Sample Date		[	14/05/2009	14/05/2009	21/05/2009	21/05/2009	13/05/2009
Sample Type		[	Rinsate Blank	Field Blank	Rinsate Blank	Field Blank	Trip Blank
Analyte	Units	LOR					
Trihalomethanes							
Chloroform	µg/L	5	<5	<5	<5	<5	
Bromodichloromethane	µg/L	5	<5	<5	<5	<5	
Dibromochloromethane	μg/L	5	<5	<5	<5	<5	
Bromoform	µg/L	5	<5	<5	<5	<5	
Phenolic Compounds	1 µ9/-1						
Phenol	µg/L	1	<1.0	<1.0	<1.0	<1.0	
2-Chlorophenol	µg/L	$-\frac{1}{1}$	<1.0	<1.0	<1.0	<1.0	
2-Methylphenol	µg/L	$-\frac{1}{1}$	<1.0	<1.0	<1.0	<1.0	
3- & 4-Methylphenol	µg/L	2	<2.0	<2.0	<2.0	<2.0	
2-Nitrophenol	µg/L	-1	<1.0	<1.0	<1.0	<1.0	
2.4-Dimethylphenol	ug/L		<1.0	<1.0	<1.0	<1.0	
2.4-Dichlorophenol	ug/L	$\frac{1}{1}$	<1.0	<1.0	<1.0	<1.0	
2.6-Dichlorophenol	µg/L	1	<1.0	<1.0	<1.0	<1.0	
4-Chloro-3-Methylphenol	μg/L	1	<1.0	<1.0	<1.0	<1.0	
2.4.6-Trichlorophenol	ug/L	1	<1.0	<1.0	<1.0	<1.0	
2.4.5-Trichlorophenol	μg/L	1	<1.0	<1.0	<1.0	<1.0	
Pentachlorophenol	μg/L	2	<2.0	<2.0	<2.0	<2.0	
Polynuclear Aromatic Hydroca							L
Naphthalene	µg/L	1	<1.0	<1.0	3.6	2.3	
Acenaphthylene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Fluorene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	_
Anthracene	ug/L	1	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Pyrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Benz(a)anthracene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Chrysene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Benzo(b)fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Benzo(g.h.i)perylene	µg/L	1	<1.0	<1.0	<1.0	<1.0	
Total PAHs	µg/L	calc	ND	ND	3.6	2.3	·
Metals							
Arsenic	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	
Barium	mg/L	0.001	<0.001	< 0.001	<0.001	<0.001	
Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	—
Chromium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	
Copper	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	
Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Nickel	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	
Vanadium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	mg/L	0.005	<0.005	<0.005	<0.005	< 0.005	·

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Legend:

mg/L = milligrams per litre

µg/L = micrograms per litre

LOR = Limit of Reporting

calc = calculated concentration therefore no LOR is available

ND = Not Detected

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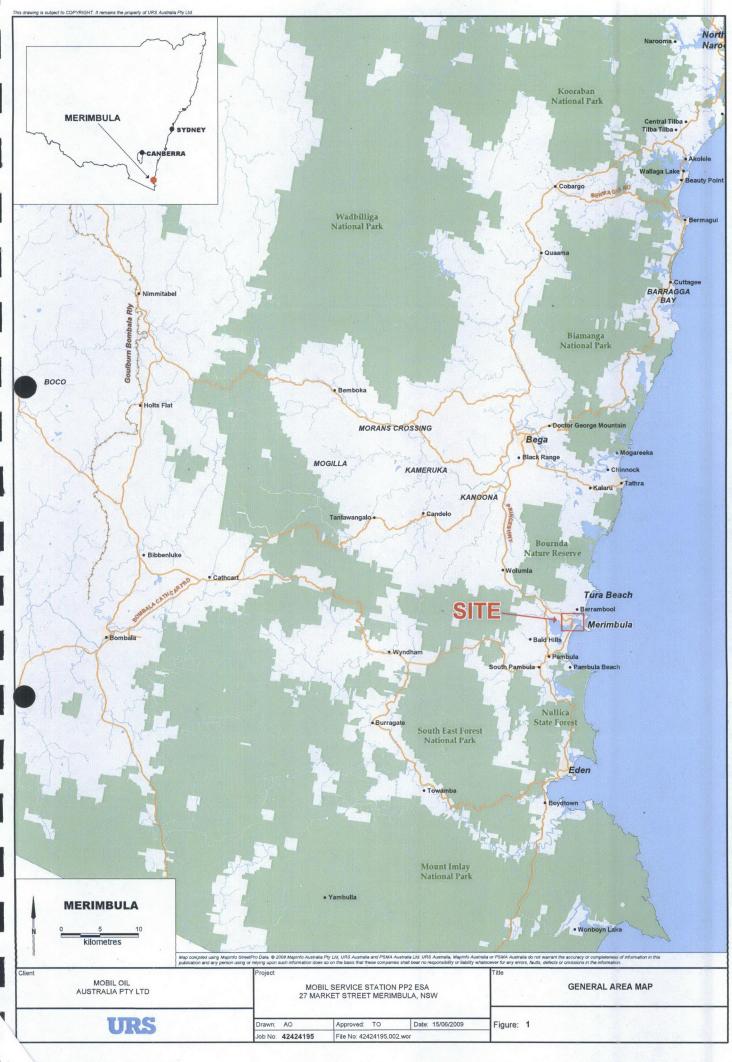
URS

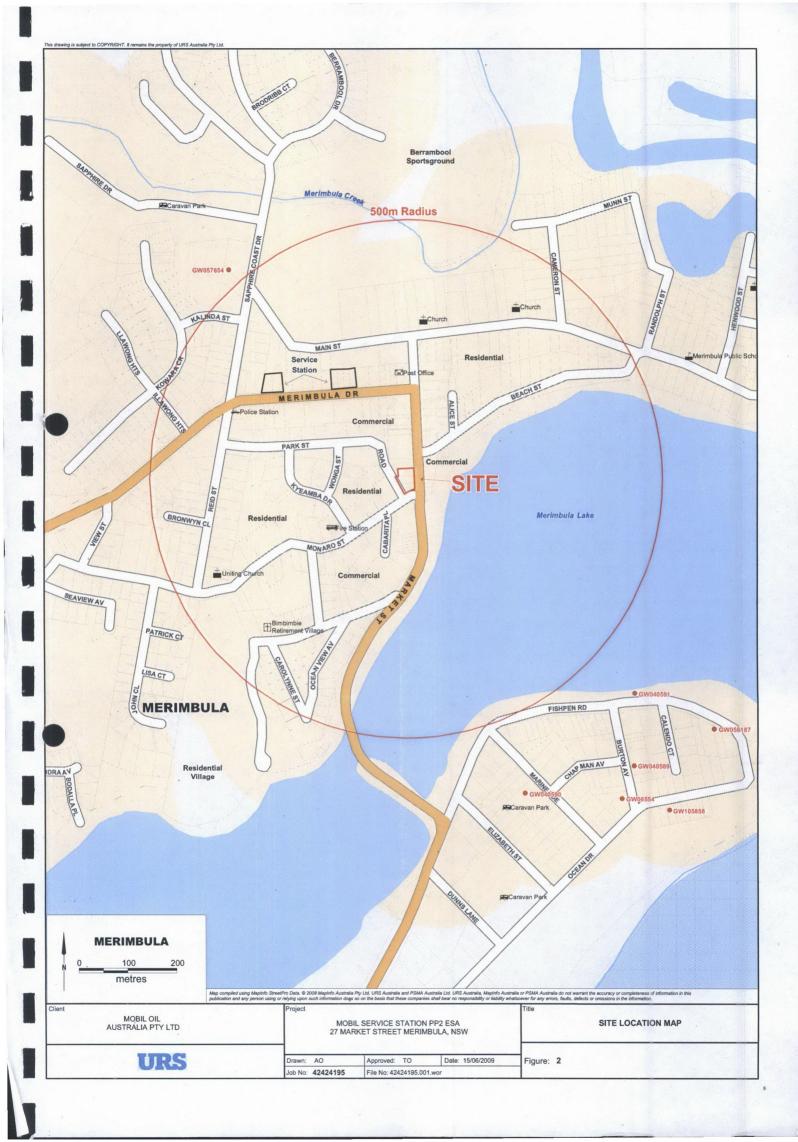
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# Figures

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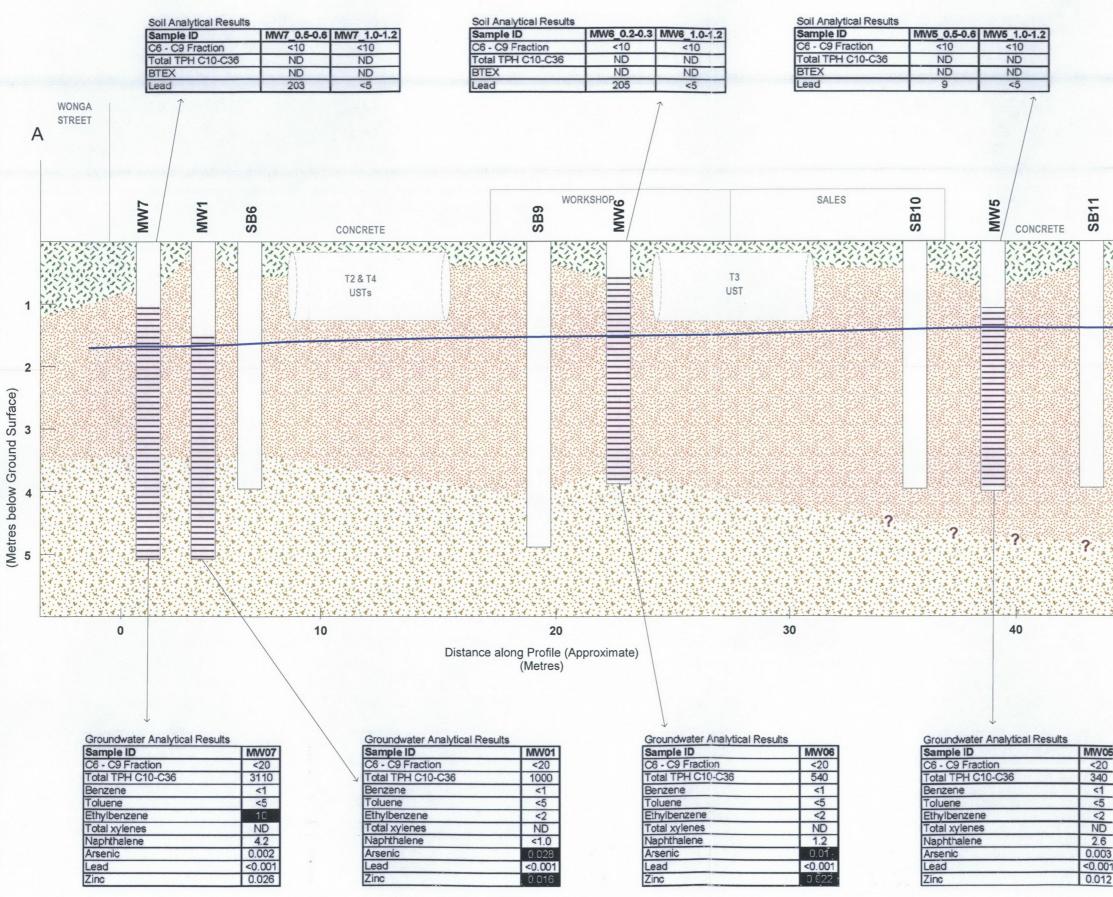






LEGEND: Monitoring Well Location (IT Environment Monitoring Well Location (URS) Soil Bore Location Electricity COVerhead Electricity Cable Sewer Telstra Underground Telstra Cable WWW Water Groundwater Flow Direction Underground Storage Tanks Site Boundary Site Boundary Weld every state is taken by URS be ensure the accuracy of the services or utilised Site Boundary Site Boundary Mobile Service To Date: 17/06/20 Job No.: 42424195 File No.: 42424195.003.m Client MOBIL OIL AUSTRALIA Project MOBIL SERVICE STATION PP2 ESA 27 MARKET STREET MERIMBULA, NS Figure: 3	٠	):			
<ul> <li>Monitoring Well Location (URS)</li> <li>Soil Bore Location</li> <li>Electricity</li> <li>Overhead Electricity Cable</li> <li>Sewer</li> <li>Telstra</li> <li>Underground Telstra Cable</li> <li>Water</li> <li>Groundwater Flow Direction</li> <li>Underground Storage Tanks</li> <li>Site Boundary</li> </ul> Water a state by USS to ensure the accuracy of the service or deliver of the service or deli					
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nd site boundaries. URS makes no representation or warranties about its accuracy abality. completeness, suitability in negligence) for all expenses, loss arranges (including indirect or consequential damage) and the costs which may be is as a result of data being inaccurate in any way for any reason. Drawm: AO Approved: TO Date: 17/06/20 Job No.: 42424195 File No.: 42424195.003.m Client MOBIL OIL AUSTRALIA PTY LTD Project MOBIL SERVICE STATION PP2 ESA 27 MARKET STREET MERIMBULA, NS Title DETAILED SITE LAYOUT PLAN		Site	Boundar	ry	
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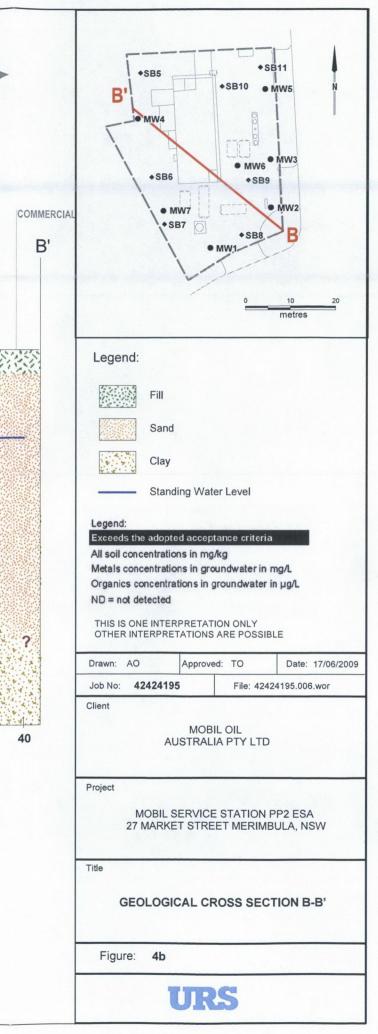
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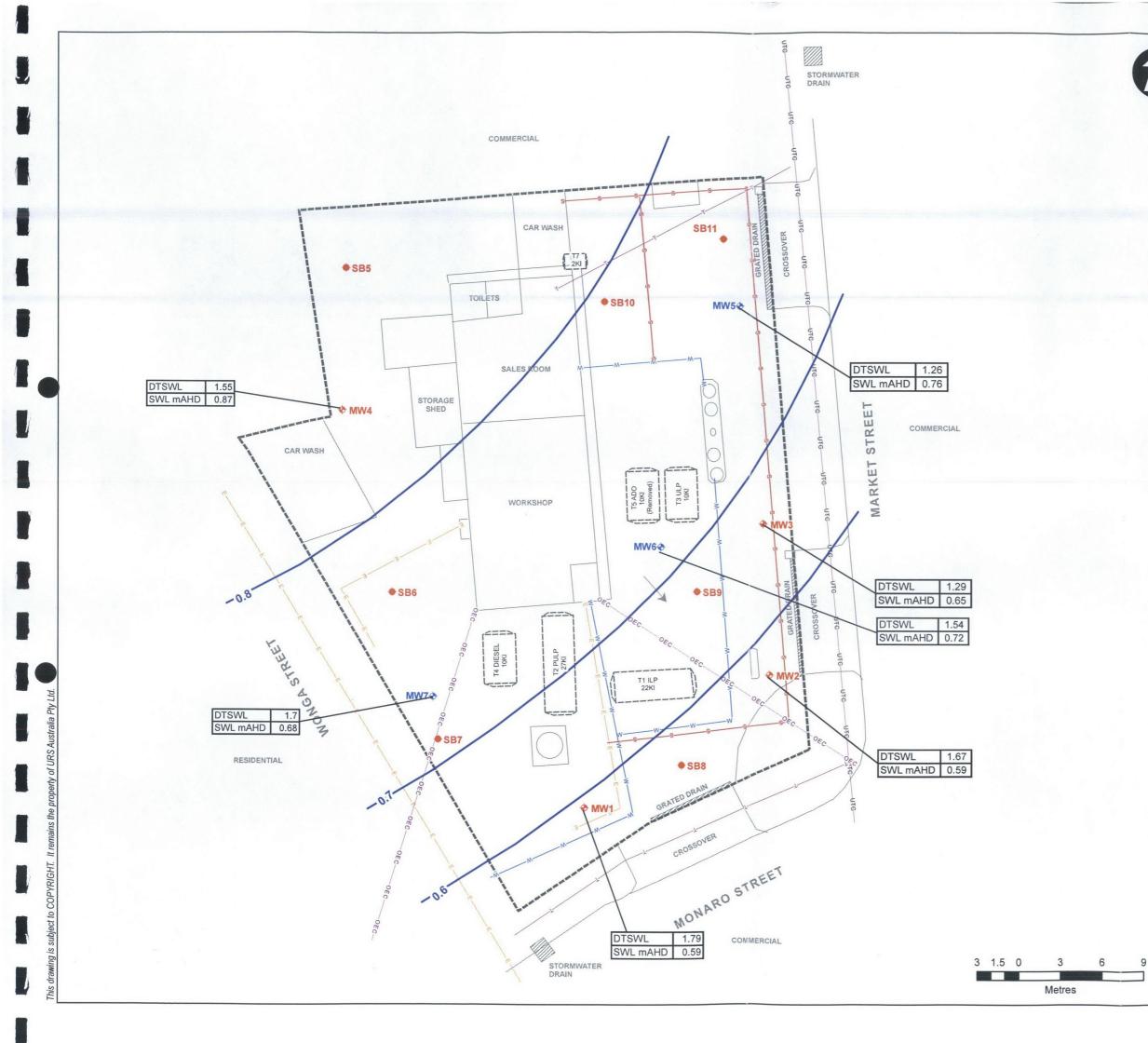


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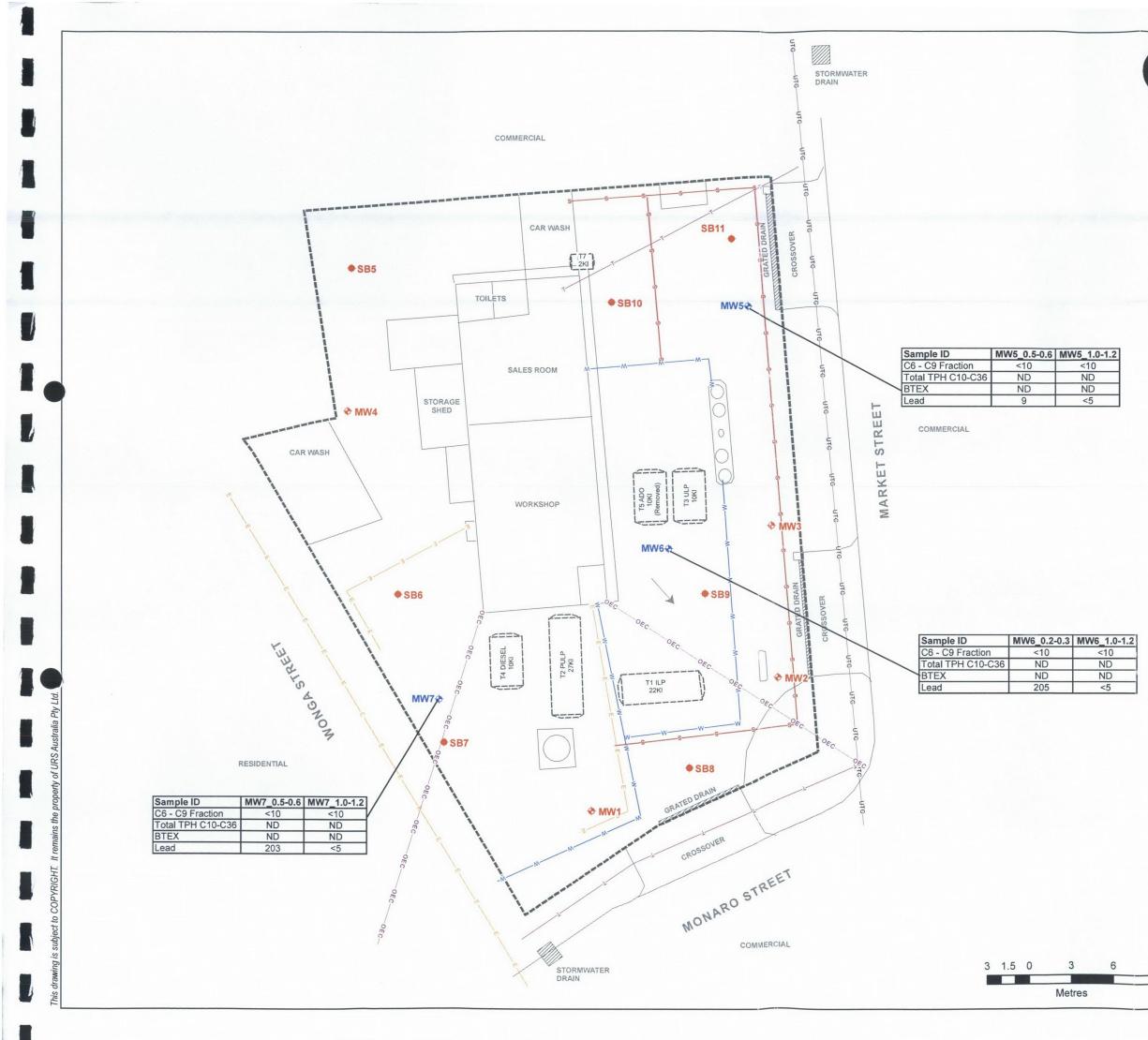
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Fill Sand Clay
Legend: Exceeds the adopted acceptance criteria All soil concentrations in mg/kg Metals concentrations in groundwater in mg/L Organics concentrations in groundwater in µg/L ND = nol detected THIS IS ONE INTERPRETATION ONLY OTHER INTERPRETATIONS ARE POSSIBLE
Drawn: AO Approved: TO Date: 17/06/2009 Job No: 42424195 File: 42424195.005.wor Client MOBIL OIL AUSTRALIA PTY LTD
Project MOBIL SERVICE STATION PP2 ESA 27 MARKET STREET MERIMBULA, NSW
Title GEOLOGICAL CROSS SECTION A-A'
Figure: 4a
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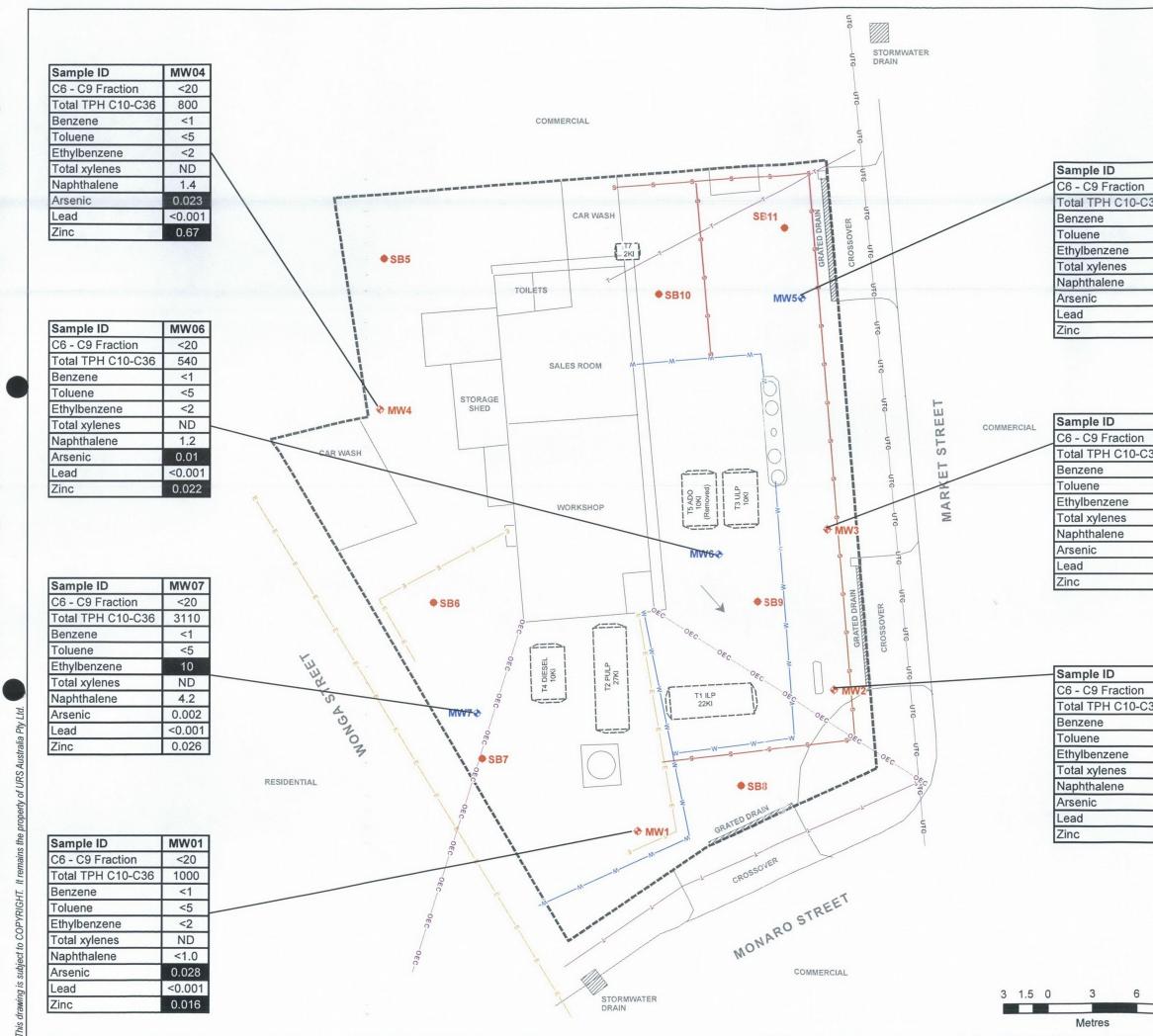




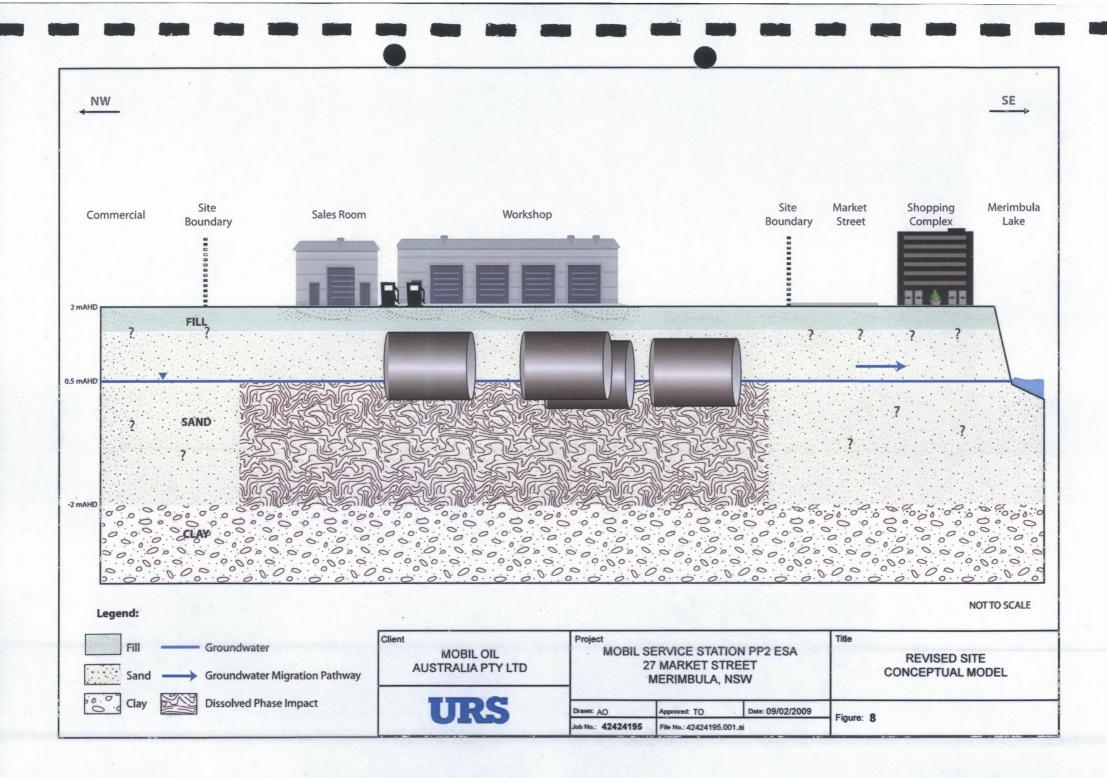
LEGEND:
<ul> <li>Monitoring Well Location (IT Environmental)</li> </ul>
<ul> <li>Monitoring Well Location (URS)</li> </ul>
Soil Bore Location
E Electricity
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s Sewer
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Underground Storage Tanks
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SWL mAHD Groundwater Elevation (mAHD)
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THIS IS ONE INTERPRETATION ONLY OTHER INTERPRETATIONS ARE POSSIBLE
Whilst every care is taken by URS to ensure the accuracy of the services or utilities data and site boundaries, URS makes no representation or warranties about its accuracy, reliability, completeness, suitabilty for any particular purpose and disclaims all responsibility
revealury: completeness, soliciting for any particular purpose and unsularity and responsibility and fability (including without limitation, liability in regigence) for all expenses, losses, damages (including indirect or consequential damage) and the costs which may be incurred as a result of data being inaccurate in any way for any reason.
as a result of data being inductivate in any way for any feason.
Drawn: AO Approved: TO Date: 17/06/2009
Job No.: 42424195 File No.: 42424195.004.mxd
Client
MOBIL OIL AUSTRALIA PTY LTD
Project
MOBIL SERVICE STATION PP2 ESA
27 MARKET STREET MERIMBULA, NSW
Title
INFERRED CORRECTED
GROUNDWATER CONTOUR MAP
Figure: 5
URS



~	LEGEND:
	<ul> <li>Monitoring Well Location (IT Environmental)</li> </ul>
N	<ul> <li>Monitoring Well Location (URS)</li> </ul>
	<ul> <li>Soil Bore Location</li> </ul>
	E Electricity
	Overhead Electricity Cable
	s Sewer
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	ute Underground Telstra Cable
	w Water
	Underground Storage Tanks
	Site Boundary
	Groundwater Flow Direction
	Exceeds the adopted acceptance criteria
	All soil concentrations in mg/kg ND = not detected
	THIS IS ONE INTERPRETATION ONLY OTHER INTERPRETATIONS ARE POSSIBLE
	OTHER INTERPRETATIONS ARE POSSIBLE
	Whilst every care is taken by URS to ensure the accuracy of the services or utilities data
	whist every call is lattern by once or ensure the accuracy on the services or balances data and site boundaries. URS makes no representation or warranties about its accuracy reliability, completeness, suitability for any particular purpose and disclaims all responsibility and liability (including without limitation, liability in regigence) for all expenses, losses,
	and adding (including indirect or consequential damage) and the costs which may be incurred damages (including indirect or consequential damage) and the costs which may be incurred as a result of data being inaccurate in any way for any reason.
	Drawn: AO Approved: TO Date: 17/07/2009
	Job No.: 42424195 File No.: 42424195.007.mxd
	Client
	MOBIL OIL AUSTRALIA
	PTY LTD
	Design
	Project
	MOBIL SERVICE STATION PP2 ESA
	27 MARKET STREET MERIMBULA, NSW
	Title
	SOIL ANALYTICAL
	RESULTS MAP
	Figure: 6
9	
	URS



	-	LEGEND:			
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	N	🔶 Moni	itoring W	ell Location	(URS)
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	0.218	and liability (including with damages (including indire	hout limitation, ect or consequ	liability in neglige ential damage) ar	ose and disclaims all responsibility ince) for all expenses, losses, ad the costs which may be incurred
		as a result of data being i	inaccurate in a	iny way for any rea	ason.
		Drawn: AO	Approv	ved: TO	Date: 17/06/2009
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		Title			
		GROU			ALYTICAL
			RES	ULTS MA	AP.
		Figure: 7			
	9				
				R	5



## Appendix A Project Management Documentation

URS

# . Mobil Oil Australia Pty Ltd (ACN 88 004 052 984) 12 Riverside Quay, Southbank VIC 3006

	FAX TRANSMISSION	
To: Fax:	Tom Onus URS Australia Pty Ltd 02-8925 5555 (including this page)	Date: 30/04/09 No. of Pages: 4
Subject:	Merimbula call-off	
From:	Nikki Maksimovic	
Phone :	(02) 4658 1392 or 0418 965 242	(02) 4658 1611 <u>1</u>
CC:		
FYI. Thanks.		
•	· · · · · · · · · · · · · · · · · · ·	
··		
Regards, Vikki Maksir		
Project Man ExxonMobil	ager Environmental Services	
	is intended for the addressee. It is confidential and m	

Unless you are the addressee, please do not copy the document or any of the information. If you have received this document in error, please let us know by telephone.

p.1

Apr 30 C		•	02-4636 6659	p.2
r	30. Hrn. 2009 10:40	02 4636 6659	- Mikely I care	
· 	TO:NIKKI MAKSIMOYIC	02 4000 0009 .		
	Mobil Oil Australia Pty Ltd ABN 88 004 052 984			. •
•	All Invoices to:		Mobil	
	PO Box 3157 j Melbourne VIC 3001			
			30,04.09	1
	CALL-OFF NO. 1	0 /45664595		
• ·	FROM OUTLINE AGRMI	46004620		
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•	URS AUSTRALIA PTY	LTD	ATTN: L. Townsend	
-	LEVEL16,240 QUEEN	STREET		
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i .	BRISBANE OUEENSLAND 4000	• •		
1	QUEENSLAND 4000	· · ·	•	· ',
	•	•		
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	•	tes detailed Dolow Against the Purch	ise Order or Call-off number stated above.	•
	APPLICABLE TERMS:	· ·		
ł	The terms which apply to and govern ch 1. Any relevant terms contained in thi	le Order plus the existing Agreement	identified by its number at the top of t	his Order, or
1	available as of the date of this Da	der at the following website: http:/	ddiende and exclhits which are identified /www.sacommobil.com/poterms and any addit	innal terms,
	conditions, addenda, and/or exhibit of this order.	CE THEE ATS NOT AVAILABLE ON THE WER	site the are included in special Condition	AB RECEION
	Matoriala '			-
1	AFOSGIA Materials Purchase Order Ter	rms - Australia		•
	Servicas	*		
	APONDAN Services Furchase Order Term	ng (SR) - Au <del>stra</del> lia		
	APD016A Appendix 1 - Invoicing and E AP0017A Appendix 2 - Alcohol and Dru	ayment		· · ·
	APUGISA Appendix 3 - SRE - OINS will APUGIA Appendix 4 - Norkplace Maren	ical .		
<u>.</u>	AP0822A Appendix 5 - Product Duality			
: ·	APDO24A- Appendix 7 Mobile Phone Um			
	If supplier engages it any conduct (in of a contract cortaining to the ends	cluding, but not limited to, perform of services described in this Order,	manes of part performance) that recognizes then Supplier expressly acknowledges the	the existence
•	1. Supplier bas read, understood and a a) contained in the Agreement whose	grans to comply with the torms, cond		•
	b) provided at the website address	specified above and the additional t	erns included in this Order 111 any). red in order for this Order to be enforce	able.
	In the absence of express wilthen agree			
	1. Purchaser will not be bound by any	terms contained in any acknowledgess	at, invoice, or other document by or from	Supplier
•	conflict with the terms and conditi	ons, exhibits, or addends in this of	mmer, written or oral, that add to, vary der. May such terms are decomed both to b further notice of objection.	e material
•	7 Nurchesser's full or partial payment	: Inc services or goods provided shal	I not be considered as an acceptance of a	ny texns
•	conflict with the terms and condition	ad at my time by Supplier is any a	ng the services or goods or provided by & amer, written or oral, that add to, very	from, or
	The terms stated in this order take pr	•		•
•			exhibits, and addends expressly stated in	
	incorporated date this Order.	sively to the teles and charteroos,	exprotest and appends expressly scated in	dr .
	Supplier must contact the Procurement	contact on this Order before proceed	Log if	
	1, no terms are identified in this Ord 2. an existing Agreement number is ref	ereaced in this Order that Supplier	does not believe is the correct agreement,	r or ·
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	supplier is advised to prine a copy of	r'an anchmentry our this wedered Aufou	are incorporated into this Order for refer	, \$1165 .
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An ExxonMobil Subsidiary

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ADD NOT GER SA MI MOUGES SA MI MOUGES SA DOBE 375 MADALOWS VOIGNON CLLIOPE NO. 10 /45566555 FROM UTLINE AGENT. 46004630 DELIVERY TENMS: FIJS Free into store at Buyor destination Seller provides packaging Tree of charge Seller responsible for Customs Clearance DAMMENT TENMS: ADD ADD ADD ADD ADD ADD ADD ADD ADD Seller responsible for Customs Clearance DAMMENT TENMS: ADD ADD ADD ADD ADD ADD ADD ADD ADD Seller responsible for Customs Clearance DAMMENT TENMS: ADD ADD ADD ADD ADD ADD ADD ADD ADD ADD	Mahil Oi	Anadiatin Dig   fel	VZ 40J0 00	107	
MADDATES VIC 3001 CALL-OPF NO. 10 /45564555 FROM OUTLINE AGRNT. 4604670 DELIVENY TERMS: FIS Free into store at Buyer destination Seller provides packaging free of charge Seller baars insurance to Buyers Store Seller regulation for Clustoms Clearance PAYMENT TERMS: Payment due 30 days from receipt of correct invoice Merimbula NOIOS3 - Gap Closure Post Phase 2 ESA I. REPESSENTATIVES "semessenterestand" Company's call-off Representative shall be Nikki Maksimovic All invoices, quoting the Call-off sumber nominated above are to be forwarded to the Company's representative Melbourne VIC 3001 Contractor's Call-Off Representative shall be Lizze Townsend 2. COMPENSATION Services Set forth by this Call-off is \$43, 253.9 This estimated cost shall not be exceeded without prior Company writth approval. In accordance with the Rates set out in the Contract. 3. SERVICES """"""""""""""""""""""""""""""""""""	ABN 88 004	OS2 904		· ·	
CALL-OFF NO. 10 /45864535 FROM OUTLINE AGENT. 46804620 DELIVENY TERMS: FIJS Free into store at Buyar destination Seller provides packaging free of charge Seller responde to Buyer Store Seller responde to Buyer Store And Store Store Seller responde to Buyer Store Seller responde to Store Company's Call-Off Representative shall be Nikki Maksimovic All invoices, guoting the Call-Off number mainated above are to be forwarded to the Company's representative are to be forwarde to Buyer this Call-Off is \$20,353.19 This estimated ooth shall not be exceeded without prior Company written approval. 10 accordance with the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations with the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementations and the Scope of Services attached Pareto. 4. SPECIAL CONDITIONS Telementatio	PO Box 3	157			
<pre>TIS Free into store at Buyer destination Seller provides packaging free of charge Seller responsible for Customs Clearance PAANENT TERMS: Payment due 30 days from receipt of correct invoice Merimbula NO1063 - Gap Closire Post Phase 2 ESA 1. REPERSENTATIVES issuessessessessesses Company's Call-Off Representative shall be Nikki Maksimovic All invoices, quoting the Call-Off number nominated above are to be forwarded to the Company's representative at: Mobil Oil Australia Pty Ltd PO BOX 3157 Melbourne VIC 3001 Contractor's Call-Off Representative shall be Lizzis Townsend 2. COMENSATION as set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$43,253.39 This estimated cost ball not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICKS Fill ITEM MATERIAL DEL DAT GTY. UNIT PHICE PER UNIT TOTAL PRICE 001 00321855 30.12.05 ENIT 1.00 **********************************</pre>					30.04.03 2
<pre>TIS Free into store at Buyer destination Seller provides packaging free of charge Seller responsible for Customs Clearance PAANENT TERMS: Payment due 30 days from receipt of correct invoice Merimbula NO1063 - Gap Closire Post Phase 2 ESA 1. REPERSENTATIVES issuessessessessesses Company's Call-Off Representative shall be Nikki Maksimovic All invoices, quoting the Call-Off number nominated above are to be forwarded to the Company's representative at: Mobil Oil Australia Pty Ltd PO BOX 3157 Melbourne VIC 3001 Contractor's Call-Off Representative shall be Lizzis Townsend 2. COMENSATION as set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$43,253.39 This estimated cost ball not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICKS Fill ITEM MATERIAL DEL DAT GTY. UNIT PHICE PER UNIT TOTAL PRICE 001 00321855 30.12.05 ENIT 1.00 **********************************</pre>	-				
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<pre>1. REPRESENTATIVES Compension Call-Off Representative shall be Nikki Maksimovic All invoices, quoting the Call-Off number nominated are to be forwarded to the Company's representative provementation 2. COMPENSATION 3. Services 3.</pre>	of correc	t invoice	•	•	
<pre>impresentation control is a set of the call-off number nominated above are to be forwarded to the Company's representative are company with the Representative shall be Lizzie Townsend 3. COMPENSATION services set forth by this Call-Off is \$32,253.39 This estimated cost shall not be exceeded without prior Company within approval. In accordance with the Rates set out in the Contract. 3. SERVICES intermentation in accordance with the Scope of Services attached pereto. 4. SPECIAL CONDITIONS intermentation Nil ITEM WATERIAL DEL. DAT QTY. UNIT PRICS PER UNIT TOTAL PRICE 001 90921854 30.12.09 UNIT 1.00 the intermentation Conduct PP2 EGA, gap closure; N01063/02 Merimbula N01063 Conduct PP2 EGA, gap closure; N01063/02 Merimbula, NSW 7197 NM</pre>	Merimbula	1 NOI063 - Gap	Closure Post 1	hase. 2 ESA	
Company's Call-Off Representative shall be Nikki Maksimovic All invoices, quoting the Call-Off number nominated above are to be forwarded to the Company's representative at: Mobil Oil Australia Pty Ltd PO Box 3157 Melbourne VIC 3001 CONTractor's Call-Off Representative shall be Lizzie Townsend 2. COMPENSATION membersentations assessmentations a				· · · · ·	
PO Box 3157 Melbourne VIC 3001 Contractor's Call-Off Representative shall be Lizz'e Townsend 3. COMPENSATION As set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$3,253.39 This estimated cost shall not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICES In accordance with the Scope of Services attached hereto. 4. SPECIAL CONDITIONS THE MATERIAL DEL. DAT 001 00921854 30.12.09 INIT CONSULTING, ENVIRONMENTAL, IN ACCORDANCE MITH THE FOLDONING: Merimbula NOID63 Conduct PP2 ESA, gap closure; NOIO63/02 Merimbula, NSW 7197 NM	Company's All invos	s Call-Off Repre	he Call-Off num	nber nominat	ted above
Contractor's Call-Off Representative shall be Lizzle Townsend 2. COMPENSATION As set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$43,253.39 This estimated cost shall not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICES In accordance with the Scope of Services attached hereto. 4. SPECIAL CONDITIONS Material DEL. DAT QTY. UNIT PRICE PER UNIT TOTAL PRICE 01 g0921854 30.12.09 UNIT 1.00 ******** CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure; NOI063/02 Merimbula, NSW 7197 NM	•	PO Box 3157	-	I •	
2. COMPENSATION EXAMPLE A Set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$43,253.39 This estimated cost shall not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICES EXAMPLE A Services attached pereto. 4. SPECIAL CONDITIONS EXTENSE NIL ITEM MATERIAL DEL. DAT 001 00921854 30.12.09 ENIT CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure, NO1063/02 Werimbula, NSW 7197 NM	Contracto			ball be Liz	zie Townsend
As set out in the Contract. The maximum cost for the Services set forth by this Call-Off is \$43,253.39 This estimated cost shall not be exceeded without prior Company written approval. In accordance with the Rates set out in the Contract. 3. SERVICES In accordance with the Scope of Services attached hereto. 4. SPECIAL CONDITIONS INTERNAL DEL. DAT GTY. UNIT PRICE PER UNIT TOTAL PRICE 001 00921854 30.12.09 UNIT 1.00 ******* CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure; NOI063/02 Werimbula, NSW 7197 NM			-		
3. SERVICES In accordance with the Scope of Services attached pereto. 4. SPECIAL CONDITIONS INTERNATIONAL DEL. DAT QTY. UNIT PRICE PER UNIT TOTAL PRICE 01 00921854 30.12.09 UNIT 1.00 INT 1.00	As set ou Services This esti	t in the Contra set forth by th mated cost shal	his Call-Off is Il not be excee	\$43,253.39	
In accordance with the Scope of Services attached hereto. 4. SPECIAL CONDITIONS MIL ITEM MATERIAL DEL. DAT QTY. UNIT PRICE PER UNIT TOTAL PRICE 001 00921054 30.12.09 UNIT 1.00 ******** CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NO1063 Conduct PP2 ESA, gap closure; NO1063/02 Merimbula, NSW 7157 NM	In accord	lance with the R	lates set out i	n the Contr	act.
In accordance with the Scope of Services attached bereto. 4. SPECIAL CONDITIONS THE MATERIAL DEL. DAT QTY. UNIT PRICE PER UNIT TOTAL PRICE 001 00921854 30.12.09 UNIT 1.00 CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure; NO1063/02 Merimbula, NSW 7197 NM			· ·· ··· ·	•	
NIL ITEM MATERIAL DEL. DAT QTY. UNIT PRICE PER UNIT TOTAL PRICE 001 00921854 30.12.09 UNIT 1.00 ******* CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure; NO1063/02 Merimbula, NSW 7197 NM			cope of Servic	es attached	i pereto.
ITEM MATERIAL DEL. DAT QTY. UNIT PRICS PER UNIT TOTAL PRICE 001 00921854 30.12.09 UNIT 1.00 ******** CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure, NO1063/02 Merimbula, NSW 7197 NM	4. SPECIA	L CONDITIONS	•		
001 00921854 30.12.09 UNIT 1.00 CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NO1063 Conduct PP2 ESA, gap closure; NO1063/02 Merimbula, NSW 7197 NM	Nil	•			
CONSULTING, ENVIRONMENTAL, IN ACCORDANCE WITH THE FOLLOWING: Merimbula NOI063 Conduct PP2 ESA, gap closure, NO1063/02 Merimbula, NSW 7197 NM	item Mat	ERIAL DEL. DAT	QTY.	UNIT PRI	CS PER UNIT TOTAL PRICE
WITH THE FOLLOWING: Merimbula NO1063 Conduct PP2 ESA, gap closure, NO1063/02 Merimbula, NSW 7197 NM	001 009	21854 30. <b>12</b> .09	•	UNIT	1.00
WITH THE FOLLOWING: Merimbula NO1063 Conduct PP2 ESA, gap closure, NO1063/02 Merimbula, NSW 7197 NM	•			•	******
Conduct PP2 ESA, gap closure, NO1063/02 Merimbula, NSW 7197 NM			, IN ACCORDANCE	•	
Merimbula, NSW 7197 NM 3	WITH THE	NOIDE3		•	
7197 NM 3			•	2	
An ExconMobil Subsidiary	Merimbula	P2 ESA, gap clos	sure; NO1063/0:	•	
An ExconMobil Subsidiary	Merimbula Conduct P.		sure, NO1063/0:		
An ExconMobil Subsidiary	Merimbula Conduct P. Merimbula		sure, NO1063/0:	· · · ·	3
	Merimbula Conduct P. Merimbula		sure, NO1063/0:	- - -	3

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#### Apr 30 09 05:57p N.Maksimovic 30. Arx. 2007 10:42

#### Mobil Oil Australia Pty Ltd ABN 68 004 052 984

All Invoices lo: PO Box 3157 Melbourne VIC 3001 CALL-OFF NO. 10 /45661595 FROM ODILLINE AGRMT. 46004620

Total Price A

### Contact: Vaughan Griffiths T/Phone: (03) 9286 5335

NB: ALS CALL-OFF = 10/4566-4596.

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02 4636 6659

AUD

Mobil 30.04.09 3

02-4636 6659

43,253.39

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#### An Excon Mobil Subsidiary

#### SA WRE- NO1063/2 Revin GRA 2 5

- POST PHASE 2 ESA WRF: NO	1063/2 Rev:0 450624	x0021
Work Request Details	<b>V</b>	
Work Request Form No.	NO1063/2	
Work Request Form Revision	0	
Consultant's Job Reference / Invoice No.		
Date Work can Commence	8/05/2009	
Expected Work Completion Date	22/05/2009	
Estimated Due Date for Draft Report	12-June-2009	
Purpose	Divestment Due Diligence	
GRA Project Manager	Nikki Maksimovic (02 4636 6654) or (0418 965 242)	
GRA Alternative Contact	Andrew Hunt (03 9286 5305) or (0422 368 870)	
Site Details		
Facility Type	Service Station	• *
ExxonMobil Site Number	NO1063	
Site Name	Mobil Service Station Merimbula	
Site Street Address	27 Market Street, Merimbula, NSW	
Site Owner Name		
Site Operator		
ExxonMobil Internal Client Name		
Territory Manager		
GRA Client Name	Mobil Oil Australia Pty Ltd	
Current Status	Closed - To be decomissioned.	
Power available on site	?	
Water available on site	?	
Mobil Padlock on fence (if applicable)	? Site access to be coordinated with Nikki	
Scope of Works	[] []	
Drilling Rate (m/day)	15 Offsite Traffic Management (Days)	
Concrete Pavement Depth (m)	0.20 Concrete coring (m) 0.6	
	Interim Soll Gas Survey Report required? No	
Predrilling Protocol – Non Critical Areas, when		
Predrilling Protocol - Non Critical Areas, when		
Consultant Supervision for Air Knifing 1.2 mBG		
Any bores in Critical Zones?		
If "Y", see Additonal Costs section for costs as: Soil Bores	sociated with HSE process and approval.	
Bores D1	parameters provide a second se	
No.	0 Bore Diameter (mm) 50	
Primary Drilling Method / Depth	None	
Secondary Drilling Method / Depth	None 0.0	
Bores D2		
No.	0 Bore Diameter (mm) 50	۰۰ <del>ه</del>
Primary Drilling Method / Depth	None	
Secondary Drilling Method / Depth	None 0.0 **	
Bores D3	[] []	
No.	0 Bore Diameter (mm) 50	
Primary Drilling Method / Depth	None	
Secondary Drilling Method / Depth	None 0.0	
Bores D4		
No.	0 Bore Diameter (mm) 50	
Primary Drilling Method / Depth	None	
Secondary Drilling Method / Depth	None 0.0	

NO1063 PP2 WRF.xis\WRF

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17/04/2009

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Monitoring Wells			
Wells W1			Г
No.	3	Bore Diameter (mm)	+
Construction	Permane		╇
Flush Mounted Well Head/s	3	Above Ground Well Head/s	<u> </u>
Primary Drilling Method / Depth		ger drilling	
Secondary Drilling Method / Depth	None	· .	
Wells W2	·7		<b></b>
No.	0	Bore Diameter (mm)	+
Construction	None	······································	+
Flush Mounted Well Head/s	ļ	Above Ground Well Head/s	
Primary Drilling Method / Depth	None		
Secondary Drilling Method / Depth	None		
Wells W3			<b>~</b>
No.	0	Bore Diameter (mm)	$\perp$
Construction	None		_
Flush Mounted Well Head/s		Above Ground Well Head/s	1.
Primary Drilling Method / Depth	None		
Secondary Drilling Method / Depth	None		
Well W4	<b></b>		<b>~</b> ~
No.	0	Bore Diameter (mm)	4
Construction	None		
Flush Mounted Well Head/s		Above Ground Well Head/s	
Primary Drilling Method / Depth	None		
Secondary Drilling Method / Depth	None	L	
Well Sampling / Testing			
Sampling Rate (wells/day)	7	Approx water column height in wells (m)	Ľ
50mm Wells		100mm Weils	
Develop Wells	3	Develop Wells	
Sample Wells	7	Sample Wells	L
Sampling Period Wells (Days)		Sampling Period Wells (Days)	Ľ
Gauge Wells	7	Aquifer Recovery Tests (Wells)	Γ
Survey Wells	7	PSH Baildown Tests (Wells)	Γ
Sample Method	Bailer		•

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17/04/2009

#### Analytical Scope

Individual Analyses

TPH (C8-C9 and C10-C36)

**Organics** BTEX

Common Group Analyses	Soil Water	Notes:
TYPE A - TPH BTEX Pb	6 7	2 soil samples per monitoring well
TPH BTEX Pb PAHs		
TYPE B - PAHs and PHENOLS	6 7	2 soil samples per monitoring well
TYPE C - As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, V, Zn, VHCs	6 7	2 soil samples per monitoring well
TYPE D - Type C metals plus Sb, Co, Mo, Sa, Sn	0 0	·
TYPE E - Nat. Att., (TOC, diss. CH4, NO3, SO4, Fe)	0	·
TYPE F - OCPs & OPPs	0 0	
TYPE G - EPAV Full Screen (Bulletin 448)	0	

Soil	Water	Soll	Water
	Metais in Water		
	Ferrous, Fe		
	Dissolved metals by ICP- AES - 1 metal		
	Dissolved metals by ICP- AES - 1-2 metals		
	Dissolved metals by ICP- AES - >2 metals		
	Dissolved metals by ICP- MS - 1 metal		
	Dissolved metals by ICP- MS - 1-2 metals		
	Dissolved metals by ICP- MS - >2 metals		
	Total Recoverable metals by ICP- MS - 1 metal		
	Total Recoverable metals by ICP- MS - 1-2 metals		
	Total Recoverable metals by ICP- MS - >2 metals		
	Miscellaneous		
	pH (APHA 20th Edition)		
	Conductivity (APHA 20th Edition)		
	TCLP Extraction (USEPA 1311)		
	TCLP Extraction (ZHE) (USEPA 1311)(2)		
	Product IDby GC/FID (non-NATA)		
	HRAF (Aliph/Arom Fractionation of TPH GC/FID)		
	Dissolved Methane (Headspace GCFID)		
	Ammonia - N		
	Nitrate - N by FIA APHA 19th Ed.		
	Organic Carbon - Total (TOC)		
	Sulphate	L	
	Chioride		
	Total Cyanide		1
	Total Fluoride		]

TPH & BTEX (C6-C36 + BTEX) Volatile Organic Compounds by P&T GC/MS Volatile Aromatic Compounds by P&T GC/MS Volatile Halogenated Compounds by P&T GC/MS PAHs by GC/MS (16 Priority List PAHs ) PAH's by GC/MS (18 Priority list PAHs ) - low level Speciated Phenois by GC/MS Speciated Phenois by GC/MS (17) - low level Total Phemolics by distillation FIA OC Pesticides by GC/ECD/MS

OP Pesticides by GC/FPD/MS PCBs (Total PCB)

OC and OP and PCB

OC and PCB

#### SVOCs by GC/MS Metais

Hexavalent Chrome (APHA 20th Ed)

Mercury - total recoverable by FIMS (USEPA7471A) Acid Soluble metals by ICP-AES - 1 metal Acid Soluble metals by ICP-AES - 1-2 metals Acid Soluble metals by ICP-AES ->2 metals Acid Soluble metals by ICP-MS - 1 metal Acid Soluble metals by ICP-MS - 1-2 metals Acid Soluble metals by ICP-MS - >2 metals

NO1063 PP2 WRF.xis\WRF

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17/04/2009

QA/QC Sampling				
Soil	<u>A B C</u> D	EF	G Notes:	
Trip Blank	1			
Field Blanks	1 1 1			
Rinsate Blanks	1 1 1			
Intralaboratory splits	1 1 1 0	0	0	_
Interlaboratory splits (secondary lab)	1 1 1 0	0	0	
Groundwater				
Trip Blank	1			
Field Blanks	1 1 1			
Rinsate Blanks	1 1 1			
Intralaboratory splits	1 1 1 0	0 0		
Interiaboratory splits (secondary lab)	1 1 1 0	0 0	] [	
Abandonment				
Temporary 50mm Wells (m)	0 Permane	nt 50mm Wel	is (m)	0
Soil Bores (m) 50mm bores only	0 Permane	nt 100mm Wi	alls (m)	0
Soil Bores (m) 100mm bores only	0			
Test pit(s) reinstatement requirements				
Management/Waste Disposai				
Bulking Factor	1.5 G/W Disp	osal (200 ltr	Drums)	2
Soli Disposal (200 ltr Drums)	2 PSH Disp	osai (50 ltr D	rums)	
Utility Pit Vapour Monitoring				
No of pits	8 No. of thi	rd party appr	ovals (if req'd)	
4 Report Format	No.			No.
Draft	1 Add	itional Repo	rts (Hard Copy)	
PDF Email	1 Add	itional Repo	rts (CD)	
PDF CD			red by Consultant	Y
Final Coples	No.	of Hours for	WRF Preparation	2
Unbound copies	Site	Size	Medium (5-8 Wells	)

5 Consultant Project Team Identification Fax Number

**Consultant Key Team Members** Project Manager (mandatory) Site Supervisor (mandatory) Site Supervisor #2 (optional) Peer Reviewer (optional)

Sydney, 02 8925 5555 **OHSA Trained** AIP Trained Name Ŷ Tom Onus Y Y Tom Onus Y Matt James Y Y Y Seth Molinari

#### NO1063 PP2 WRF.xls\WRF

6	Mobilisation and Other	Consultant	Sub-Contractor
	Loss Prevention Observation Allowance		] ″
	Estimated fieldwork reg'd for drilling (days)	2	
	Estimated fieldwork reg'd for groundwater sampling (days)	1	K.
	Estimated Distance from Office (km -straight line measure)	450	450
	Per diem (Meals and Incidentals) - Consultant/Driller (number of nights)	4	3
	Number of Mobilisations	3	3
	Local Transport days		
	Sub-contractor equipment requiring mobilisation	Drill ri	9
	Airfares (\$)	\$	·

#### 7 Additional Costs (excl GST)

#### Notes:

Additional Costs	Notes:
\$	Airknife rig cost estimate (including handling fee)
\$	Surveyor cost estimate (including handling fee)
\$	Added cost for regional waste disposal (including % handling fee)
S	<ul> <li>Accomodation (including 5% handling fee)</li> </ul>
5	Mobilisation cost estimate (>300km)
5	Discuss history of surrounding area with The Merimbula-Imlay istorical Society to identify potential historical upgradient sources
\$ ·	. ype Additional Cost Description here
\$	<ul> <li>Type Additional Cost Description here</li> </ul>
\$	Type Additional Cost Description here
2	<ul> <li>Type Additional Cost Description here</li> </ul>

#### 8 Total Estimated Cost (excl GST) Phase 2 ESA (assuming PS = 105%) Secondary laboratory samples (incl markup)

Primary laboratory samples (incl markup)



Indicative cost only. This is not included in the WRF / ITP value.

#### 9 Agreement

I have read and understood the requirements of the GRA Client and this work request is in accordance with the requirements of the GRA/Client and the GRA ESA Specification

29/04/09 Date

#### **GRA Project Manager**

I have read and understood the requirements of this work request and shall perform the works in accordance with the requirements of this work request and the GRA Specification

**Consultant Project Manager** 

17/4/0 9 Date

Setto Consultant Project Director 17/4/09

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Date WRF Rev 5.1Mar09

NO1063 PP2 WRF.xls\WRF

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17/04/2009

## WORK CLEARANCE FORM

tractor Company Name: URS AUSTRAUA			
Company: MOBIL Location N	lame:		
Order No.:Address:			
k Description: Clear Locations for Dr	illing d	an well	installation
s/Equipment to be used: Electromagnetic cable U	ocator, Con	crete corer	+ Aintenife i
			······································
Refer relevant Hazards Map and identify work location for completion of che Inside and outside hazardous areas within the site boundary			
Complete Sections A, B, C	Inside Office/S Complete Sed		
ection A - Conditions			
he contractor is to check that all of the following conditions are acceptable:			
/rite "YES/NO" when checked:			
All STATUTORY REGULATIONS applying to the job shall be comp UCSLPG or PETROLEUM PRODUCTS delivery into site storage tanks			
LPS OF PETROLEOW PRODUCTS derivery into site storage tarks	•	ill not impact work	
There is NO ENTRY into any EXCAVATION or PIT, or into any TA			mp etc.
If any NO answers the Contractor is to refer to th	e Client Company for	permit or authorizati	on.
ection B - Inside and Outside Hazardous Areas ( re	fer to Hazards Map to	verify )	
ne contractor is to check that any device that can produce or cause a source	e of ignition will not be	operated within the site	boundary
rite "YES/NO" when checked:			
Lectrical equipment (including all battery operated items such as c	ordless drills)		
<u>Yes</u> Petrol driven devices			For Reference
<b><u>Yeb</u></b> Excavation equipment (motorised)			Work Permit Number
No. Blow torches / soldering equipment			Where Applicable
No Oxy-acetylene or electric welding equipment			
<b>Les</b> Concrete cutting, breaking or drilling equipment	·		SwP_13/05/09
No Grinding equipment			
No Any other device which can produce or cause a source of ignition			
ic If any YES answers the Contractor is to refer to	the Client Company	or permit or authoriza	ation.
ection C - Precautions to be taken - All Work - Contractor	must ensure the Wor	k Area is Safe	
"YES" "N/A" - (Not Applicable)	<b>.</b>		
Dry Powder fire extinguishers (9kg min. or equiva		All in accordance with	n statutory and
Protective clothing and full cover footwear to be v Safe access / egress to and from works area	worn	client requirements	
Work "At Heights" complies with WH&S regulation	ns	ADDITION	IAL PRECAUTIONS
Electrics isolated and tagged and locked out whe		(to be completed	by contractor if necessary)
Transfer and/or Dispensing pumps to be shut dow	wn - valves closed	As per	URS HSEP.
Barriers erected around work area	٩		
Extension cables must not cross the hazardous a	areas		
Wet down area for concrete breaking or drilling			
Check work will not affect underground services, telephone, electricity, pipelines, etc	•	JSA	COMPLETED
No work to be commenced until "YES" or "N/A" apply and are		Reference No	ues Hsep
IME ON SITE START TIME: 08 00 AM/PM	FINISH TIME: 13	20 AM (PM)	
The contractor will observe the above conditions and precautions for work			
ONTRACTOR (Print Name): LUCE ALEXANDER	•	figt Name): LULL	2 ALEXANDOR
gned: 13/05/09	Signed:	sam	
The Site Operator or Manager acknowledges that this job will be undertak		Contractor's signature.	
ITE OPERATOR/MANAGER: N/A	SITE OPERATOR/M	IANAGER*:	
(Print Name)	5.12 51 2101 0100		(Print Name)
gned: / / /	Signed:		//
······································			' ' '
		arent from start signature.	

White Copy to be sent with the contractor's invoice, if requested by the oil company. Blue Copy to be left at site. Green Copy to be filed by the contractor.

Version 4

Date: 01/07/2005

-	BEYOND ONE DAY, A		(except for completion signatur OMPLETED FOR EACH DAY	es)	Australian Instit of Petroleum
)il Company: M			cation Name: FMSS	MEREIN	
ob/Order No.;	14.75		ddress: MARKET		Leimbuld NE
Vork Description: ools/Equipment to b		obe n'y	MONITORINC	<u>useus</u>	
Refer relevant Ha	zards Map and identify v	vork location for completic	on of checklist . Tick 🔲 below		
Inside	e and outside hazardous lete Sections A, B, C	areas within the site bour	hdary Inside Office/S Complete Sect	ales Building ions A, C	· · · · · · · · · · · · · · · · · · ·
Section A - Co The contractor is t Write "YES/NO" v	o check that all of the fol	lowing conditions are acc	eptable:		
		S applying to the job shall			
			e tanks will not impact work		
There is	ABLE or COMBUSTIBLE	: product and/or materials CAVATION or PIT. or into	within 8 metres of work area within 8 metres of work area with any TANK or other Confined S	ill not impact work Space eq. turret, pit, si	ump etc.
·					· · · · • • • • • • • • • • • • • • • •
	If any NO answer	s the Contractor is to re	fer to the Client Company for	permit or authorizat	ion.
	side and Outside		( refer to Hazards Map to	• •	
The contractor is to Write "YES/NO" w	-	that can produce or cause	a source of ignition will not be	operated within the sit	e boundary
-		I battery operated items s	uch as cordless drills)		
• <b>Ues</b> Petroi dri		Dattery operated items a			For Reference
	on equipment (motorised	t)			Work Permit
	hes / soldering equipme				Number
• <u>No</u> Oxy-ace	ylene or electric welding	equipment			Where Applicable
	/ cigarette lighters				SWP-18/05/09
	cutting, breaking or dril	ling equipment	,		101
• NO Grinding		uce or cause a source of i	incition		
• <u>po</u> Any othe			refer to the Client Company i	for permit or authoriz	ation.
Section C - Pr	ecautions to be ta	aken - All Work - Co	ntractor must ensure the Wor	k Area is Safe	······································
"YES"	"N/A" - (Not Applicable	e)			
$\mathbf{\nabla}$	-	• • •	or equivalent) within work area	All in accordance wi	th statutory and
C		ing and full cover footwea		client requirements	
		egress to and from works a nts" complies with WH&S i			NAL PRECAUTIONS
		ed and tagged and locked			by contractor if necessary)
⊨ <del> </del> −			shut down - valves closed		,
		d around work area			
E	Extension cabl	es must not cross the haz	ardous areas	· · · · · · · · · · · · · · · · · · ·	
9		for concrete breaking or	-		-
		I not affect underground s elephone, electricity, pipe			A COMPLETED
No worl		til "YES" or "N/A" apply		Reference No	URS-HSEP
TIME ON SITE	START TIME: 7		FINISH TIME:	AM / PM	
			for work undertaken for this job		
		= ALEXANDE		Print Name):	······
SITE OPERATOR	MANAGER: N	Print Name)	SITE OPERATOR/	MANAGER*:	
i.		(Print Name)			
Signed:		//	Signed:		//
				erent from start signature	
CONVENTO.	()r	SED JI		-	
					<u> </u>
COMMENTS:					
	······				

If WORK EXTENDS BEYOND OVE DAY, NEW FORM MUST BE COMPLETED FOR EACH DAY.           Contractor Company:	IF WORK EXTENDS BEYOND OVE DAY, NEW FORM MUST BE COMPLETED FOR EACH DAY.         Intervent of the comparison of the second o	IDAY.         Site No:         Site Sales Building         Complete Sections A, D         vill not impact work         Space, e.g. turret, pit, sump, etc. where         person who issued work request.         )         areas:         WORK TO COMMENCE.         Where Applicable	F WORK EXTENDS BEYOND ONE DAY ANEW FORM MUST BE COMPLET         Contractor Company Name:
OIL Corpany:	OI Company:	St.       Murruk         D       Inside Sales Building         Complete Sections A, D         vill not impact work         Space, e.g. turret, pit, sump, etc. where         person who issued work request.         )         areas:         WORK TO COMMENCE.         Work Permit         Number         Where Applicable	Dil Company:
Job/Order No	JubitOries No.         Appress:         Mult Str.         Mult str.           Refer Heards Mag and identify work location for completion of decklist. Trick    below.         Inside hazardous areas         Outside hazardous areas         Inside sales Building           Refer Heards Mag and identify work location for completion of thecklist. Trick    below.         Outside hazardous areas         Inside Sales Building           Section A - Conditions         ( Check that conditions are acceptable )         Inside Sales Building           1 have checked that:         ( Check that conditions are acceptable )         Inside Sales Building           1 have checked that:         ( Check that conditions are acceptable to person who issued work request.           Section B - Inside Hazardous Access ( refer to hazards Map to verify )         The contractor is to check that the equipment issted will not be operated in the hazardous areas:           Will WESNO. If VES, conditions are acceptable to proceed. If NO, refer to person who issued work request.         Section B - Inside Hazardous Access ( refer to hazards Map to verify )           The contractor is to check that the equipment issted will not be operated in the hazardous areas:         Will WESNO. If VES, conditions are acceptable to proceed. If NO, refer to Parson who issued work request.           Will WESNO. If VES.         Concrete cuting, breaking or dilling equipment ( including equi	St.       Murruk         D       Inside Sales Building Complete Sections A, D         vill not impact work       Space, e.g. turret, pit, sump, etc. where         person who issued work request.       )         areas:       )         WORK TO COMMENCE.       For Reference Work Permit Number         Y       )	Nork Description:       Min Muk       Mit       Mi
Work Description       Minimum Version and Versitivy work location for completion of checklist. Trick is below:         Protect Hexands Mag and Versitivy work location for completion of checklist. Trick is below:       Inside Sales Building         Completis Becchings A. B, D       Completis Sections A. C, D         Section A Conditions are areas       Completis Sections A. C, D         Inhere checked that:       Completis Sections A. C, D         All STATUTORY REGULATIONS applying to the job shall be completed with       Proceedings and the processing of the pr	Work Description       Minimum differently work location for completion of checkist. Trick is below.         Refer Hzards Map and Udentify work location for completion of checkist. Trick is below.       Inside hazardoua areas is completed with is completed with a complete Sections A. C. D         Section A - Conditions areas areas in completion of checkist. Trick is below.       Inside Sales Building Complete Sections A. C. D         All STATUTORY REGULATIONS applying to the job shall be completed with	b Inside Sales Building C Complete Sections A, D  vill not impact work Space, e.g. turret, pit, sump, etc. where person who issued work request. ) areas:  For Reference Work Permit Number Where Applicable	Work Description:       Min Muk       Muk       Muk       Muk       Muk         Refer Hazards Map and identify work location for completion of checklist. T       Inside hazardous areas       Outside haz         Complete Sections A, B, D       Inside hazardous areas       Outside haz         Section A – Conditions       ( Check that conditions are accepted to the poly shall be complete sections and accepted that:         All STATUTORY REGULATIONS applying to the job shall be complied with LPG or PETROLEUM PRODUCTS delivery into site storage tanks will not         FLAMMABLE or COMBUSTIBLE product and/or materials within 8 metres         There is NO ENTRY into any EXCAVATION or PIT, or into any TANK or or oxygen deficiency may exist         Write YES/NO. If YES, conditions are acceptable to proceed.         Section B – Inside Hazardous Areas       ( refer to Hazards II)         The contractor is to check that the equipment listed will not be operated in the Write YES/NO" when checked:         Mite YES/NO" when checked:         Electrical equipment (including all battery operated items such as the petrol driven devices         Matches / cigarette lighters         Concrete cutting, breaking or drilling equipment         Matches / cigarette lighters         Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to
Refer Hazardous areas	Refer Hazards Map and identify work location for completion of checklist. Tick    below.       Inside hazardous areas       Outside hazardous areas       Inside hazardous areas         Section A - Conditions       (Check that conditions are acceptable )       Complete Sections A, C, D       Complete Sections A, C, D         Inave checked mat:       • All STAUTORY REGULATIONS applying to the job shall be completed with       • Conditions are acceptable )       • Conditions are acceptable of work area with on impact work         • UPG or PERDELIN PROLUCT Sciency in the site storage tanks within 6 metres of work area with on impact work       • UMMABLE or COMBUSTBLE product and/or materials within 6 metres of work area with impact work         • UPG or PERDELIN PROLUCT Sciency in the site acaptable to proceed. If NO, refer to person who issued work request.         Section B - Inside Hazardous Areas       ( refer to Mazards Map to verify )         The contractor is to check that the equipment listed will not be operated items such as cordiess drills)       • Perdet driven devices         • Matches / oparate lighters       • Convected uting, Devading equipment       • Maxerds Map to verify )         The contractor is to check that the equipment listed will not be operated within the site boundary:       Work Permit Number         • Matches / oparate lighters       • Convacted uting, Devading equipment       • Maxerds Map to verify )         • Maxerds which can produce or cause a source of ignition       Any "YES" answers will require a separate authorisation. NO WORK TO	Complete Sections A, D     Complete Sections A, D     Vill not impact work     Space, e.g. turret, pit, sump, etc. where     person who issued work request.     ) areas:      WORK TO COMMENCE.     Work Permit     Number     Where Applicable	Refer Hazards Map and identify work location for completion of checklist. T         Inside hazardous areas       Outside haz         Complete Sections A, B, D       Complete Sections are accepted to the process of the proces of the proces of the proces of the process of the proce
Inside hazardous areas       Outside hazardous areas       Inside fazardous areas         Section A - Conditions       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable )         Inaw checked hat:       ( Check that conditions are acceptable of work area will not lings:t work ( Check that the equipment itsel will not be operated in the hazardous areas:         Write YES/NO. If YES; conditions are acceptable to proceed. If NO, refer to person who issued work request.         Section B - Inside Hazardous Areas       ( refer to Hazardous areas:         Write YES/NO. If YES; conditions are acceptable to proceed. If NO, refer to person who issued work request.         Section C - Outside hazardous Areas       ( refer to Hazardous Areas dillis)         Imace factors is to check that the equipment issue or class a source of ignition       Proceeding equipment         Imace factors areas is obtable and power or class a source of ignition       Any "YES" answers will require a separate permit to be lasted. NO WORK TO COMMENCE.         Section C - Outside Hazardous Areas       ( refer to Hazardous Anda poweriny )         The contractor i	Inside hazardous areas	Complete Sections A, D     Complete Sections A, D     Vill not impact work     Space, e.g. turret, pit, sump, etc. where     person who issued work request.     ) areas:      WORK TO COMMENCE.     Work Permit     Number     Where Applicable	Inside hazardous areas Complete Sections A, B, D Section A – Conditions ( Check that conditions are accepted to the the the the the the the tendence of tendence
		Space, e.g. turret, pit, sump, etc. where person who issued work request. ) areas: <i>WORK TO COMMENCE.</i> Work Permit Number Where Applicable	<ul> <li>LPG or PETROLEUM PRODUCTS delivery into site storage tanks will not</li> <li>FLAMMABLE or COMBUSTIBLE product and/or materials within 8 metres</li> <li>There is NO ENTRY into any EXCAVATION or PIT, or into any TANK or of oxygen deficiency may exist</li> <li>Write YES/NO. If YES, conditions are acceptable to proceed.</li> <li>Section B – Inside Hazardous Areas ( refer to Hazards II)</li> <li>The contractor is to check that the equipment listed will not be operated in the Write "YES/NO" when checked:</li> <li>Method Electrical equipment (including all battery operated items such as Petrol driven devices</li> <li>Electrical equipment (motorised)</li> <li>Blow torches / soldering equipment</li> <li>Oxy-acetylene or electric welding equipment</li> <li>Matches / cigarette lighters</li> <li>Concrete cutting, breaking or drilling equipment</li> <li>Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to</li> </ul>
Section B - Inside Hazardous Areas       ( refer to Hazards Map to verify )         The contractor is to check that the equipment listed will not be operated in the hazardous areas:         Write YESNO" when checked:         Petrol driven devices         Write YESNO" when checked:         Poysacetytene or electric welling equipment         Petrol driven devices         Pow orches / soldering equipment         Petrol driven devices / soldering equipment         Petrol driven device         Procente driven, breaking or drilling equipment         Petrol driven devices         Poworether driven devich can produce or cause a na	Section B - inside Hazardous Areas       ( refer to Hazards Map to verify )         The contractor is to check that the equipment listed will not be operated in the hazardous areas:         Write :: ESNO" when checked:	) areas: D WORK TO COMMENCE. Work Permit Number Where Applicable Where Applicable	Section B – Inside Hazardous Areas       ( refer to Hazards I         The contractor is to check that the equipment listed will not be operated in the Write "ES/NO" when checked:       •         •       Electrical equipment (including all battery operated items such as the Petrol driven devices         •       Electrical equipment (motorised)         •       Matches / soldering equipment         •       Oxy-acetylene or electric welding equipment         •       Matches / cigarette lighters         •       Matches / cigarette lighters         •       Matches / cigarette lighters         •       Any other device which can produce or cause a source of ignition         Any "YES" answers will require a separate permit to
The contractor is to check that the equipment listed will not be operated in the hazardous areas:         Write YES/NO" when checked:         Write YES/NO" then checked:         Write YES/NO" when checked:	The contractor is to check that the equipment listed will not be operated in the hazardous areas:         With: YES/NO" when checked:         Image: the chical equipment (including all battery operated items such as cordless drills)         Image: the chical equipment (including all battery operated items such as cordless drills)         Image: the chical equipment (including all battery operated items such as cordless drills)         Image: the chical equipment (including all battery operated items such as cordless drills)         Image: the chical equipment (including equipment)         Image: the chical equipment (including equipment)         Image: the chical equipment or the chical equipment of the chical equipment of the chical equipment of the chical equipment of the chical equipment is to check that the equipment listed will not be operated within the site boundary:         Image: the chical equipment (including equipment)         Image: the chical equipment (including equipme	WORK TO COMMENCE. Work Permit Number Where Applicable	The contractor is to check that the equipment listed will not be operated in the Write "ES/NO" when checked:      Electrical equipment (including all battery operated items such as petrol driven devices     Excavation equipment (motorised)     Methods:     Model of the solution of the
Wite	Wite	WORK TO COMMENCE. Work Permit Number Where Applicable	<ul> <li>Write "ES/NO" when checked:</li> <li>Electrical equipment (including all battery operated items such as Petrol driven devices</li> <li>Excavation equipment (motorised)</li> <li>Ma Blow torches / soldering equipment</li> <li>Oxy-acetylene or electric welding equipment</li> <li>Matches / cigarette lighters</li> <li>Concrete cutting, breaking or drilling equipment</li> <li>Grinding equipment</li> <li>Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to</li> </ul>
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Excavation equipment (motorised)     Excavation equipment (motorised)     Matches / cigarette lighters     Matches / cigaretters     Ma	Excavation equipment (motorised)     Excavation equipment (motorised)     Matches / signerite lighters     Matches / signeriters     Matches / sign	WORK TO COMMENCE. Work Permit Number Where Applicable	<ul> <li>Excavation equipment (motorised)</li> <li>Blow torches / soldering equipment</li> <li>Oxy-acetylene or electric welding equipment</li> <li>Matches / cigarette lighters</li> <li>Matches / cigarette lighters</li> <li>Concrete cutting, breaking or drilling equipment</li> <li>Grinding equipment</li> <li>Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to</li> </ul>
Blow torches / soldering equipment     Dyv-acetylene or electric welding equipment     Dyv-acetylene orelectric welding equipment     Dyv-acetylene or electric welding e	Blow torches / soldering equipment     Coxy-acetylene or electric welding equipment     Concrete cutting, breaking or drilling equipment     Any other device which can produce or cause a source of ignition     Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.     Section C - Outside Hazardous Areas     ( refer to Hazards Map to verify )     The contractor is to check that the equipment listed will not be operated within the site boundary:     Write "YESNO" when checked:     Oxy-acetylene or electric welding equipment     Blow torches / soldering equipment     Concrete cutting, breaking or drilling equipment     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Dispensing pumps to be taken – All work – Contractor must ensure the Work Area is Safe     "YES" "N/A" – (Not Applicable)     Dry Powder fire extinguishers (9 kg min. or equivalent) within work area     Dispensing pumps to be shut down     Barries rected around work area     Extension cables must not cross the hazardous areas     Wel down area for concrete breaking or drilling     Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.     No work to be compareed upull "YES" or "N/A" apply and are ticked.     Time constractor will	WORK TO COMMENCE. Work Permit Number Where Applicable	<ul> <li>Ma Blow torches / soldering equipment</li> <li>Oxy-acetylene or electric welding equipment</li> <li>Matches / cigarette lighters</li> <li>Concrete cutting, breaking or drilling equipment</li> <li>Grinding equipment</li> <li>Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to</li> </ul>
Matches / cigarette lighters     Matches / concrete cutting, breaking or drilling equipment     Matches / concrete cutting, breaking or drilling equipment     Matches / context with can produce or cause a naked flame     Any "YES" answers will require a separate authorisation. NO WORK TO COMMENCE.     Section D – Precautions to be taken – All work – Contractor must ensure the Work Area is Safe     "YES" "NIA" – (Not Applicable)     Dry Powder fre extinguishers (9 kg min. or equivalent) within work area     ADDITIONAL PRECAUTIONS     Matches / contractor is be shut down     Barriers erected around work werea     Matches / contractor work not affect underground services, e.g. telephone, electricity, pipelines, etc.     No work to be compared updit "YES" or "NA" apply and are ticked.     Time contractor will observe the today conditions and precautions for work undertaken for this job.     CONTRACTOR (prin Name;     CONTRACTOR (prin Name;     CONTRACTOR (prin Name;     CONTRACTOR (prin Name;     CONTRACTOR	Matches / cigarette lighters         Matches / cigarette lighters         Matches / cigarette lighters         Concrete cutting, breaking or drilling equipment         Any other device which can produce or cause a source of ignition         Any other device which can produce or cause a source of ignition         Any other device which can produce or cause a source of ignition         Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.         Section C - Outside Hazardous Areas         ()       Concrete cutting, breaking or drilling equipment         Blow torches / soldering equipment         Any other device which can produce or cause a naked flame         Any other device which can produce or cause a naked flame         Any other device which can produce or cause a naked flame         Any other device which can produce or cause a naked flame         Any "YES" "NNA" - (Not Applicable)         Dry Powder fire extinguishers (9 kg min. or equivalent) within work area         ADDITIONAL PRECAUTIONS         () bispensing pumps to be shut down         Barriers erected around work area         Dispensing pumps to be shut down         Barriers erected around work area         Met down area for concrete breaking or arilling         Met down area for concrete breaking or arilling         Dispensing pumps to be shut down	WORK TO COMMENCE. Work Permit Number Where Applicable	<ul> <li>Matches / cigarette lighters</li> <li>Concrete cutting, breaking or drilling equipment</li> <li>Grinding equipment</li> <li>Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to</li> </ul>
Concrete cutting, breaking or drilling equipment Grinding equipment Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to be Issued. NO WORK TO COMMENCE. Section C - Outside Hazardous Areas (refer to Hazards Map to verify) The contractor is to check that the equipment listed will not be operated within the site boundary: Write "YES/NO" when checked: 	Concrete cutting, breaking or drilling equipment Grinding equipment Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE. Section C - Outside Hazardous Areas (refer to Hazards Map to verify) The contractor is to check that the equipment listed will not be operated within the site boundary: Write "YES/NO" when checked: 	WORK TO COMMENCE. Work Permit Number Where Applicable	Concrete cutting, breaking or drilling equipment     Grinding equipment     Any other device which can produce or cause a source of ignition     Any "YES" answers will require a separate permit to
Grinding equipment     Any other device which can produce or cause a source of ignition     Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.     Section C - Outside Hazardous Areas     ( refer to Hazards Map to verify )     The contractor is to check that the equipment listed will not be operated within the site boundary:     Write "YES/NO" when checked:     Oxy-acetylene or electric welding equipment     Excavation equipment     Excavation equipment     Concrete cutting, breaking or drilling equipment     Grinding equipment     Concrete cutting, breaking or drilling equipment     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any other device which can produce or cause a naked flame     Any "YES" "NA" - (Not Applicable)     Dry Powder fire extinguishers (9 kg min. or equivalent) within work area is Safe     "YES" "NA" - (Not Applicable)     Dry Powder fire extinguishers (9 kg min. or equivalent) within work area     Dispensing pumps to be shut down     Barriers erected around work area     Dispensing pumps to be shut down     Barriers erected around work area     Weit down area for concrete breaking or drilling     Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.     No work to be commenced uptil "YES" or "N/A" apply and are ticked.     TIME ON SITE START TIME (    AN / PM FINISH TIME:     AM (PM     The contractor will observe the follow conditions ond precautions for work undertaken for this job.     CONTRACTOR (print Name):	Grinding equipment     Any other device which can produce or cause a source of ignition     Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.     Work Permit     Mumber     Work exceptions     C - Outside Hazardous Areas     ( refer to Hazards Map to verify )     The contractor is to check that the equipment listed will not be operated within the site boundary:     Write "YES'NO" when checked:     Oxy-acetylene or electric welding equipment     Blow torches / soldering equipment     Concrete cutting, breaking or drilling equipment     Any other device which can produce or cause a naked flame     Any "YES" answers will require a separate authorisation. NO WORK TO COMMENCE.     Section D - Precautions to be taken - All work - Contractor must ensure the Work Area is Safe     "YES" "N/A" - (Not Applicable)     Dry Powder fire extinguishers (9 kg min. or equivalent) within work area     ADDITIONAL PRECAUTIONS     Ibe completed by contractor if necessary)     Dispensing pumps to be shut down     Barriers erected around work area     Dispensing pumps to be shut down     Barriers erected around work area     Weit down area for concrete breaking or drilling     Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.     No work to be commenced uptil "YES" or "N/A" apply and are ticked.     TIME ON SITE START TIME:     Any PM     The contractor will observe the folgy conditions and precuduins for work undertaken for this job.	WORK TO COMMENCE. Work Permit Number Where Applicable	<ul> <li>Any other device which can produce or cause a source of ignition</li> <li>Any "YES" answers will require a separate permit to</li> </ul>
• 1       Any other device which can produce or cause a source of ignition       Work Permit         Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.       Work Permit         Section C - Outside Hazardous Areas       ( refer to Hazards Map to verify )       ()         The contractor is to check that the equipment listed will not be operated within the site boundary:       ()       ()         • Oxy-acetylene or electric welding equipment       ()       ()       ()         • Blow torches / soldering equipment       ()       ()       ()         • Concrete cuting, breaking or drilling equipment       ()       ()       ()         • Concrete cuting, breaking or drilling equipment       ()       ()       ()         • Concrete cuting, breaking or drilling equipment       ()       ()       ()         • Concrete cuting, breaking or drilling equipment       ()       ()       ()         • Concrete cuting, breaking or drilling equipment       ()       ()       ()       ()         • Any other device which can produce or cause a naked flame       ()       ()       ()       ()       ()         • May "YES" answers will require a separate authorisation. NO WORK TO COMMENCE.       Section D - Precautions to be taken - All work - Contractor must ensure the Work Area is Safe       ()       ()       ()       ()	• 11       Any other device which can produce or cause a source of ignition       Many "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.         Section C - Outside Hazardous Areas       ( refer to Hazards Map to verify )       The contractor is to check that the equipment listed will not be operated within the site boundary:       Where Applicabil         Wirtle "YES/NO" when checked:       -       -       Oxy-acetylene or electric welding equipment         •	WORK TO COMMENCE. Work Permit Number Where Applicable	• <u>7</u> <u>7</u> Any other device which can produce or cause a source of ignition Any "YES" answers will require a separate permit to
Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.       Number         Section C - Outside Hazardous Areas ( refer to Hazards Map to verify )       The contractor is to check that the equipment listed will not be operated within the site boundary:       Write "YES/NO" when checked:         'Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment        Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy-acetylene or electric welding equipment      Oxy	Any "YES" answers will require a separate permit to be issued. NO WORK TO COMMENCE.       Number         Section C - Outside Hazardous Areas ( refer to Hazards Map to verify )       The contractor is to check that the equipment listed will not be operated within the site boundary:       Wite "YES'NO" when checked:       <	WORK TO COMMENCE. Number Where Applicable	Any "YES" answers will require a separate permit to
Section C - Outside Hazardous Areas       (refer to Hazards Map to verify)       Where Applicable         The contractor is to check that the equipment listed will not be operated within the site boundary:       SUD_31/23         Write "YES/NO" when checked:       Oxy-acetylene or electric welding equipment         Blow torches / soldering equipment       Excavation equipment (notorised)         Concrete cutting, breaking or drilling equipment       Concrete cutting, breaking or drilling equipment         May other device which can produce or cause a naked flame       Any "YES" answers will require a separate authorisation. NO WORK TO COMMENCE         Section D - Precautions to be taken - All Work - Contractor must ensure the Work Area is Safe       "YES"         "YES"       "NA" - (Not Applicable)         Dry Powder fire extinguishers (9 kg min. or equivalent) within work area       ADDITIONAL PRECAUTIONS         Electrics isolated and tagged       Dispensing pumps to be shut down       Electrics isolated and tagged         Barriers erected around work area       Wet down area for concrete breaking or drilling       Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.         No work to be compresed upil "YES" or "N/A" apply and are ticked.       TIME ON SITE       START TIME:	Section C - Quiside Hazardous Areas       ( refer to Hazards Map to verify )       Where Applicable         The contractor is to check that the equipment listed will not be operated within the site boundary:       Support 2010         Write "YES/NO" when checked:	(v ) Where Applicable	
The contractor is to check that the equipment listed will not be operated within the site boundary:       SWP -21 /03         Write "YES/NO" when checked:       Oxy-acetylene or electric welding equipment         Blow torches / soldering equipment       Excavation equipment (motorised)         Concrete cutting, breaking or drilling equipment       Concrete cutting, breaking or drilling equipment         May other device which can produce or cause a naked flame       Any "YES" answers will require a separate authorisation. NO WORK TO COMMENCE.         Section D - Precautions to be taken - All work - Contractor must ensure the Work Area is Safe       "YES" "N/A" - (Not Applicable)         Dry Powder fire extinguishers (9 kg min. or equivalent) within work area       ADDITIONAL PRECAUTIONS         Protective clothing and full cover footware to be worn       (to be completed by contractor if necessary)         Electrics isolated and tagged       Dispensing pumps to be shut down         Barriers erected around work area       Dispensing pumps to the shut down         Barriers erected around work area       Writ down area for concrete breaking or drilling         Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.       No work to be commenced uptil "YES" or "NA" apply and are ticked.         TIME ON SITE       START TIME:       And /PM       FINISH TIME:       AM       PM         • The contractor will observe the dodye conditions and precautions for work undertak	The contractor is to check that the equipment listed will not be operated within the site boundary:       Sup_2103         Write "YES/NO" when checked:       Oxy-acetylene or electric welding equipment         Blow torches / soldering equipment       Blow torches / soldering equipment         Concrete cutting, breaking or drilling equipment       Concrete cutting, breaking or drilling equipment         Grinding equipment       Any other device which can produce or cause a naked flame         Any other device which can produce or cause a naked flame       Any "YES" answers will require a separate authorisation. NO WORK TO COMMENCE.         Section D - Precautions to be taken - All work - Contractor must ensure the Work Area is Safe       "YES" "N/A" - (Not Applicable)         Dry Powder fire extinguishers (9 kg min. or equivalent) within work area       ADDITIONAL PRECAUTIONS         (to be completed by contractor if necessary)       Electrics isolated and tagged         Dispensing pumps to be shut down       Barriers erected around work area         Barriers erected around work area       Extension cables must not cross the hazardous areas         Writ down area for concrete breaking or drilling       Check work will not affect underground services, e.g. telephone, electricity, pipelines, etc.         No work to be commenced ustif "YES" or "NA" apply and are ticked.       TIME ON SITE         TIME ON SITE       START TIME:       AM / PM         Finish Time:       AM / PM		
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SITE OPERATOR (Print Name):	SITE OPERATOR (Print Name):	ERATOR* (Print Name):	SITE OPERATOR (Print Name):
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## URS

### SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

Date	13/05/09	•
	LUKE ALEXANDER ne: 0437470 241	Site Name: FMSS MERRIMBULA
GRAPM:	JIKKI MAKSINDUIK ne:	Address: MARKET ST MERIMBULA, NSW

#### SECTION A - SAFE WORK PROCEDURE

When the completed AIP permit indicates additional authorisation or work permit is required, this procedure and attached checklist must be completed to undertake routine hazardous and intrusive activities;

- At the beginning of each day before any activities commence.
- Whenever the workgroup or site supervisor changes.

This Safe Work Procedure applies to Mobil controlled sites or Mobil GR controlled activities at the following facilities only. Please indicate  $\checkmark$  facility type below.

- Service Stations operating or closed,
- Operating depots (unless another on site Permit System takes precedence),
- Closed or non-operating depots and retail facilities at depots.
- Aviation depot (small, country)
- All off-sites works adjacent to the above sites where URS is working for Mobil ie a Mobil GR controlled activity.

#### This Permit CANNOT be used for the following;

- Works on large aviation facilities
- Works on refineries or refinery controlled activities
- Works on terminals or terminal controlled activity.

Any deviations from the above definitions must be approved in writing by both the

- URS Asia Pacific HSE Manager and
- Mobil Team Leader

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

#### **Routine Hazardous and Intrusive Activities**

This permit can only be issued for activities where the equipment listed below is used.

Note: For activities that require the use of equipment not listed below, a separate Mobil Work Permit must be issued.

Exist Y/N	used in Hazardous areas	Controls to enable equipment to be operated safely in hazardous areas	Initial when in place
4	Motor vehicles	ADE MODE PID/LEL Monitoring. Minimise use	A
Ч	Drill rig	PIDILEL monitoring, barricade write area	LA
Ч	Vacuum truck (used for Non Destructive Digging Only)	V V	LA
, A	Electric concrete corer	", " & wetchown work area. Caution !	
4	Petrol driven concrete corer		LA
40	Generator	PID LEL monitoring, togged, place in safe	
N	Compressor	J' I' area	
4	Wet vac	POLLEL monitoring. Caution of cable, tagging	5
N	Interface probe		
N	Chem. kit		
Ч	Service locating equipment		
N	Survey equipment		
ч	Vapour monitoring equip.	Intrinsically safe,	LA
Ч	Digital camera	PID/LEL monitoring minimal use	LA

### Location of Works

Location	Yes/No
On Site	Yes
Off Site	No
Hazardous area	Hes
Critical Zone*	No

#### \* Intrusive works in the Critical Zone can only proceed with approval from

- URS Asia Pacific HSE Manager and
- Mobil Team Lead

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## URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

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# **URS** SAFE WORK PROCEDURE & PERMIT

### Safe Work Procedure & Permit- Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

The procedure and checklist must be signed off as complete at the end of each day when all site activities are complete at the site has been left in a safe a clean state.

It is expected that upon arrival at any site, a "Take 5" assessment will be carried out and recorded by employees before preparation for work activities commences.

## Preparations for Hazardous Work Activities

	Action	Comments	initial when Complete or N/A
1.	Evaluate local traffic conditions with site operator and establish a traffic control program in accordance with the Mobil Traffic Management Plan	The traffic management plan must ensure the safety of all workers at the site. Work areas shall be set up so traffic can clearly see the barricades or workers.	LA
2.	Where works are undertaken off site, a current traffic management plan approved by local authorities must be available at the site.	This shall incorporate the engagement of traffic management subcontractors. And should be prepared well in advance of any site activities.	N/A
3.	Works that require the introduction of an ignition source require a survey of the WORK AREA with an LEL meter prior of commencement of on site and offsite	No work shall commence until the WORK AREA has been cleared with an LEL meter. The survey must be redone each time a	10
	works.	new WORK AREA is established at the site. Gas detector survey results are to be recorded on the attached gas vapour test certificate.	
4.	Before any intrusive work commences, a thorough survey must be completed to identify all aboveground and below ground services that may be impacted by the proposed intrusive activities.	Below ground services shall be clearly identified and marked as per the Exxonmobil sub surface clearance procedure.	LA
5.	Subsurface Clearance Protocol checklist must be completed and faxed to Mobil GRAPM and the URS Project Manager	This should be done at least 24hours before work commences. A copy of the sub surface procedure and checklist should be kept on site with the file documentation.	LĄ
6.	Complete AIP "WORK CLEARANCE FORM" and visually confirm defined AIP "HAZARDOUS AREAS" onsite;	AIP "WORK CLEARANCE FORM" must be completed on every site regardless of the proposed activities.	LA
7.	Ensure the Scope of Work as outlined in the HSEP clearly describes all activities planned for the site for the day.	The Scope of Work should clearly identify all steps in the proposed work.	LA

Safe Work Procedure

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Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

8.	Conduct a toolbox meeting with all	All contractors must be familiar with the	
<b>~</b> .	contractors indicating the specific requirements for the day's activities. Induct	Scope of Work, and the specific requirements outlined in the HSEP before	LA
	all personnel to site using the site specific URS Health Safety & Environment Plan.	any activities are undertaken. All contractors must sign on to the HSEP	
		before activities commence All PPE must be available and ready for use.	
9.	Check the condition of the contractor's	All equipment should be in a sound state	
	equipment and ensure contractors have current maintenance records of plant and equipment.	with no obvious signs of damage. All electrical leads must be tagged with a current electrical compliance tag.	LĄ
10.	Define exclusion zone around WORK	In addition to using a vehicle for	
	AREA to ensure adequate work space is available for the proposed activities.	protection, this should be done using 1m high bollards caution tape and signage.	LA
11.	Place 2 x 9kg Dry Chem. fire extinguishers inside the WORK AREA	Fire extinguishers should have a current service stamp, a security pin in place and be placed at a location that takes	ίΩ
10	Lindertake mechanical and electrical	prevailing wind conditions into account.	
12.	Undertake mechanical and electrical isolation of all equipment including fuel	The standard required for isolation must render the equipment inside the	NA
	dispensers inside HAZARDOUS AREAS where hazardous or intrusive activities are	HAZARDOUS AREA inoperable. Refer to Equipment Isolation Certificate for	
	being undertaken. This must be done prior to commencement of works	adequate isolation standards.	
13.	Complete the attached Safe Work Procedure Checklist		LA

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **AREA DEFINITIONS**

### WORK AREA :

• Radius from location of active works that provides adequate space to undertake the work safely. Nominally 5m.

### HAZARDOUS ZONE :

- 4m radius around fuel dispensers.
- 5m radius around LPG pump, tank and decant cylinders
- 4m radius around UST Dip/Fill points
- 1.5m radius around tank vents
- 1.5m radius around open wells.

### **CRITICAL ZONE :**

A detailed description of the critical zone can be referenced in the following document.

Global Remediation OIMS Manual System 3 – Design Practices / Project Management.

This includes

- 3m distance from all sub-surface electrical lines and gas supply lines.
- 3m distance from edge of tanks (including decommissioned tanks),
- 3m distance from operating dispenser islands and suspected underground lines and entire area between tank field and dispensers\*.

\*Refer to attached example of critical zone around fuel systems.

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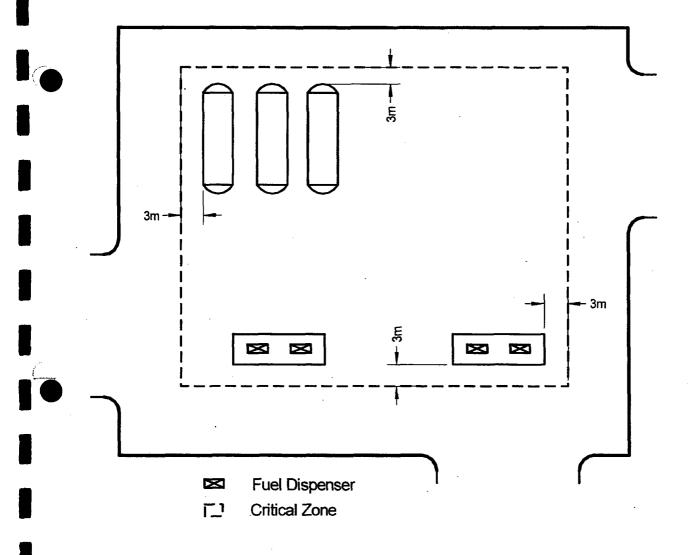
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## URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **Critical Zone Around Fuel Systems**

The following shows the Critical Zone on a typical service station fuel system



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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## SAFE WORK PERMIT - WORK PREPARATION CHECKLIST

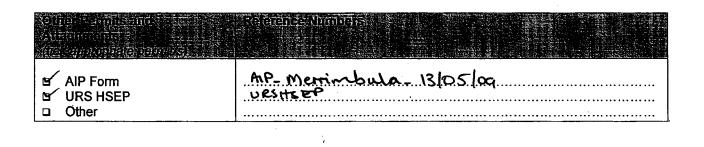
Complete this form before each day of site works.

HOT WORK: is work which may create a spark with sufficient energy to ignite flammable gases or combustible dusts. This situation may arise due to the work being conducted or the equipment introduced to carry out the work and includes drilling.

COLD WORK: is work where there is no possibility of developing an ignition source anywhere within a Hazardous Area whether flammable gases are or are not present.

### Scope Of Work

A VIERA HODESED ARTVITES	Aforemente of vorsales and second version and and second as
<ul> <li>Cold Work</li> <li>Hot Work</li> <li>Drilling</li> <li>Note: This permit is not to be used for other activities such as excavation or tank removal.</li> </ul>	Site Walkover Electomagnetic cable bocation Marteout of services: Concrete coring Clegnup area with websor Ritrinfe to 2 1.5 m Backfill NOD hole Packaus equipment Leave Sike
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## URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Hazard Identification

The following hazard identification checklist must be completed before this permit can be issued.

		tazari blennitaion ane Militationenea data a substanti	
Exist Y/N		Precautions/methods to control hazards	Initial when in place
Ч	Flammable Vapour	PID/LEL monitoring	Ln
N	Product (Liquids)		
	Sludges Solids		
ч	Sewers Drains	wetwar numble & barricade draws	LA
ч	Dust	Wetdown work area	LA
ч	Services (below ground)	Electromagnetic cable location, NDD	14
4	Services (overhead)	Caution. Wallcout no route. ensure clearances	1.0
Ч	Traffic	Caution of vehicles this is around sile	
2	Gravity (what can fall)		
N	Inertia (what can move)		
4	Slip/Trip Hazards	Caution. Awarress of potential trip harands &	LA
٩	Manual Handling	Team lifts for SAFE west lifting procedure	LQ
Ч	Open excavations	Barricadel worke area.	
N	Heat	· ·	
N	Combustible rubbish		
Ч	Access Problems		
N	Other Site Activities		
	Other (Specify)		

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Fuel Dispenser Isolation Certificate (Mandatory)

When intrusive work is undertaken inside the Hazardous Area, electrical equipment within that Hazardous Area must be isolated prior to the commencement of work.

## Intrusive work within the Critical Zone is not permitted without the written approval of Mobil and the URS Health & Safety Manager.

To satisfactorily isolate equipment, one of the following methods shall be applied:

#### Method 1

- Electrically isolate the dispenser by opening the circuit breaker at the mains power supply board.
- Place a DO NOT OPERATE tag on the circuit breaker.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

#### Method 2

- Request the consol operator to isolate the equipment at the dispensing consol.
- Place a DO NOT OPERTATE tag on the isolation switch.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

NA

		nn Hessle					
Equipment to be Isolated	Isolation Method (Method 1 or 2)	Isolation Established by		Isola	ation With	ndrawn	
	······································	Date	Time	Signature	Date	Time	Signature
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### **Safe Work Procedure - Precautions**

The following precautions must be taken when undertaking hazardous or intrusive activities on or off site.

[		Action	Comments
	1.	Before any drilling is commenced, the drilling checklist must be completed.	This is mandatory for each and every location.
	2.	All unauthorised personnel must be excluded from the WORK AREA for the entire duration of work activities.	Unauthorised persons include anyone not directly associated with the work activities. If unauthorised persons are required to enter the WORK AREA, all work must cease until the area is cleared.
	3.	All tools and plant must be kept inside the WORK AREA at all times.	Special care should be taken with placement of hoses etc. both inside and outside the WORK AREA. These can create significant trip hazards
	4.	All necessary PPE as outlined in the HSEP must be worn during the identified work activities.	
	5.	Constant LEL monitoring must be provided for all ignition sources. Undertake continuous LEL gas monitoring of atmosphere proximal to the hazardous equipment AT ALL TIMES with calibrated LEL Gas Detector. Check and record the Work Area every two hours.	The monitor must be operated in a location that takes into account the prevailing wind direction. The drill-rig and electrical equipment constitute potential IGNITION SOURCES. An IGNITION SOURCE within a HAZARDOUS ZONE = HOT WORK. Document LEL calibration and monitoring results on <b>Gas</b> / <b>Vapour Test Certificate</b> .
-	6.	During concrete coring ensure power leads and water hoses do not cross trafficable forecourt area;	All power leads must be tagged with a current safety compliance tag.
	7.	Position mobile equipment inside WORK AREA Whenever a drilling rig or other large vehicle is required to travel in reverse, a spotter must be available while the vehicle is in motion.	During drill-rig setup, ensure all personnel are clear and in visual contact with the driver, all jacks are clear of surface infrastructure and there is no collision hazard with site infrastructure. Maintain safe working distance from overhead power lines - 3m radius for low voltage / 6m radius for high voltage;
	8.	Maintain adequate work space inside WORK AREA	Refer to item 10 in Section A
	9.	All waste soil and groundwater must be stored in sealed and appropriately labelled drums.	Arrangements should be made for prompt use of drums

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## URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Permit Validation**

No works are to be commenced until this permit is signed by the site supervisor and all contractors. By signing this permit validation it is expected that all documentation is complete and all precautions are in place to undertake work in a manner that protects the safety of all site personnel and minimises the risk of damage to property and impacts to the environment.

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Permit authorisation period is from:Sam/pm Until :Sam/om
As site supervisor, I authorise the activities as outlined in the Scope Of Work to be undertaken and equipment listed to be used subject to the precautions and safety measures identified in this Safe Work Procedure & Permit.
Date of Work: 13 MAY 2009
URS Site Supervisor. LUICE ALEXANDER
Signature:

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# **URS** SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **Drilling Checklist**

This checklist must be completed before drilling is undertaken for each and every location. Drilling must not commence at any location until the location is cleared as per the SUB SURFACE CLEARANCE PROTOCOL.

Note: Under no circumstances can drilling proceed without the location being cleared as specified in the Mobil Sub Surface Clearance Protocol.

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MW07	
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Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Gas/Vapour Test Certificate

All readings carried out with an LEL gas detector must be recorded on the table below. The instrument used must be in good working order and have a current calibration certificate.

If at any time the LEL Gas Detector becomes faulty, the hazardous work must be terminated until a reliable instrument is made available.

The LEL gas detector must be challenged tested at the beginning of each day. The instrument should show an increased LEL reading and quickly return to zero.

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Time	LEL %	Return to Zero, Y/N	Site Supervisor (signature)	Comments	
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Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **Work Completion Checklist**

At the completion of the days activities the following checks should be carried out

	Action	Comments	Complete
1.	All tools and equipment should be removed from the site		
2.	Reinstate surface of work area on completion of each days activities	Area must be resealed and the area dry swept where required.	
3.	All isolations put in place to commence the work must be removed.		
4.	All permits can now be signed off	·	· · · · ·

## Site Recommissioning Stenor

All activities at the site are complete. The site has been left in a clean and safe state and all isolations have been removed.

URS Site Supervisor LULE ALEXANDER

Time..... Signature:

Issue No:	V10		
Issue Date:	10 <sup>th</sup> October 2007		
Author	John Petersen – URS MEL		
Reviewed By	Clive Hillier - Exxonmobil		
Authorised By:	Jeff Smith URS MEL		

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Issue Date: 8<sup>h</sup>

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## URS

#### SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

Date 8 14 05 09	
URS Site Supervisor LUKE ALEXANDER	Site Name: FMSS Merrimbula
Contact Phone: 0437470 241 GRAPM: Nikki Maksinovic	Address: Market St. Merrimbula
Contact Phone:	······

#### SECTION A - SAFE WORK PROCEDURE

When the completed AIP permit indicates additional authorisation or work permit is required, this procedure and attached checklist must be completed to undertake routine hazardous and intrusive activities;

- At the beginning of each day before any activities commence.
- Whenever the workgroup or site supervisor changes.

This Safe Work Procedure applies to Mobil controlled sites or Mobil GR controlled activities at the following facilities only. Please indicate  $\checkmark$  facility type below.

Service Stations operating or closed,

Operating depots (unless another on site Permit System takes precedence),

Closed or non-operating depots and retail facilities at depots.

Aviation depot (small, country)

All off-sites works adjacent to the above sites where URS is working for Mobil ie a Mobil GR controlled activity.

This Permit CANNOT be used for the following;

- Works on large aviation facilities
- Works on refineries or refinery controlled activities
- · Works on terminals or terminal controlled activity.

Any deviations from the above definitions must be approved in writing by both the

- URS Asia Pacific HSE Manager and
- Mobil Team Leader

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

#### **Routine Hazardous and Intrusive Activities**

This permit can only be issued for activities where the equipment listed below is used.

Note: For activities that require the use of equipment not listed below, a separate Mobil Work Permit must be issued.

		nomeni tazano similin anon a ta Aninatiza (neehisi - 1995)	
Exist Y/N	Plant and equipment to be used in Hazardous areas	Controls to enable equipment to be operated safely in hazardous areas	Initial when in place
Ч	Motor vehicles	PID/LEL monotoning, caution whilst moving around site. High vis	LA
4	Drill rig	* **	LA
N	Vacuum truck (used for Non Destructive Digging Only)		
ง	Electric concrete corer		
で	Petrol driven concrete corer		
N	Generator		·
N	Compressor		
Y	Wet vac		LA
Y	Interface probe	PID / LEL monitoring	LA
N	Chem. kit		
N	Service locating equipment		
N	Survey equipment		
Ч	Vapour monitoring equip.	Intrinsichy safe PiD/LEL monitoring. limit Use	LA
Ч	Digital camera	PUD/LEL monitoring. limit use	LA

#### Location of Works

Location	Yes/No
On Site	Yes
Off Site	No
Hazardous area	Yes
Critical Zone*	No

\* Intrusive works in the Critical Zone can only proceed with approval from

- URS Asia Pacific HSE Manager and
- Mobil Team Lead

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

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# URS SAFE WORK PROCEDURE & PERMIT

#### Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

The procedure and checklist must be signed off as complete at the end of each day when all site activities are complete at the site has been left in a safe a clean state.

It is expected that upon arrival at any site, a "Take 5" assessment will be carried out and recorded by employees before preparation for work activities commences.

### **Preparations for Hazardous Work Activities**

	Action	Comments	Initial when Complete or N/A
1.	Evaluate local traffic conditions with site operator and establish a traffic control program in accordance with the Mobil Traffic Management Plan	The traffic management plan must ensure the safety of all workers at the site. Work areas shall be set up so traffic can clearly see the barricades or workers.	LA
2.	Where works are undertaken off site, a current traffic management plan approved by local authorities must be available at the site.	This shall incorporate the engagement of traffic management subcontractors. And should be prepared well in advance of any site activities.	NIA
3.	Works that require the introduction of an ignition source require a survey of the WORK AREA with an LEL meter prior of commencement of on site and offsite	No work shall commence until the WORK AREA has been cleared with an LEL meter. The survey must be redene each time a	UA -
	works.	The survey must be redone each time a new WORK AREA is established at the site. Gas detector survey results are to be recorded on the attached gas vapour test certificate.	
4.	Before any intrusive work commences, a thorough survey must be completed to identify all aboveground and below ground services that may be impacted by the proposed intrusive activities.	Below ground services shall be clearly identified and marked as per the Exxonmobil sub surface clearance procedure.	LQ.
5.	Subsurface Clearance Protocol checklist must be completed and faxed to Mobil GRAPM and the URS Project Manager	This should be done at least 24hours before work commences. A copy of the sub surface procedure and checklist should be kept on site with the file documentation.	LA.
6.	Complete AIP "WORK CLEARANCE FORM" and visually confirm defined AIP "HAZARDOUS AREAS" onsite;	AIP "WORK CLEARANCE FORM" must be completed on every site regardless of the proposed activities.	uA
7.	Ensure the Scope of Work as outlined in the HSEP clearly describes all activities planned for the site for the day.	The Scope of Work should clearly identify all steps in the proposed work.	LA

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Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

8.	Conduct a toolbox meeting with all	All contractors must be familiar with the	
	contractors indicating the specific requirements for the day's activities. Induct all personnel to site using the site specific URS Health Safety & Environment Plan.	Scope of Work, and the specific requirements outlined in the HSEP before any activities are undertaken. All contractors must sign on to the HSEP before activities commence All PPE must be available and ready for use.	LA
9.	Check the condition of the contractor's equipment and ensure contractors have current maintenance records of plant and equipment.	All equipment should be in a sound state with no obvious signs of damage. All electrical leads must be tagged with a current electrical compliance tag.	LA
10.	Define exclusion zone around WORK AREA to ensure adequate work space is available for the proposed activities.	In addition to using a vehicle for protection, this should be done using 1m high bollards caution tape and signage.	LA
11.	Place 2 x 9kg Dry Chem. fire extinguishers inside the WORK AREA	Fire extinguishers should have a current service stamp, a security pin in place and be placed at a location that takes prevailing wind conditions into account.	∧ت
12.	Undertake mechanical and electrical isolation of all equipment including fuel dispensers inside HAZARDOUS AREAS where hazardous or intrusive activities are being undertaken. This must be done prior to commencement of works	The standard required for isolation must render the equipment inside the HAZARDOUS AREA inoperable. Refer to Equipment Isolation Certificate for adequate isolation standards.	NIA
13.	Complete the attached Safe Work Procedure Checklist		LA

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## AREA DEFINITIONS

### WORK AREA :

• Radius from location of active works that provides adequate space to undertake the work safely. Nominally 5m.

### HAZARDOUS ZONE :

- 4m radius around fuel dispensers.
- 5m radius around LPG pump, tank and decant cylinders
- 4m radius around UST Dip/Fill points
- 1.5m radius around tank vents
- 1.5m radius around open wells.

### **CRITICAL ZONE :**

A detailed description of the critical zone can be referenced in the following document.

Global Remediation OIMS Manual System 3 – Design Practices / Project Management.

This includes

- 3m distance from all sub-surface electrical lines and gas supply lines.
- 3m distance from edge of tanks (including decommissioned tanks),
- 3m distance from operating dispenser islands and suspected underground lines and entire area between tank field and dispensers\*.

\*Refer to attached example of critical zone around fuel systems.

Issue	No:
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Issue	Date:

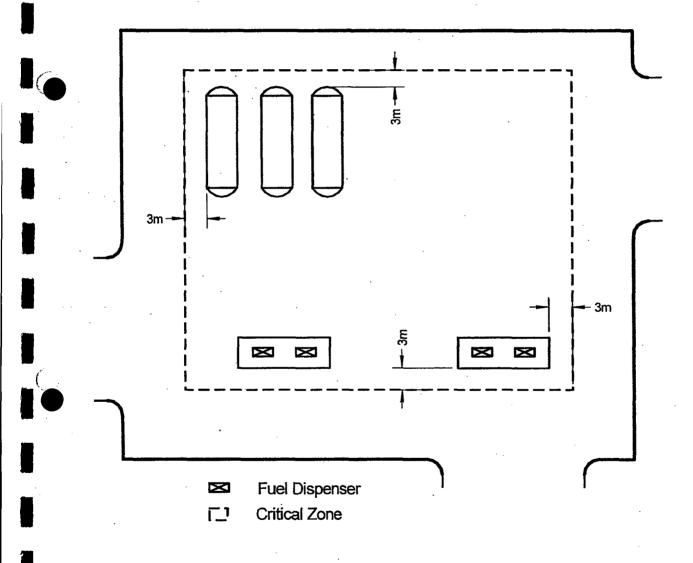
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# **URS** SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **Critical Zone Around Fuel Systems**

The following shows the Critical Zone on a typical service station fuel system



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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

#### **SAFE WORK PERMIT – WORK PREPARATION CHECKLIST**

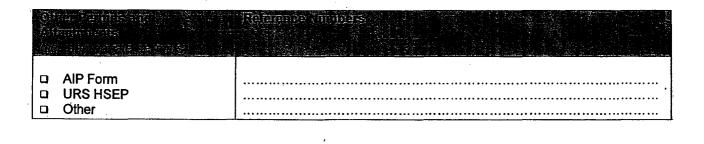
Complete this form before each day of site works.

HOT WORK: is work which may create a spark with sufficient energy to ignite flammable gases or combustible dusts. This situation may arise due to the work being conducted or the equipment introduced to carry out the work and includes drilling.

COLD WORK: is work where there is no possibility of developing an ignition source anywhere within a Hazardous Area whether flammable gases are or are not present.

#### Scope Of Work

Sup D nondset detrins	Non-Elled some of concerns to norther molecular sets to the sets t
□ Cold Work ➡ Hot Work □ Drilling	Access site Toolbox
Note: This permit is not to be used for other activities such as excavation or tank removal.	Setup rig Drill with pushtuke [ soil sampling Drill with hollow flight augus Install monitoring well Install monitoring well Install roadbox Develop well Leave site



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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Hazard Identification

The following hazard identification checklist must be completed before this permit can be issued.

			Frank Gennnangen and Aller norken sellst	
	Exist Y/N	Hazards	Precautions/methods to control hazards	Initial when in place
	Ч	Flammable Vapour	PID / LEL monitoring. Stop worke if detected.	LA
	N	Product (Liquids)		
	N	Sludges Solids	· · · · · · · · · · · · · · · · · · ·	
	4	Sewers Drains	Block off stormwater drains &	4
ĺ	2	Dust		
	4	Services (below ground)	Only drill in cleared locations.	Lis
	ч	Services (overhead)	caution when raising mast	LA
	ч	Traffic	High vis, caution	LA
4	<b>X</b>	Gravity (what can fall)	Helmets + caution	19
	Ч	Inertia (what can move)	Caution. High vis	LA
		Slip/Trip Hazards	Clean + tidy work area. Aware of uneven	LA
	Ч	Manual Handling	share loads, SAFE lifting	UA
	Ч	Open excavations	Barricade boreholes.	
	N	Heat		
	で	Combustible rubbish	·	
	N	Access Problems		
/	N	Other Site Activities		
		Other (Specify)		

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Fuel Dispenser Isolation Certificate (Mandatory)

When intrusive work is undertaken inside the Hazardous Area, electrical equipment within that Hazardous Area must be isolated prior to the commencement of work.

## Intrusive work within the Critical Zone is not permitted without the written approval of Mobil and the URS Health & Safety Manager.

To satisfactorily isolate equipment, one of the following methods shall be applied:

#### Method 1

- Electrically isolate the dispenser by opening the circuit breaker at the mains power supply board.
- Place a DO NOT OPERATE tag on the circuit breaker.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

#### Method 2

- Request the consol operator to isolate the equipment at the dispensing consol.
- Place a DO NOT OPERTATE tag on the isolation switch.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

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Equipment to be Isolated	Isolation Method (Method 1 or 2)	Isolation Established by		Isolation Withdrawn		ndrawn	
		Date	Time	Signature	Date	Time	Signature
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# **URS** SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Safe Work Procedure - Precautions**

The following precautions must be taken when undertaking hazardous or intrusive activities on or off site.....

_ [		Action	Comments
	1.	Before any drilling is commenced, the drilling checklist must be completed.	This is mandatory for each and every location.
	2.	All unauthorised personnel must be excluded from the WORK AREA for the entire duration of work activities.	Unauthorised persons include anyone not directly associated with the work activities. If unauthorised persons are required to enter the WORK AREA, all work must cease until the area is cleared.
	3.	All tools and plant must be kept inside the WORK AREA at all times.	Special care should be taken with placement of hoses etc. both inside and outside the WORK AREA. These can create significant trip hazards
	4.	All necessary PPE as outlined in the HSEP must be worn during the identified work activities.	
	5.	Constant LEL monitoring must be provided for all ignition sources. Undertake continuous LEL gas monitoring of atmosphere proximal to the hazardous equipment AT ALL TIMES with calibrated LEL Gas Detector. Check and record the Work Area every two hours.	The monitor must be operated in a location that takes into account the prevailing wind direction. The drill-rig and electrical equipment constitute potential IGNITION SOURCES. An IGNITION SOURCE within a HAZARDOUS ZONE = HOT WORK. Document LEL calibration and monitoring results on <b>Gas</b> / <b>Vapour Test Certificate</b> .
	6.	During concrete coring ensure power leads and water hoses do not cross trafficable forecourt area;	All power leads must be tagged with a current safety compliance tag.
	7.	Position mobile equipment inside WORK AREA Whenever a drilling rig or other large vehicle is required to travel in reverse, a spotter must be available while the vehicle is in motion.	During drill-rig setup, ensure all personnel are clear and in visual contact with the driver, all jacks are clear of surface infrastructure and there is no collision hazard with site infrastructure. Maintain safe working distance from overhead power lines - 3m radius for low voltage / 6m radius for high voltage;
	8.	Maintain adequate work space inside WORK AREA	Refer to item 10 in Section A
	9.	All waste soil and groundwater must be stored in sealed and appropriately labelled drums.	Arrangements should be made for prompt use of drums

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit- Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Permit Validation**

No works are to be commenced until this permit is signed by the site supervisor and all contractors. By signing this permit validation it is expected that all documentation is complete and all precautions are in place to undertake work in a manner that protects the safety of all site personnel and minimises the risk of damage to property and impacts to the environment.

an an an an ann an A The She ann an Ann a
Permit authorisation period is from:?ampm Until :ampm
As site supervisor, I authorise the activities as outlined in the Scope Of Work to be undertaken and equipment listed to be used subject to the precautions and safety measures identified in this Safe Work Procedure & Permit.
URS Site Supervisor: LYKE ALEXANDER

Print Name	Signature	Date
Craig Emme	fre.	14-5-09
Craig Emme Share Barnes	Banes	14.5.9
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Issue No:

Issue Date: 8<sup>h</sup> I

8<sup>h</sup> May 2008

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Drilling Checklist**

This checklist must be completed before drilling is undertaken for each and every location. Drilling must not commence at any location until the location is cleared as per the SUB SURFACE CLEARANCE PROTOCOL.

Note: Under no circumstances can drilling proceed without the location being cleared as specified in the Mobil Sub Surface Clearance Protocol.

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# URS SAFE WORK PROCEDURE & PERMIT

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### **Gas/Vapour Test Certificate**

All readings carried out with an LEL gas detector must be recorded on the table below. The instrument used must be in good working order and have a current calibration certificate.

If at any time the LEL Gas Detector becomes faulty, the hazardous work must be terminated until a reliable instrument is made available.

The LEL gas detector must be challenged tested at the beginning of each day. The instrument should show an increased LEL reading and quickly return to zero.

	n Stellenge	<b>4</b> 51			7(
Time	LEL %	Return to Zero. Y/N	Site Supervisor (signature)	Comments	
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Location / Time	LEL %	Tester initials	Site Supervisor (şignature)	Comments
Work zone llam	0	LA	Her	
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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Work Completion Checklist**

At the completion of the days activities the following checks should be carried out

	Action	Comments	Complete
1.	All tools and equipment should be removed from the site		
2.	Reinstate surface of work area on completion of each days activities	Area must be resealed and the area dry swept where required.	
3.	All isolations put in place to commence the work must be removed.		
4.	All permits can now be signed off	·	

## Site Recommissioning Senot

All activities at the site are complete. The site has been left in a clean and safe state and all isolations have been removed.

URS Site Supervisor	ALEXANDER
Signature:	

Issue No:	V10
Issue Date:	10 <sup>th</sup> October 2007
Author	John Petersen – URS MEL
Reviewed By	Clive Hillier - Exxonmobil
Authorised By:	Jeff Smith URS MEL

URS Australia

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## URS

#### SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

JRS Site NURM RUND	Site FMSS Nermhelle
Contact Phone: 0403603 013	·····
Contact Phone: 0408603 013 GRAPM: Nikki MAKSLMOVIC	Address: Manel- SH
Contact Phone:	Address: Manuel-SH Mer.m.hula
ECTION A - SAFE WORK PROCEDURE	
<ul> <li>When the completed AIP permit indicates addition procedure and attached checklist must be compleactivities;</li> <li>At the beginning of each day before any act</li> <li>Whenever the workgroup or site supervisor</li> </ul>	leted to undertake routine hazardous and intrusive
<ul> <li>procedure and attached checklist must be compleactivities;</li> <li>At the beginning of each day before any act</li> <li>Whenever the workgroup or site supervisor</li> </ul>	leted to undertake routine hazardous and intrusive ivities commence. changes. rolled sites or Mobil GR controlled activities at the
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- Works on large aviation facilities
- Works on refineries or refinery controlled activities
- Works on terminals or terminal controlled activity.

Any deviations from the above definitions must be approved in writing by both the

- URS Asia Pacific HSE Manager and
- Mobil Team Leader

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

#### Routine Hazardous and Intrusive Activities

This permit can only be issued for activities where the equipment listed below is used.

Note: For activities that require the use of equipment not listed below, a separate Mobil Work Permit must be issued.

		in neuezzar theating an exact theating the subst	
Exist Y/N	Plant and equipment to be used in Hazardous areas	Controls to enable equipment to be operated safely in hazardous areas	Initial when in place
1	Motor vehicles	PDO/ UK2 Menthon	ex
N	Drill rig		
N	Vacuum truck (used for Non Destructive Digging Only)		
N	Electric concrete corer		
V	Petrol driven concrete corer		
N	Generator		
N	Compressor		
N	Wet vac		
N	Interface probe	PED LE Monikov	M
7	Chem. kit		M
N	Service locating equipment		
N	Survey equipment		
N,	Vapour monitoring equip.	Intrike cally call	NK
V	Digital camera	ASD/LEC MONIBOR	A

#### **Location of Works**

Location	Yes/No
On Site	Y'
Off Site	
Hazardous area	
Critical Zone*	N

#### \* Intrusive works in the Critical Zone can only proceed with approval from

- URS Asia Pacific HSE Manager and
- Mobil Team Lead

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#### SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

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The procedure and checklist must be signed off as complete at the end of each day when all site activities are complete at the site has been left in a safe a clean state.

It is expected that upon arrival at any site, a "Take 5" assessment will be carried out and recorded by employees before preparation for work activities commences.

### **Preparations for Hazardous Work Activities**

	Action	Comments	Initial when Complet <del>e</del> or N/A
1.	Evaluate local traffic conditions with site operator and establish a traffic control program in accordance with the Mobil Traffic Management Plan	The traffic management plan must ensure the safety of all workers at the site. Work areas shall be set up so traffic can clearly see the barricades or workers.	
2.	Where works are undertaken off site, a current traffic management plan approved by local authorities must be available at the site.	This shall incorporate the engagement of traffic management subcontractors. And should be prepared well in advance of any site activities.	
3.	Works that require the introduction of an ignition source require a survey of the WORK AREA with an LEL meter prior of commencement of on site and offsite works.	No work shall commence until the WORK AREA has been cleared with an LEL meter. The survey must be redone each time a new WORK AREA is established at the site. Gas detector survey results are to be recorded on the attached gas vapour test certificate.	R/R_
4.	Before any intrusive work commences, a thorough survey must be completed to identify all aboveground and below ground services that may be impacted by the proposed intrusive activities.	Below ground services shall be clearly identified and marked as per the Exxonmobil sub surface clearance procedure.	
5.	Subsurface Clearance Protocol checklist must be completed and faxed to Mobil GRAPM and the URS Project Manager	This should be done at least 24hours before work commences. A copy of the sub surface procedure and checklist should be kept on site with the file documentation.	
6.	Complete AIP "WORK CLEARANCE FORM" and visually confirm defined AIP "HAZARDOUS AREAS" onsite;	AIP "WORK CLEARANCE FORM" must be completed on every site regardless of the proposed activities.	MR
7.	Ensure the Scope of Work as outlined in the HSEP clearly describes all activities planned for the site for the day.	The Scope of Work should clearly identify all steps in the proposed work.	MR

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#### SAFE WORK PROCEDURE & PERMIT

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8.	Conduct a toolbox meeting with all	All contractors must be familiar with the	
	contractors indicating the specific	Scope of Work, and the specific	
	requirements for the day's activities. Induct	requirements outlined in the HSEP before	111
	all personnel to site using the site specific	any activities are undertaken. All	M
	URS Health Safety & Environment Plan.	contractors must sign on to the HSEP	
		before activities commence All PPE must	
	· .	be available and ready for use.	
9.	Check the condition of the contractor's	All equipment should be in a sound state	
	equipment and ensure contractors have	with no obvious signs of damage. All	
	current maintenance records of plant and	electrical leads must be tagged with a	
	equipment.	current electrical compliance tag.	
10.	Define exclusion zone around WORK	In addition to using a vehicle for	10
	AREA to ensure adequate work space is	protection, this should be done using 1m	IM
	available for the proposed activities.	high bollards caution tape and signage.	
11.	Place 2 x 9kg Dry Chem. fire extinguishers	Fire extinguishers should have a current	
	inside the WORK AREA	service stamp, a security pin in place and	
		be placed at a location that takes	M
·	·	prevailing wind conditions into account.	<u> </u>
12.	Undertake mechanical and electrical	The standard required for isolation must	
	isolation of all equipment including fuel	render the equipment inside the	
	dispensers inside HAZARDOUS AREAS	HAZARDOUS AREA inoperable. Refer to	
	where hazardous or intrusive activities are	Equipment Isolation Certificate for	1
	being undertaken. This must be done prior	adequate isolation standards.	1
	to commencement of works		
13.			AN
	Procedure Checklist		, . , .

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

## **AREA DEFINITIONS**

### WORK AREA :

• Radius from location of active works that provides adequate space to undertake the work safely. Nominally 5m.

### HAZARDOUS ZONE :

- 4m radius around fuel dispensers.
- 5m radius around LPG pump, tank and decant cylinders
- 4m radius around UST Dip/Fill points
- 1.5m radius around tank vents
- 1.5m radius around open wells.

### **CRITICAL ZONE :**

A detailed description of the critical zone can be referenced in the following document.

Global Remediation OIMS Manual System 3 – Design Practices / Project Management.

This includes

- 3m distance from all sub-surface electrical lines and gas supply lines.
- 3m distance from edge of tanks (including decommissioned tanks),
- 3m distance from operating dispenser islands and suspected underground lines and entire area between tank field and dispensers\*.

\*Refer to attached example of critical zone around fuel systems.

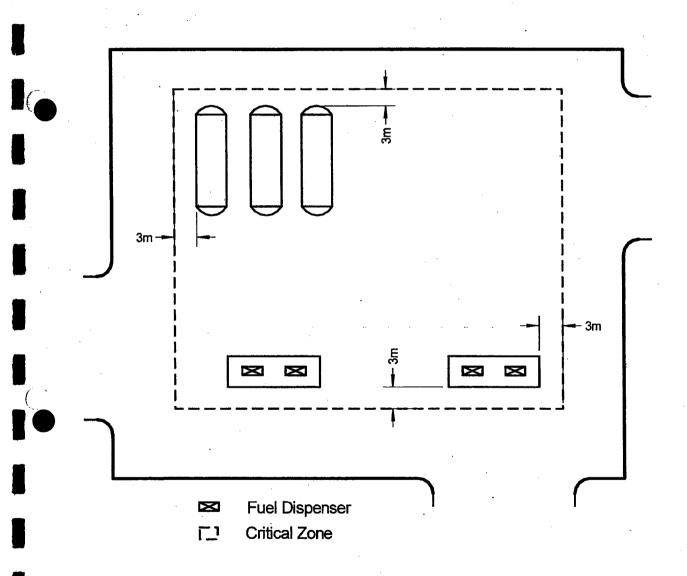
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# **URS** SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Critical Zone Around Fuel Systems**

The following shows the Critical Zone on a typical service station fuel system



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### **SAFE WORK PERMIT – WORK PREPARATION CHECKLIST**

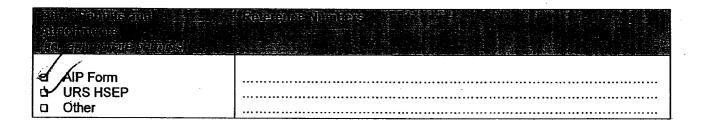
Complete this form before each day of site works.

HOT WORK: is work which may create a spark with sufficient energy to ignite flammable gases or combustible dusts. This situation may arise due to the work being conducted or the equipment introduced to carry out the work and includes drilling.

COLD WORK: is work where there is no possibility of developing an ignition source anywhere within a Hazardous Area whether flammable gases are or are not present.

#### Scope Of Work

When our area to see a set of the	- A GREEKER STORE AT AN
<ul> <li>Cold Work</li> <li>Hot Work</li> <li>Drilling</li> </ul>	UME - Purez & Gample MWEL- MWET (As per HSEP)
Note: This permit is not to be used for other activities such as excavation or tank	
removal.	
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## URS SAFE WORK PROCEDURE & PERMIT

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#### Hazard Identification

The following hazard identification checklist must be completed before this permit can be issued.

		Terronologinal and an and a state of the sta	
Exist Y/N	Hazards	Precautions/methods to control hazards	Initial when in place
Y	Flammable Vapour	120/LEL Monthoring	in
Ń	Product (Liquids)		
N	Sludges Solids		
V	Sewers Drains		
W	Dust		
N	Services (below ground)		
W	Services (overhead)		
M	Traffic	Hi Us & secure usere anea	IN
N	Gravity (what can fall)		K
Y	Inertia (what can move)	GUUP MULSAUGPARA	in
4	Slip/Trip Hazards		in
Y	Manual Handling	SAPE liftus / When up	in
N,	Open excavations		
N	Heat		
N.	Combustible rubbish		
M,	Access Problems	· · · · · · · · · · · · · · · · · · ·	;
N	Other Site Activities		
N	Other (Specify)	RATU- Re careful working must	M

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

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## Intrusive work within the Critical Zone is not permitted without the written approval of Mobil and the URS Health & Safety Manager.

To satisfactorily isolate equipment, one of the following methods shall be applied:

#### Method 1

- Electrically isolate the dispenser by opening the circuit breaker at the mains power supply board.
- Place a DO NOT OPERATE tag on the circuit breaker.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

#### Method 2

- Request the consol operator to isolate the equipment at the dispensing consol.
- Place a DO NOT OPERTATE tag on the isolation switch.
- Test the equipment to ensure it is de-energised.
- Place a lock on the dispensing hose to ensure it cannot be removed.
- Place an OUT OF SERVICE sign on equipment.

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Equipment to be Isolated	<ul> <li>Isolation Method (Method 1 or 2)</li> </ul>	Isolatio	n Establis	shed by		tion With	-
		Date	Time	Signature	Date	Time	Signature
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# URS SAFE WORK PROCEDURE & PERMIT

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### **Safe Work Procedure - Precautions**

The following precautions must be taken when undertaking hazardous or intrusive activities on or off site.

	Action	Comments
1.	Before any drilling is commenced, the drilling checklist must be completed.	This is mandatory for each and every location.
2.	All unauthorised personnel must be excluded from the WORK AREA for the entire duration of work activities.	Unauthorised persons include anyone not directly associated with the work activities. If unauthorised persons are required to enter the WORK AREA, all work must cease until the area is cleared.
3.	All tools and plant must be kept inside the WORK AREA at all times.	Special care should be taken with placement of hoses etc. both inside and outside the WORK AREA. These can create significant trip hazards
4.	All necessary PPE as outlined in the HSEP must be worn during the identified work activities.	
5.	Constant LEL monitoring must be provided for all ignition sources. Undertake continuous LEL gas monitoring of atmosphere proximal to the hazardous equipment AT ALL TIMES with calibrated LEL Gas Detector. Check and record the Work Area every two hours.	The monitor must be operated in a location that takes into account the prevailing wind direction. The drill-rig and electrical equipment constitute potential IGNITION SOURCES. An IGNITION SOURCE within a HAZARDOUS ZONE = HOT WORK. Document LEL calibration and monitoring results on <b>Gas</b> / <b>Vapour Test Certificate</b> .
6.	During concrete coring ensure power leads and water hoses do not cross trafficable forecourt area;	All power leads must be tagged with a current safety compliance tag.
7.	Position mobile equipment inside WORK AREA Whenever a drilling rig or other large vehicle is required to travel in reverse, a spotter must be available while the vehicle is in-motion.	During drill-rig setup, ensure all personnel are clear and in visual contact with the driver, all jacks are clear of surface infrastructure and there is no collision hazard with site infrastructure. Maintain safe working distance from overhead power lines - 3m radius for low voltage / 6m radius for high voltage;
8.	Maintain adequate work space inside WORK AREA	Refer to item 10 in Section A
9.	All waste soil and groundwater must be stored in sealed and appropriately labelled drums.	Arrangements should be made for prompt use of drums

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Permit Validation**

No works are to be commenced until this permit is signed by the site supervisor and all contractors. By signing this permit validation it is expected that all documentation is complete and all precautions are in place to undertake work in a manner that protects the safety of all site personnel and minimises the risk of damage to property and impacts to the environment.

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Permit authorisation period is from: BGMam/pm Until : BOD arrow
As site supervisor, I authorise the activities as outlined in the Scope Of Work to be undertaken and equipment listed to be used subject to the precautions and safety measures identified in this Safe Work Procedure & Permit.
URS Site Supervisor. NILM ROMS
Signature

Print Name		Signature	Date _
MICHAEL BROWN	- <u>·</u>	MBON	21/5/2009
MICHAEL BROWN FRANK THOW		F. Now	
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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Drilling Checklist

This checklist must be completed before drilling is undertaken for each and every location. Drilling must not commence at any location until the location is cleared as per the SUB SURFACE CLEARANCE PROTOCOL.

Note: Under no circumstances can drilling proceed without the location being cleared as specified in the Mobil Sub Surface Clearance Protocol.

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# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### Gas/Vapour Test Certificate

All readings carried out with an LEL gas detector must be recorded on the table below. The instrument used must be in good working order and have a current calibration certificate.

If at any time the LEL Gas Detector becomes faulty, the hazardous work must be terminated until a reliable instrument is made available.

The LEL gas detector must be challenged tested at the beginning of each day. The instrument should show an increased LEL reading and quickly return to zero.

Time	LEL %	Return to Zero, Y/N	Site Supervisor (signature)	Comments
9. Wam	496	Y	Non	ore

CES MEDTH	ុះនេះ ទំនេះកក្រំអ			
Location / Time	LEL %	Tester initials	Site Supervisor (signature)	Comments
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			· · · · · · · · · · · · · · · · · · ·	
·····				

V11 8<sup>h</sup> May 2008

# URS SAFE WORK PROCEDURE & PERMIT

Safe Work Procedure & Permit– Applicable for routine remediation and environmental activities conducted by URS on behalf of Mobil Oil Australia Pty Ltd under Services Outline Agreement (July 2002).

### **Work Completion Checklist**

At the completion of the days activities the following checks should be carried out

	Action	Comments	Complete
1.	All tools and equipment should be removed from the site		IK
2.	Reinstate surface of work area on completion of each days activities	Area must be resealed and the area dry swept where required.	NK
3.	All isolations put in place to commence the work must be removed.		NX
4.	All permits can now be signed off		IR

#### Sie Recommissioning Steining Steining The Stein Jacobios sempli view areaen on acommission

	are complete. The site	has been left in a c	clean and safe state and all isolations have
been removed.	Alaci	Parta	
URS Site Supervisor	NMM	rens	· · · · · · · · · · · · · · · · · · ·
Time	715		
14110	N.	2 .1	
Signature:	$\mathcal{I}\mathcal{I}\mathcal{I}^{\mathcal{I}}$	$D \mathcal{D}$	

Issue No:	V10
Issue Date:	10 <sup>th</sup> October 2007
Author	John Petersen – URS MEL
Reviewed By	Clive Hillier - Exxonmobil
Authorised By:	Jeff Smith URS MEL

URS Australia

Safe Work Procedure

( )

## Appendix A Induction Register

Project Title	Mobil Merimbula Post Phase 2 NO1063	
Project Number	HSEP.01	
Date Prepared / Issued	5/05/2009	

I have read and understand the contents of this Health, Safety and Environment Plan and hereby agree to abide by its provisions and follow the directions of the person in control of the works.

URS Site Supervis

I understand that it is in my best interest to see that site operations are conducted in the safest manner possible; therefore, I will be alert to site health, safety and environmental conditions at all times. I also understand I have authority to stop the work if I become aware of an unsafe condition or unsafe act.

Name	Company	Signature 1	Date a
DANAL CROTCHE	Daus	in	13-5-9
CRAIL MEHAM	VIL SMART	Im	13.50%
Por Box	CONTRILL	A Bon	13.5.09
Thanebaines	MAC DRill	Barnes	14.5.9
Gaig Emme	Mac Drill	and a	14-5-9
NORM ROVIS	VIRS	Mori	21/5/09
MICK BROWN	Caddey Scorl Jama	n MRO	21/5/09
FRANK THOW	ı' ı. ı.	F. Thow	21 5/09
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			·

Confidential - Subject to Legal Professional Privilege

Date	13/05/09	Job Name:	Job Number: 42424195					
Field Staff:	L. Alexo	nder		·.	Projec	t Manager:	TO	NUS
Weather:	Clear,	6001						
TEM	PID	Explosimeter	Ac	idity_	Conductivity	RedOx	DO	Benzerie
Units	ppm	%LEL	pH	рН	uS/cm	mν	ppm	1
Model	MUHILAE	MUHIBAE-M						
Serial Number	080-001154	080-001154						
Calibration Standard	Bobulylene	CH4					_	
	100 ppm	SO%						
Calibration Reading	101 ppm	49 %						* .
Calibration Time	0730	0735						
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Field Staff Signature:		4400	e	~~~~~				
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URS						Daily (	Calibrati	on Shee
Date	14509	Job Name:	Mern	mbula			42424	
Field Staff:	L. Alex	iander	/	• ••••••	Proje	ct Manager	T. 0	262
Weather:	Clear,	cool .		<u></u>		·····		
ITEM	PID	Explosimeter	1	Acidity	Gonductivity	RedOx	DO	Benzene
Units	ppm	%LEL	pH	pH	uS/cm	mV	ppm	1
Model	MULLIBAE-IR							
Serial Number		080-201154			· ·			
Calibration Standard								
Concentration	Kobulylene 100 ppm	507						
Calibration Reading	99.2	50%						
Calibration Time	0740	0745						
Comments	ok	ok						
Checks		11 ~~~						<u> .</u>
Time Reading	98.9	11.00						+
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Neather:     Addity     Conductivity     RedOx     DO     Benzene       Inits     ppm     % LEL     pH     pH     pH     uS/cm     mV     ppm       Addel     DO/RUXK RUBE     GT     IIII     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	URS	uls(m	Job Name:	Moh, 12	<del>ss Met</del> ii	mbula .	Daily C		on Sheet	]
TEM       PID       Explosimeter       Addity       Conductivity       RedOx       DO       Benzene         Jnits       ppm       % LEL       pH       pH       uS/cm       mV       ppm         Adde       PLO/ALASK       CRAFE       G       1213       mV       ppm         Serial Number       Salibration       Salibration       GUA       GUA       GUA       GUA         Datibration       Salibration       Salibration       Salibration       GUA       GUA       GUA       GUA         Datibration       Salibration       Salibration       GUA       GUA       GUA       GUA       GUA       GUA         Datibration       GUA	Field Staff:	NIL	· · · · · · · · · · · · · · · · · · ·			] Proje	ect Manager:	7.0K	MS	]
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Berlai Number	Units	ppm			pН		mV	ppm		·
Calibration Standard     Downlow     Mortin-e     Substantion       Concentration     Substantion     Substantion     Substantion       Calibration Time     Give     Give     Give       Calibration Time     Give     Give     Give       Comments     Give     Give     Give       Comments     Give     Give     Give       Comment     Give     Give     Give       Give     Give     Give     Give       Comment     Give     Give     Give       Give     Give     Give     Give       Give     Give     Give     Give       Give     Give     Give     Give </td <td></td> <td></td> <td>Cakrit SJ</td> <td></td> <td></td> <td>143</td> <td></td> <td></td> <td></td> <td></td>			Cakrit SJ			143				
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## Appendix B Registered Bore Information

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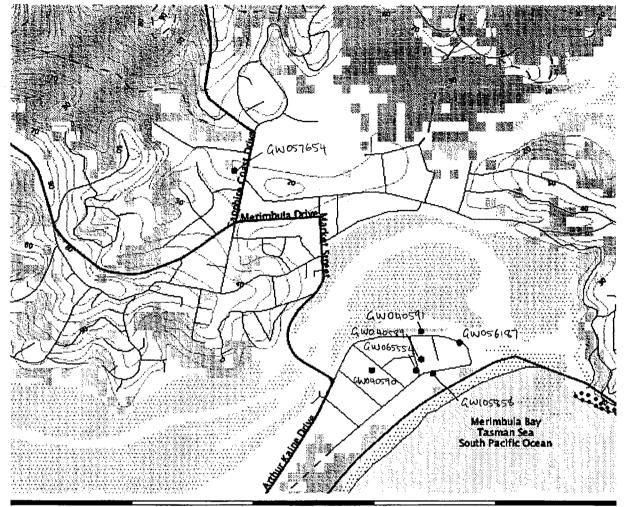


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### Merimbula

Map created with NSW Natural Resource Atlas - http://nratlas.nsw.gov.au

Wednesday, June 03, 2009



#### 0

### Legend

Symbol	Layer	Custodian
0	Cities and large towns renderImage: Cannot build image from features	
CDAT2	Populated places renderImage: Cannot build image from features	١
Ð	Towns	
•	Groundwater Bores	
22	Catchment Management Authority boundaries	
$\sim$	Major rivers	

Topographic base map

2 Km

Primary/arterial road
 Motorway/freeway
 Railway
 Runway
 Contour
 Background

Copyright © 2009 New South Wales Government. Map has been compiled from various sources and may contain errors or omissions. No representation is made as to its accuracy or suitability.

3/06/2009

-Print Report

# **Groundwater Works Summary**

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW057654

# Works Details (top)

GROUNDWATER NUMBER	GW057654
LIC-NUM	10BL126354
AUTHORISED-PURPOSES	DOMESTIC
INTENDED-PURPOSES	DOMESTIC
WORK-TYPE	Bore
WORK-STATUS	(Unknown)
CONSTRUCTION-METHOD	Rotary
OWNER-TYPE	Private
COMMENCE-DATE	
COMPLETION-DATE	1983-01-01
FINAL-DEPTH (metres)	15.00
DRILLED-DEPTH (metres)	0.00
CONTRACTOR-NAME	
DRILLER-NAME	
PROPERTY	N/A
GWMA	-
GW-ZONE	-
STANDING-WATER-LEVEL	
SALINITY	
YIELD	

# Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
<b>ELEVATION-SOURCE</b>	(Unknown)
NORTHING	5913898.00
EASTING	759003.00
LATITUDE	36 53' 7"
LONGITUDE	149 54' 22"
GS-MAP	0089D4

http://is2.dnr.nsw.gov.au/proxy/dipnr/gwworks?GWWID=GW057654

AMG-ZONE 55 COORD-SOURCE GD.,ACC.MAP REMARK

#### Form-A (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	63

### Licensed (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	63

#### Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL DETAIL
1	1	Casing	Threaded Steel		0.00	150		(Unknown)

### Water Bearing Zones (top)

no details

### Drillers Log (top)

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW040590

# Works Details (top)

**GROUNDWATER NUMBER** GW040590 LIC-NUM **AUTHORISED-PURPOSES INTENDED-PURPOSES** NOT KNOWN WORK-TYPE Spear WORK-STATUS (Unknown) CONSTRUCTION-METHOD (Unknown) **OWNER-TYPE** Private **COMMENCE-DATE COMPLETION-DATE** 5.50 FINAL-DEPTH (metres) DRILLED-DEPTH (metres) 5.50 **CONTRACTOR-NAME** DRILLER-NAME PROPERTY **GWMA GW-ZONE** STANDING-WATER-LEVEL SALINITY YIELD

### Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	5912769.00
EASTING	759588.00
LATITUDE	36 53' 43"
LONGITUDE	149 54' 47"
GS-MAP	0089D4

http://is2.dnr.nsw.gov.au/proxy/dipnr/gwworks?GWWID=GW040590

AMG-ZONE 55 COORD-SOURCE GD.,ACC.MAP REMARK

#### Form-A (top)

COUNTYAUCKLANDPARISHPAMBULAPORTION-LOT-DPRES 10

#### Licensed (top)

no details

#### Water Bearing Zones (top)

no details

0.00

Drillers Log (top)

5.50 5.50

#### FROM TO THICKNESS DESC

**GEO-MATERIAL COMMENT** 

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Sand Beach Water Bearing

Page 2 of 2

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW065554

## Works Details (top)

**GROUNDWATER NUMBER** GW065554 LIC-NUM **AUTHORISED-PURPOSES INTENDED-PURPOSES** DOMESTIC WORK-TYPE Spear WORK-STATUS (Unknown) **CONSTRUCTION-METHOD** Auger **OWNER-TYPE** Private **COMMENCE-DATE** 1988-05-27 **COMPLETION-DATE** FINAL-DEPTH (metres) 6.70 DRILLED-DEPTH (metres) 0.00 **CONTRACTOR-NAME** DRILLER-NAME PROPERTY **GWMA GW-ZONE** STANDING-WATER-LEVEL SALINITY YIELD

## Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	E
NORTHING	5912763.00
EASTING	759786.00
LATITUDE	36 53' 43"
LONGITUDE	149 54' 55"
GS-MAP	0089D4

http://is2.dnr.nsw.gov.au/proxy/dipnr/gwworks?GWWID=GW065554

AMG-ZONE 55 COORD-SOURCE REMARK

#### Form-A (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	RES 10

Licensed (top)

no details

#### Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

Hole No	- Pipe No	COMPONENT-	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL	DETAIL
1	1	Casing	P.V.C.	0.10	6.30	29			
1	1	Opening	Screen	6.10	6.70	56		1	Surescreen; Stainless Steel; SL: Omm; A: .15mm

### Water Bearing Zones (top)

FROM- DEPTH (metres)	TO- DEPTH (metres)	THICKNESS (metres)	ROCK-CAT- DESC	S- D- W-L L	TEST- YIELD HOLE- DEPTH (metres)	DURATION SALINITY
4.20	6.70	2.50	Unconsolidated	4.20	0.75	0-500 ppm

### Drillers Log (top)

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Print Report

# **Groundwater Works Summary**

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW040589

Works Details (top)

**GROUNDWATER NUMBER** GW040589 LIC-NUM **AUTHORISED-PURPOSES INTENDED-PURPOSES** NOT KNOWN WORK-TYPE (Unknown) WORK-STATUS (Unknown) CONSTRUCTION-METHOD (Unknown) **OWNER-TYPE** Private COMMENCE-DATE **COMPLETION-DATE** FINAL-DEPTH (metres) 4.90 DRILLED-DEPTH (metres) 4.90 **CONTRACTOR-NAME DRILLER-NAME** PROPERTY **GWMA GW-ZONE STANDING-WATER-LEVEL** SALINITY YIELD

## Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
RIVER-BASIN	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	5912824.00
EASTING	759813.00
LATITUDE	36 53' 41"
LONGITUDE	149 54' 56"
GS-MAP	0089D4

http://is2.dnr.nsw.gov.au/proxy/dipnr/gwworks?GWWID=GW040589

AMG-ZONE 55 COORD-SOURCE GD.,ACC.MAP REMARK

#### Form-A (top)

COUNTYAUCKLANDPARISHPAMBULAPORTION-LOT-DPRES 10

Licensed (top)

no details

Water Bearing Zones (top)

no details

0.00

Drillers Log (top)

4.90 4.90

#### FROM TO THICKNESS DESC

GEO-MATERIAL COMMENT

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Sand Beach Water Bearing

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW105858

## Works Details (top)

**GROUNDWATER NUMBER** GW105858 LIC-NUM 10BL163266 AUTHORISED-PURPOSES DOMESTIC **INTENDED-PURPOSES** WORK-TYPE Bore WORK-STATUS **CONSTRUCTION-METHOD OWNER-TYPE COMMENCE-DATE COMPLETION-DATE** 2005-05-04 **FINAL-DEPTH (metres) DRILLED-DEPTH (metres)** CONTRACTOR-NAME DRILLER-NAME PROPERTY BILLINGS **GWMA GW-ZONE STANDING-WATER-LEVEL** SALINITY YIELD

### Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	5912743.00
EASTING	759862.00
LATITUDE	36 53' 44"
LONGITUDE	149 54' 58"
GS-MAP	

AMG-ZONE 55 COORD-SOURCE REMARK

# Form-A (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	255 750227

## Licensed (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	255 750227

# Water Bearing Zones (top)

no details

#### Drillers Log (top)

no details

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW040591

Works Details (top)

**GROUNDWATER NUMBER** GW040591 LIC-NUM **AUTHORISED-PURPOSES INTENDED-PURPOSES** NOT KNOWN WORK-TYPE (Unknown) WORK-STATUS (Unknown) CONSTRUCTION-METHOD (Unknown) OWNER-TYPE Private COMMENCE-DATE **COMPLETION-DATE** 2.50 FINAL-DEPTH (metres) DRILLED-DEPTH (metres) 2.50 CONTRACTOR-NAME DRILLER-NAME PROPERTY GWMA **GW-ZONE** STANDING-WATER-LEVEL SALINITY YIELD

## Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	5912978.00
EASTING	759818.00
LATITUDE	36 53' 36"
LONGITUDE	149 54' 56"
GS-MAP	0089D4

http://is2.dnr.nsw.gov.au/proxy/dipnr/gwworks?GWWID=GW040591

Form-A (top)

COUNTYAUCKLANDPARISHPAMBULAPORTION-LOT-DPRES 10

Licensed (top)

no details

Water Bearing Zones (top)

no details

Drillers Log (top)

#### FROM TO THICKNESS DESC

**GEO-MATERIAL COMMENT** 

0.00 2.50 2.50

Sand Beach Water Bearing

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Wednesday, June 3, 2009

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

# Work Requested -- GW056187

## Works Details (top)

**GROUNDWATER NUMBER** GW056187 LIC-NUM 10BL122393 AUTHORISED-PURPOSES DOMESTIC NOT KNOWN **INTENDED-PURPOSES** WORK-TYPE Well WORK-STATUS Supply Obtained CONSTRUCTION-METHOD (Unknown) **OWNER-TYPE** Private **COMMENCE-DATE** 1960-01-01 **COMPLETION-DATE** 3.00 FINAL-DEPTH (metres) DRILLED-DEPTH (metres) 3.10 CONTRACTOR-NAME **DRILLER-NAME** PROPERTY N/A **GWMA GW-ZONE STANDING-WATER-LEVEL** SALINITY YIELD

## Site Details (top)

REGION	10 - SYDNEY SOUTH COAST
<b>RIVER-BASIN</b>	220 - TOWAMBA RIVER
AREA-DISTRICT	
CMA-MAP	8824-2S
GRID-ZONE	55/3
SCALE	1:25,000
ELEVATION	
ELEVATION-SOURCE	(Unknown)
NORTHING	5912911.00
EASTING	759989.00
LATITUDE	36 53' 38"
LONGITUDE	149 55' 3"
GS-MAP	0089D4

AMG-ZONE 55 COORD-SOURCE GD.,ACC.MAP REMARK

### Form-A (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	L1 (RES 10)

#### Licensed (top)

COUNTY	AUCKLAND
PARISH	PAMBULA
PORTION-LOT-DP	L1

#### Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

HOLE- NO	PIPE- NO	COMPONENT- CODE	COMPONENT- TYPE	DEPTH- FROM (metres)	DEPTH- TO (metres)	OD (mm)	ID (mm)	INTERVAL [	DETAIL
1	1	Casing	Brick	-0.20	-0.20	914		(	Unknown)

### Water Bearing Zones (top)

no details

## Drillers Log (top)

 FROM TO
 THICKNESS
 DESC
 GEO-MATERIAL COMMENT

 0.00
 3.05
 3.05
 Sand Water Bearing

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

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# Appendix C Underground Service Plans

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# **Enguiry Confirmation**

## Job No. 3359232

PO Box 7710 Melbourne VIC 8004 Phone: 1100 Fax: 1300 652 077

To: Company: Address:

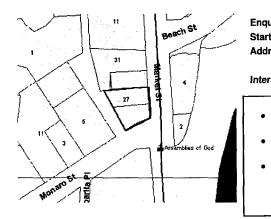
Mr Thomas Onus URS Level 3 116 Miller St North Sydney Nsw 2060 Caller 1D: Phone: Mobile: Fax No: Email:

602816 0289255759 0408665517 0289255555 thomas\_onus@urscorp.com

## **Dig Site Details**

www.dialbeforeyoudig.com.au

Warning: The map below only displays the location of the proposed dig site and does not display any asset owner's pipes or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly. Asset owners aim to provide you with details of their assets within 2 working days.



uiry Date:	05/05/2009 4:17:41 PM
t Date:	13/05/2009
ress:	Monaro Street
	Merimbula NSW 2548
section	Market ST

- Check that the location of the dig site is correct. If not you MUST submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

## Map Ref: Penguin 376D9

Additional work site information:

DBYD State Message: Visit our new Web site - www.dialbeforeyoudig.com.au ((NSW))

# Your Responsibilities and Duty of Care

. If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.

- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to the terms and disclaimers set out at www.dialbeforeyoudig.com.au.
- For more information on safe excavation practices, visit www.dialbeforeyoudig.com.au

### **Asset Owner Details**

The asset owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post.

Seq No.	Asset Owner	Contact No	Na
15817718	Bega Valley Shire Council	0264992259	
15817719	Roads & Traffic Authority #	0288370890	
15817720	Telstra, South Coast (s)	1800114918	

otification Status Notified Notified

Notified

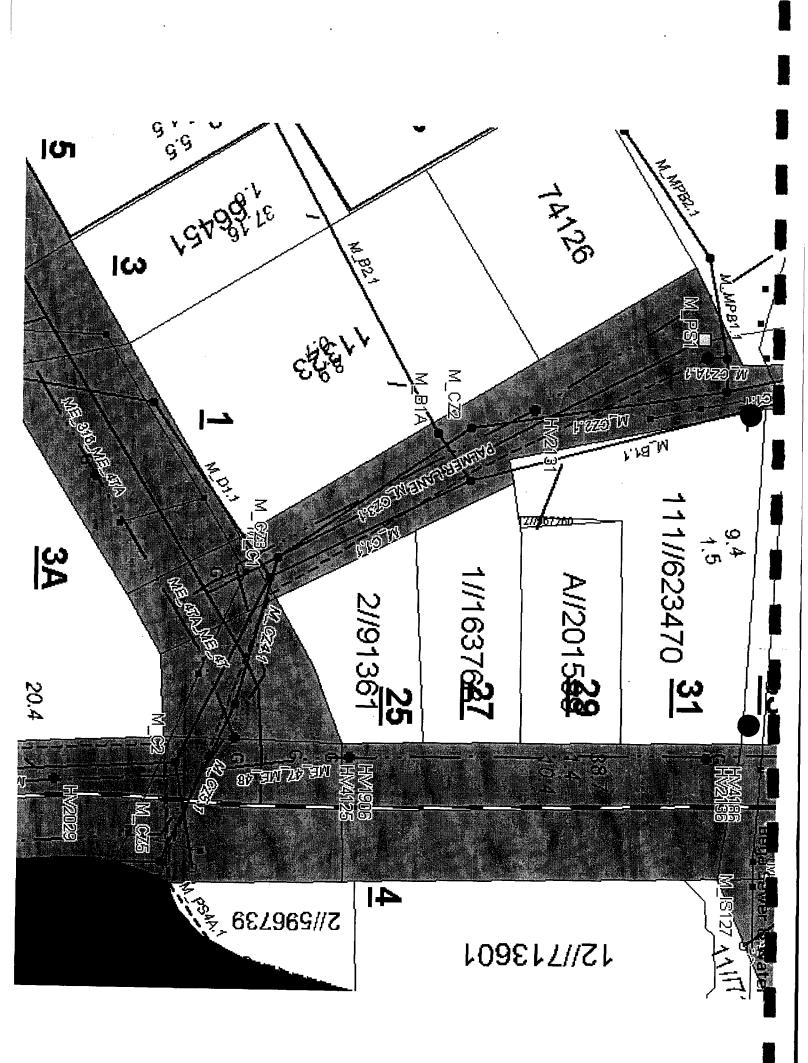
\*\* Asset owners highlighted by asterisks \*\* require that you visit their offices to collect plans.

# Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

LODGE YOUR FREE ENQUIRY ONLINE - 24 HOURS A DAY, SEVEN DAYS A WEEK

#### www.dialbeforeyoudig.com.au

www.dialbeforeyoudig.com.au



### Accredited Plant Locaters:

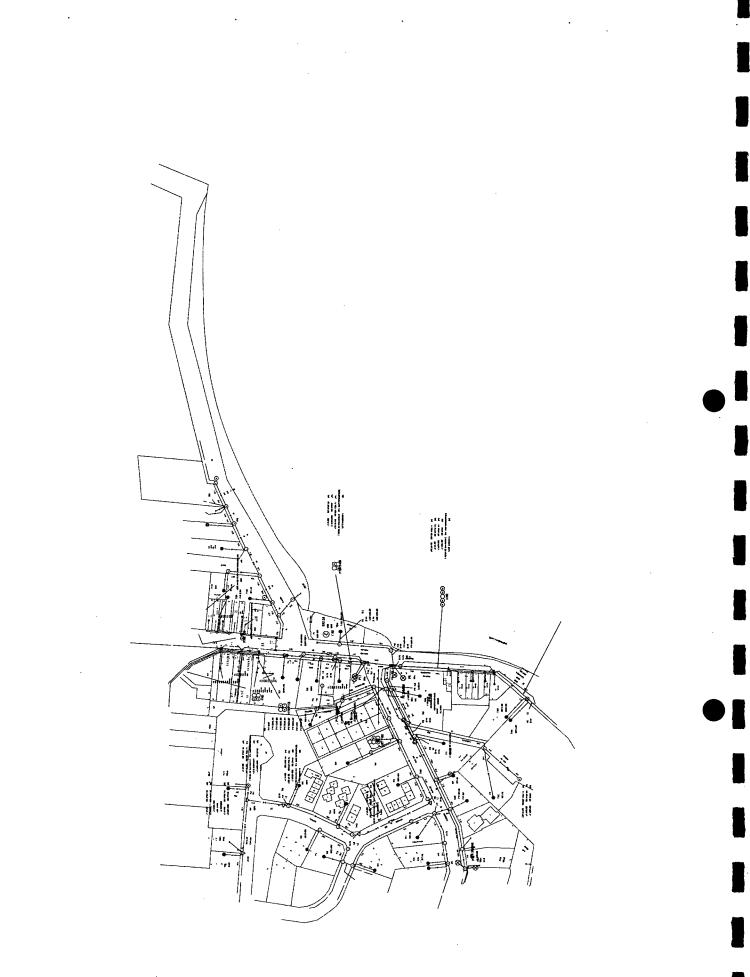
Name and Address	Phone Number	Ask for:
Bedrock Bobcat & Excavation Pty Ltd - Minnamurra	Ph: 02 42375659 Fax: 02 4237 8029 Mob: 0418 645 391	Darren Peacock
Commercial & industrial Earthing (Ulladulla)	02 4457 1217 or 0414 890 615	Phillip Matthews
D & V Communications Pty Ltd - Bega	Ph: 02 64947821 Mob: 0428 523 783	Vic Tacilauskas
Excavac Potholing - Appin	Mob: 0414 521 808 Fax: 02 4631 1450	Peter Lawrence
Gary Laneyrie Electrical Contractor (Wollongong)	02 4262 8166	Gary Laneyrie
Kerr Technologies (Wollongong )	0417 622 009 or 42 622 009	Robert Kerr
Mocean Fabrications (Bega, Snowy Mountains, Batemans Bay)	02 64944955 or 0418329370	Mark Broadbent
National Cable Locations (Canberra)	02 6292 0867 or 0415 158 474	Michael Matthews
S & K O'Malley Communications - Bawley Point	Ph: 02 44571258 Fax: 02 44571258 Mob: 0427 975 777	Scott O'Malley

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# **DUTY OF CARE**



**Telstra Corporation Limited** 

#### IMPORTANT:

- Please read and understand all the information and disclaimers provided below.
- Sketches and Plans provided by Telstra are circuit diagrams only and indicate the presence of telecommunications plant in
  the general vicinity of the geographical area shown; exact ground cover and alignments cannot be given with any certainty and
  cover may alter over time. Telecommunications plant seldom follow straight lines and careful on site investigation is essential
  to uncover and reveal its exact position.
- Due to the nature of Telstra plant and the age of some cables and records, it is impossible to ascertain the location of all Telstra plant. The accuracy and/or completeness of the information can not be guaranteed and, accordingly Telstra plans are intended to be indicative only.

#### "DUTY OF CARE"

When working in the vicinity of telecommunications plant you have a legal "Duty of Care" that must be observed. The following points must be considered:-

- 1. It is the responsibility of the owner and any consultant engaged by the owner, including an architect, consulting engineer, developer, and head contractor to design for minimal impact and protection of Telstra plant. Telstra will provide plans and sketches showing the presence of its network to assist at this design stage.
- 2. It is the owner's (or constructor's) responsibility to:-

a) Request plans of Telstra plant for a particular location at a reasonable time before construction begins.

b) Visually locate Telstra plant by hand digging (pot-holing) where construction activities may damage or interfere with Telstra plant (see "Essential Precautions and Approach Distances" section for more information).

c) Contact Telstra's **Network Integrity Group** (see below for details) if Telstra plant is wholly or partly located near planned construction activities.

#### DAMAGE:

#### ANY DAMAGE TO TELSTRA'S NETWORK MUST BE REPORTED TO 132203 IMMEDIATELY.

- The owner is responsible for all plant damage when works commence prior to obtaining Telstra plans, or failure to follow
  agreed instructions.
- Telstra reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses.

#### CONCERNING TELSTRA PLANS:

- Phone 1100 Dial Before You Dig for plans of Telstra plant locations. Please give at least 2 business days notice.
- Telstra plans and information provided are valid for 60 days from the date of issue.
- Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The
  applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant
  must not use the plans or details for any other purpose. The plans and details should be disposed of by shredding or any
  other secure disposal method after use.
- Telstra plans or other details are provided only for the use of the applicant, its servants, or agents. The applicant may not give the plans or details to other parties, and may not generate profit from commercialising the plans or details.
- Please contact the **Network Integrity Help Desk** (see below for details) immediately should you locate Telstra assets not indicated on these plans.
- Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.
- Please ensure Telstra plans and information provided remains on-site at all times throughout your construction phase.

#### ESSENTIAL PRECAUTIONS and APPROACH DISTANCES:

NOTE: If the following clearances cannot be maintained, please contact the Network Integrity Help Desk (see below for details)

for advice on how best to resolve this situation.

1. On receipt of plans and sketches and before commencing excavation work or similar activities near Telstra's plant, carefully locate this plant first to avoid damage. Undertake prior manual exposure such as potholing when intending to excavate or work closer to Telstra plant than the following approach distances.

- Where Telstra's plant is in an area where road and footpaths are well defined by kerbs or other features a minimum clear distance of 600mm must be maintained from where it could be reasonably presumed that plant would reside.
- In non established or unformed reserves and terrain, this approach distance must be at least 1.5 metres.
- In country/rural areas which may have wider variations in reasonably presumed plant presence, the following minimum
  approach distances apply:
- a) Parallel to major plant: 10 metres (for IEN, optic fibre and copper cable over 300 pairs)
- b) Parallel to other plant: 5 metres
- Note: Even manual pot-holing needs to be undertaken with extreme care, commonsense and employing techniques least
  likely to damage cables. For example, orientate shovel blades and trowels parallel to the cable rather than digging across the
  cable.
- If construction work is parallel to Telstra plant, then careful hand digging (pot-holing) at least every 5m is required to establish
  the location of all plant, hence confirming nominal locations before work can commence.
- 2. Maintain the following minimum clearance between construction activity and actual location of Telstra Plant.

Jackhammers/Pneumatic Breakers	Not within 1.0m of actual location.
Vibrating Plate or Wacker Packer Compactor	Not within 0.5m of Telstra ducts. 300mm compact clearance cover b efore compactor can be used across T ducts.
Boring Equipment (in-line, horizontal and vertical)	Not within 2.0m of <b>actual location</b> . Constructor to hand dig (pot-hole) and expose plant.
Heavy Vehicle Traffic (over 3 tonnes)	Not to be driven across Telstra ducts (or plant) with less than 600mm cover. Constructor to check depth via hand digging.
Mechanical Excavators, Boring and Tree Removal	Not within 1.0m of <b>actual location.</b> Constructor to hand dig (pot-hole) and expose plant.

- All Telstra pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work.
- All Telstra conduit should have the following minimum depth of cover after the completion of your work:-
- Footway 450mm
- Roadway 450mm at drain invert and 600mm at road centre crown
- For clearance distances relating to Telstra pillars, cabinets and RIMs/RCMs please contact the Network Integrity Help Desk (see below for details).

#### FURTHER ASSISTANCE:

Over-the-phone assistance can be obtained by calling the Network Integrity Help Desk.

Where on-site location is provided, the owner is responsible for all hand digging (pot-holing) to visually locate and expose Telstra plant.

If plant location plans or visual location of Telstra plant by digging reveals that the location of Telstra plan is situated wholly or partly where the owner plans to work, then **Telstra's Network Integrity Group** must be contacted through the **Network Integrity Help Desk** to discuss possible engineering solutions.

#### NOTE:

If Telstra relocation or protection works are part of the agreed solution, then payment to Telstra for the cost of this work shall be the responsibility of the principal developer or constructor. The principal developer or constructor will be required to provide Telstra with the details of their proposed work showing how Telstra's plant is to be accommodated and these details must be approved by the Regional Network Integrity Manager prior to the commencement of site works.

#### **RURAL LANDOWNERS - IMPORTANT INFORMATION**

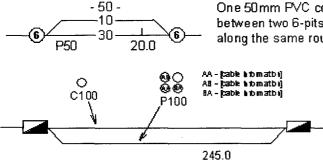
Where Telstra owned cable crosses agricultural land, Telstra will provide a one off free on-site electronic cable location. Please note that the exact location of cables can only be verified by visual proving by pot holing, which is not covered by this service. The Network Integrity Helpdesk Officer will provide assistance in determining whether a free on-site location is required. Please ring the Network Integrity Helpdesk Officer as listed above.

#### PRIVACY NOTE

Your information has been provided to Telstra by DBYD to enable Telstra to respond to your DBYD request. Telstra keeps you information in accordance with its privacy statement entitled "Protecting Your Privacy" which can be obtained from Telstra either by calling 1800 039 059 or visiting our website at www.telstra.com.au/privacy

A GUIDE	TO READING <b>Celstra</b> PL	ANS	Telstra Corporation Limited ABN 33 051775 556
$\gg$	Exchange (major cable present)	6	Cable jointing pit (number indicating pit type)
	Footway access chamber (can vary from 1-lid to 12-lid)		Buried cable jointing pit (number indicating pit type)
	- Roadway access chamber	(E)	Elevated cable joint (above ground joint on buried cable)
$\otimes$ or $\bigotimes$	Pillar/cabinet (above the ground / free standing)		Cable loop (direct buried)
⊗-+€	Above ground complex equipment housing (eg RIM)		Telstra Plant in shared utility trench
	Please Note: This equipment is powered by 240V electricity.	^	Aerial Cable (above ground)
PT	Public telephone Please Note: This equipment is powered by 240V electricity.	_^_∆	Aerial cable (attached to joint use pole e.g. power)
t	- Direct buried cable	SMOF-1	— Optical fibre cable direct buried
⊖ or ⊖ or ⊖⊖or	Single to multiple round conduit Configurations 1, 2, 4, 9 respectively (Attached text denotes conduit type and size)	A - Asbestos GI - Galvani	examples of conduit type and size: s cement, P - PVC / plastic, C - Concrete, sed iron, E - Eartherware.
CILL or Hand or	Multiple square conduit Configurations 2, 4, 6 respectively	P50 P100 A100	is <i>nominally</i> range from 20mm to 100mm. 50mm PVC conduit 100mm PVC conduit 100mm asbestos cement conduit
	E85 (Attached text denotes conduit type and size)	E 85	85mm square earthenware conduit

# Some examples of how to read Telstra plans:



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, 20.0m apart, with a direct buried 30-pair cable along the same route.

Two separate conduit runs between two footway access chambers (manholes) 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along the same route.

**WARNING:** Telstra's plans show only the presence of cables and plant. They only show their position relative to road boundaries, property fences etc. at the time of installation and Telstra does not warrant or hold out that such plans are accurate thereafter due to changes that may occur over time.

DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these vary significantly.

The customer has a DUTY OF CARE when excavating near Telstra cables and plant. Before using machine excavators TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG (potholing) to identify its location. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

## ACCREDITED PLANT LOCATERS (For your area)

On-site assistance should be sought from an Accredited Plant Locater if the telecommunications plant cannot be located within 2.5

metres of the locations indicated on the drawings provided.

On-site advice should be obtained from a suitably qualified contractor highly skilled in locating Telstra plant if there is any doubt whatsoever about the actual location of the telecommunications plant, the best method for locating the telecommunications plant or the correct interpretation of the drawings provided. In the case where Telstra plant is outside a recognised road reserve Telstra recommends that the **Network Integrity Help Desk** is contacted for assistance prior to engaging an Accredited Plant Locater.

For the assistance of customers Telstra has established strict criteria to assess the skill of contractors that may be engaged by owners requiring Telstra plan locating services to perform any of the following activities if requested to do so by the owner:

- review Telstra's plans to assess the approximate location of Telstra plant;
- advise owners of the approximate location of Telstra plant according to the plans;
- advise owners of the best method for locating Telstra plant;
- advise owners of the hazards of unqualified persons attempting to find the exact location of Telstra plant and working in the vicinity of Telstra plant without first locating its exact position.
- perform trial hole explorations by hand digging (pot-holing) to expose Telstra plant with a high degree of skill, competence and
  efficiency and utilising all necessary safety equipment.

Telstra has provided a number of contractors with certification as an Accredited Plant Locater.

A list of Accredited Plant Locaters operating in your area is attached. Accredited Plant Locaters are certified by Telstra to perform the tasks listed above. Owners may engage Accredited Plant Locaters to perform these services, however Telstra does not give any warranty in relation to these services that Accredited Plant Locaters are competent or experienced to perform any other services.

The attached list provides the names and contact details for Accredited Plant Locaters who service your area and can provide you with assistance in locating Telstra plant on site. These organisations have been able to satisfy Telstra that they have a sound knowledge of telecommunications plant and its sensitivity to disturbance; appropriate equipment for locating telecommunication plant and competent personnel who are able to interpret telecommunications plans and sketches and understand safety issues relevant to working around telecommunications plant. They are also able to advise you on the actions which should be taken if the work you propose will/could result in a relocation of the telecommunications plant and/or its means of support.

We recommend that you engage the assistance of one of these Accredited Plant Locaters as a step towards discharging your Duty of Care obligations when seeking the location of Telstra's telecommunications plant.

#### Please Note:

- The details of any contract, agreement or retainer for site assistance to locate telecommunications plant shall be for you to decide and agree with the organisation engaged. Telstra is not a party to any contract entered into between an owner and an Accredited Plant Locater. The Accredited Plant Locaters are able to provide guidance concerning the extent of site investigations required.
- 2. Payment for the site assistance will be your responsibility and payment details should be agreed before the engagement is confirmed.
- Telstra does not accept any liability or responsibility for the performance of or advice given by an Accredited Plant Locater. Accreditation is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.
- 4. Each Accredited Plant Locater has been issued with a certificate which confirms the Accreditation. Each year Telstra will reassess the accreditation and where appropriate will issue a letter confirming the accreditation for the next calendar year. You have the right to request the organisation you engage to show evidence of this certificate and its currency.
- The Accredited Plant Locater is required to service each engagement with the personal attendance of at least one accredited employee who has satisfactorily completed a Telstra approved employee accreditation training course. These people will carry a certification card issued by Telstra.
- 6. Neither the Accredited Plant Locater nor any of its employees are an employee or agent for Telstra and Telstra is not liable for any damage or loss caused by the Accredited Plant Locater or its employees.
- 7. The attached list contains the current names and contact details of Accredited Plant Locators who service your area, however, these details are subject to change.

# Appendix D Soil and Groundwater Bore Information

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**NSW Government** 

## Department of Water & Energy

Mobil Oil Australia Pty Limited C/- URS Australia Pty Ltd Level 3, 116 Miller Street NORTH SYDNEY NSW 2060

Attention: Thomas Onus

Contact: Wayne Ryan Phone: 02 4429 4442 Fax: 02 4429 4458 Email: <u>Wayne.Ryan@dnr.nsw.gov.au</u>

Our ref: 10BL603106

10 June 2009

Dear Sir

#### Subject: Monitoring Bore Licence

Please find enclosed your licence. Your attention is drawn to the nature and description of the work, terms, limitations and conditions under which the licence is issued.

Please show the licence to the Driller so that he is aware of any conditions affecting the construction of the bore. The Driller <u>must have</u> a current Driller's Licence issued by this Department.

Condition (2) of the license <u>applies whether the bore is successful or not</u> and it is the Driller's responsibility to supply the information. <u>A letter is enclosed to be handed by you to the Driller</u> outlining his obligations under the terms of the Water Act. Three copies of the Form 'A' for recording details of the bore are attached and these should be forwarded to the Driller. One copy will be returned to you when completed by the Driller. This must then be returned to this office together with details of any water analysis and pumping tests carried out.

The Form 'A' requests a sketch of the location of bore site together with the portion number and boundaries. <u>This sketch is required even though you may have already indicated the</u> <u>site to the Department</u>.

Your attention is drawn to conditions 11 and 12.

Please note construction must be consistent with the "Minimum Construction Requirements for Water Bores in Australia", Edition 2, September 2003.

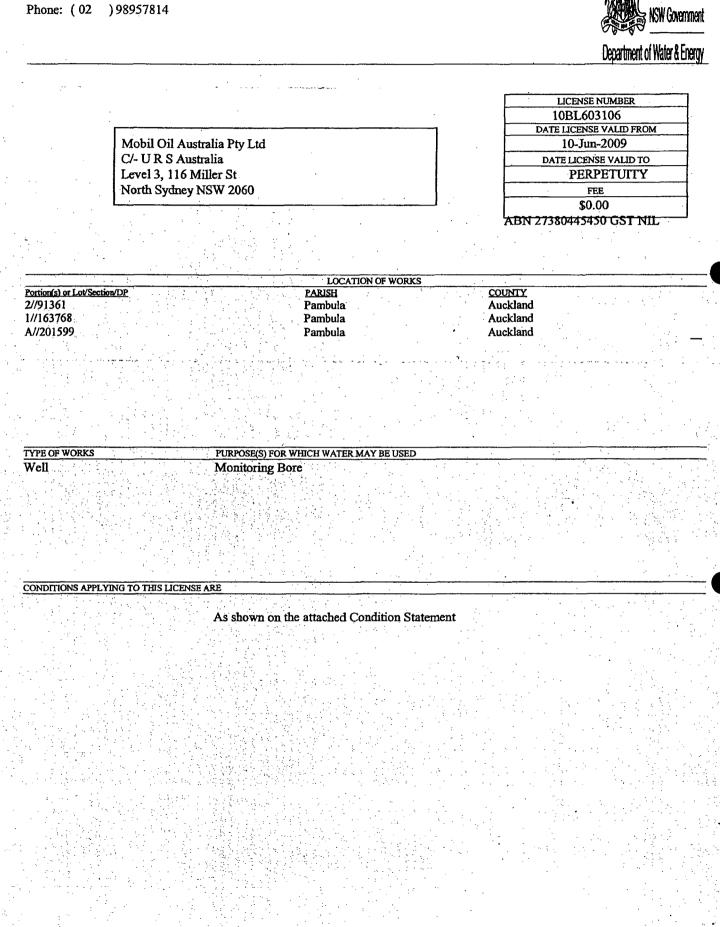
Yours sincerely

For Wayne Ryan Licensing Officer

5 O'Keefe Avenue Nowra PO Box 309 Nowra NSW 2541 Australia t (02) 4429 4442 | f (02) 4429 4458 | e information@dwe.nsw.gov.au www.dwe.nsw.gov.au | ABN 58 132 718 272 Sydney South Coast Region P O Box 3720 10 Valentine Ave Parramatta NSW 2124 Phone: (02) 98957814

# **Department of Water and Energy**

BORE LICENSE CERTIFICATE UNDER SECTION 115 OF THE WATER ACT, 1912 10BL603106



ORIGINAL

10BL603106

# **Department of Water and Energy**

# CONDITIONS STATEMENT REFERRED TO ON 10BL603106 ISSUED UNDER PART V OF THE WATER ACT, 1912 ON 10-Jun-2009

(1) THE LICENCE SHALL LAPSE IF THE WORK IS NOT COMMENCED AND COMPLETED WITHIN THREE YEARS OF THE DATE OF THE ISSUE OF THE LICENCE.

(2) THE LICENSEE SHALL WITHIN TWO MONTHS OF COMPLETION OR AFTER THE ISSUE OF THE LICENSE IF THE WORK IS EXISTING, FURNISH TO THE DEPARTMENT OF WATER AND ENERGY:-

(A) DETAILS OF THE WORK SET OUT IN THE ATTACHED FORM "A" (MUST BE COMPLETED BY A DRILLER).

(B) A PLAN SHOWING ACCURATELY THE LOCATION OF THE WORK, IN RELATION TO PORTION AND PROPERTY BOUNDARIES.

(C) A ONE LITRE WATER SAMPLE FOR ALL LICENCES OTHER THAN THOSE FOR STOCK, DOMESTIC, TEST BORES AND FARMING PURPOSES.

(D) DETAILS OF ANY WATER ANALYSIS AND/OR PUMPING TESTS.

(3) THE LICENSEE SHALL ALLOW THE DEPARTMENT OF WATER AND ENERGY OR ANY PERSON AUTHORISED BY IT, FULL AND FREE ACCESS TO THE WORKS, EITHER DURING OR AFTER CONSTRUCTION, FOR THE PURPOSE OF CARRYING OUT INSPECTION OR TEST OF THE WORKS AND ITS FITTINGS AND SHALL CARRY OUT ANY WORK OR ALTERATIONS DEEMED NECESSARY BY THE DEPARTMENT FOR THE PROTECTION AND PROPER MAINTENANCE OF THE WORKS, OR THE CONTROL OF THE WATER EXTRACTED AND FOR THE PROTECTION OF THE QUALITY AND THE PREVENTION FROM POLLUTION OR CONTAMINATION OF SUB-SURFACE WATER.

(4) IF DURING THE CONSTRUCTION OF THE WORK, SALINE OR POLLUTED WATER IS ENCOUNTERED ABOVE THE PRODUCING AQUIFER, SUCH WATER SHALL BE SEALED OFF BY:-

(A) INSERTING THE APPROPRIATE LENGTH(S) OF CASING TO A DEPTH SUFFICIENT TO EXCLUDE THE SALINE OR POLLUTED WATER FROM THE WORK.

(B) CEMENTING BETWEEN THE CASING(S) AND THE WALLS OF THE BORE HOLE FROM THE BOTTOM OF THE CASING TO GROUND LEVEL.

ANY DEPARTURE FROM THESE PROCEDURES MUST BE APPROVED BY THE DEPARTMENT BEFORE UNDERTAKING THE WORK.

(5) (A) THE LICENSEE SHALL NOTIFY THE DEPARTMENT OF WATER AND ENERGY IF A FLOWING SUPPLY OF WATER IS OBTAINED. THE BORE SHALL THEN BE LINED WITH CASING AND CEMENTED AND A SUITABLE CLOSING GEAR SHALL BE ATTACHED TO THE BOREHEAD AS SPECIFIED BY THE DEPARTMENT OF WATER AND ENERGY.

(B) IF A FLOWING SUPPLY OF WATER IS OBTAINED FROM THE WORK, THE LICENSEE SHALL ONLY DISTRIBUTE WATER FROM THE BORE HEAD BY A SYSTEM OF PIPE LINES AND SHALL NOT DISTRIBUTE IT IN DRAINS, NATURAL OR ARTIFICIAL CHANNELS OR DEPRESSIONS.

(6) IF A WORK IS ABANDONED AT ANY TIME THE LICENSEE SHALL NOTIFY THE DEPARTMENT OF WATER AND ENERGY THAT THE WORK HAS BEEN ABANDONED AND SEAL OFF THE AQUIFER BY:-

(A) BACKFILLING THE WORK TO GROUND LEVEL WITH CLAY OR CEMENT AFTER WITHDRAWING THE CASING (LINING); OR

10BL603106

(B) SUCH METHODS AS AGREED TO OR DIRECTED BY THE DEPARTMENT OF WATER AND ENERGY.

(7) THE LICENSEE SHALL NOT ALLOW ANY TAILWATER/DRAINAGE TO DISCHARGE INTO OR ONTO:-

- ANY ADJOINING PUBLIC OR CROWN ROAD;

- ANY OTHER PERSONS LAND;

- ANY CROWN LAND;

- ANY RIVER, CREEK OR WATERCOURSE;

- ANY NATIVE VEGETATION AS DESCRIBED UNDER THE NATIVE VEGETATION CONSERVATION ACT 1997;

- ANY WETLANDS OF ENVIRONMENTAL SIGNIFICANCE.

(8) WORKS USED FOR THE PURPOSE OF CONVEYING, DISTRIBUTING OR STORING WATER TAKEN BY MEANS OF THE LICENSED WORK SHALL NOT BE CONSTRUCTED OR INSTALLED SO AS TO OBSTRUCT THE REASONABLE PASSAGE OF FLOOD WATERS FLOWING INTO OR FROM A RIVER.

(9) IF THE BORE AUTHORISED BY THIS LICENSE IS LINED WITH STEEL OR PLASTIC CASING THE INSIDE DIAMETER OF THAT CASING SHALL NOT EXCEED 220 MM.

(10) WATER SHALL NOT BE PUMPED FROM THE BORE AUTHORISED BY THIS LICENSE FOR ANY PURPOSE OTHER THAN GROUNDWATER INVESTIGATION.

(11) SUBJECT TO CONDITION (12) THE LICENSEE SHALL WITHIN TWO MONTHS OF THE DATE OF COMPLETION OF THE BORE AUTHORISED BY THE LICENSE,

(1) BACKFILL IT WITH CLAY OR CEMENT TO GROUND LEVEL, AFTER WITHDRAWING ANY CASING(LINING), OR:-

(2) RENDER IT INEFFECTIVE BY ANY OTHER MEANS ACCEPTABLE TO THE DEPARTMENT.

(12) CONDITION (11) SHALL HAVE NO FORCE OR EFFECT IF:-

(1) AT THE RELEVANT TIME THERE IS WITH THE DEPARTMENT OF WATER AND ENERGY, AN APPLICATION IN RESPECT OF WHICH THE DEPARTMENT HAS NOT MADE A DECISION TO CONVERT THE GROUNDWATER INVESTIGATION BORE INTO A PRODUCTION BORE; OR

(2) THE LICENSEE HAS COMPLETED THE BORE FOR THE PURPOSE OF MEASURING WATER LEVELS OR WATER QUALITY BY THE ADDITION OF CASING WITH A DIAMETER NOT EXCEEDING 220MM.

**End Of Conditions** 

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			FORM A				BORE NO:			
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NAME O	F LICENSE	E Mob.! (	): Austra	lia Pty	ctd	]	LICENCE	NO. 10BLG	60310E	
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DRILLER			7	3	Depth		Hole Diam	Method		
Licence No		722	-	DRILLING	From	<u>То</u> Ц	(mm)		Air,Mud	
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	Macquar Rotary		Þ					· V		
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	ysis available p						ioneu state pi		<u></u>	
-	G TESTS ON			-stage and si	ngle-rate tes	ts available.	enter in this	order *		
Date			D.W.L. 🕈	Yield	Pump			g Equipmen	t Üsed	
	(hours)	(m)	(m) at end	(Lds)	Intake		Method	To Measure		
			of period	F	Depth (m)			Water Level	Dischar	
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4	y copy of data	1 7	n flow,please sup	<u> </u>			Tested by:	SWL-Standing	¥17	
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IF NOT DI AQUIFER Water	S Depths fr Bearing	om natural s	b.D.L. ₽	SE GO TO S to nearest 0.1 Yield	ECTION 12 m Hole Depth	Test	Duration	DDL-Drawdov Level whe L/s -litres/secc Salinity*	n pumped ond	
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9	GRAVEL	PACK	Depth (m),	Grain Size (mm)	Quantity		10 CHE	MICAL TRE	ATMENT	
-	TYPE		From To	From To	(mm)		Treatment		Duration	Success
	Rounded []		iraded S	1-2						
	Crushed 🛛	Ung	raded 🛛	[	l	J	Ļ	<u> </u>		
11	<b>DEVELO</b>	PMENT	Method	Surging 🗖	Jetting 🖸	Air 🖸	Backwashi	ng 🖸	Pumping 🗹	Other
			Time Taken	hrs	hrs	hrs		hrshrs	C-5 hrs	hrs
12	IF NOT D	RILLED HO	OLE ie. han	d dug, back l	hoë, dragline	etc				
			Depth (m)			Diameter	Lining	Dimensions	From (m)	To (m)
		· · · · · · · · · · · · · · · · · · ·				(m)	Material	of Liner (m)		
10										
13	From	to	nearest 0.1 Thickness	r · · · · · · · · · · · · · · · · · · ·	rata	From	Ťo	Thickness	Str	ata
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	0.2	0.9	0.7	<u>Fill</u>			· · · · ·			
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14	SIGNATI	RE OF DRI	LLER OR (	'ONTRAC'I		S.M	fillor		DATE 22	16/09
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15			-			-	•	, or sketch with		
	from portion	boundaries.	even if sketch	aiready suppli	ied with licen	ce application	please confir	m actual bore si	te on this skete	cn.
	SITE CHO	$\frac{\text{SEN BY}}{2 \leq T}$	Hydrogeolog	ist 😡 Geolo	ogist 🗇 🛛 Dri	ller 🗇 🛛 Divi	ner 🛛 🛛 Clie	nt 🖸 Other i	<b>d</b>	<b></b> '
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	Easting 759373.37	Northing 591345/.95	
	County_Auckland	Parish Pambula Portion	Scale
16	remarksMW5		
17	SIGNATURE OF LICENSEE	DATE	

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				FORM A			н торона Стала	BORE NO:		
		PART	ICULARS	S OF COM	<b>IPLETED</b>	BORE		DWE use on	nly	
	(	This form N	IUST be con	pleted and r	eturned to th	e Departmer	nt)		MW6	
1	NAME OF	LICENSE	E Mobil	Dil Austi	ralia Pty	LH	]	LICENCE I	NO.10 BL	603106
2	DRILLER				3	Depth	. (m)	Hole Diam	Method	Fluid used
-	Licence No		722	]	DRILLING	}	To	(mm)		Air,Mud etc
· · · · · · · ·	Name D	2. Mill	25	]	SUMMARY	0	24	125	auger	- N'L
			ere Phil	Ing	*					·
	Rig Type	Folian	<u> </u>	]		I	<u> </u>	I	I	L
4	MAIN SUN	MMARY	New Bore	D Replac	ement Bore	Deepe	ning 🗇 E	nlarging 🖸	Recondition	ning 🛛
ı	Date Comp		4/2/09		pth			1 Use		·
			_ mg/L or tas lease supply cop		rature		C If aband	loned state p	rocedure	<u></u>
5		-	••••		stage and si	ngle-rate tes	sts available,	enter in this	order *	
4	Date			D.W.L. 🕆	Yield	- Pump	]	the second se	g Equipmen	
		(hours)	(m)	(m) at end	(1/5)	Intake		Method	To Measure Water Leyel	
	1	· ·		loi periou	1 .	Depth (m)			Water Lever	Discharge
	2		$\square$							
	3			· · · · ·			4	Tested by:		·
يدور و العامين	* Please supply	copy of data	1 If artesiar	i flow,please su	oply static and d	ynamic pressur	l res (kPa) respec		SWL-Standing	Water Level
riadiae sitemaa			يو. الأسمانية من المرا				ан алаан улаан алаан оо то Алаан халан улаан оо тоо тоо тоо	يومعمو ومواد المراجع	DDL Drawdor	vn Water
6					SE GO TO S to nearest 0.1		2	-	Level whe L/s -litres/seco	• •
, V		Bearing	S.W.L. &	D.D.L. 🕈		Hole Depth	Test	Duration	Salinity*	Remarks
	From (m)	To (m)	(m)	(m)	(L/s)	at Test, (m)	Method	(Hrs)	mg/L or Taste	
	1 1.3	<u>ч</u>	1.5	Not	meas	veol			250	· · · · · · · · · · · · · · · · · · ·
)	3	-	· · ·	· .						
	4				· ·		<u> </u>		·	
7	CASING 1	Depths from	natural surf	ace level to r	nearest 0.1 m	. If above si	urface level:	. mab	ove surface	
			1	Welded		How Fixed			nented	Casing Shoe
	Type and	Outside	From To	Screwed	Held Seat			From	То	
	Thickness	Diameter (mm)	(m) (m)	Glued etc	in or clamp bott		nall Other	(m)	(m)	Yes No
	1 PVC	65X	0-0.5	screwed				0	0.2	N
ļ	2			•	· · · ·					
	3					•		l	í	l
8	COMPLET		ILS	SLOTTED C	ASING:- oxy			otted in hole l		ed slot 🛛
	SUMMARY		-			Outer		tted	Slot siz	
	Open hole		0	Ma	terial	Diameter (mm)	From To (m) (m)		Width (mm)	Direction eg Vertica
	Open ended	casing	٥			(1111)		(11)	(1111)	
			-							
	Slotted casin	ıg	σ					/		
ļ	C1-44-11		-	SCREEN:-	wire wound		plastic D	other		<u>- · · · · · · · · · · · · · · · · · · ·</u>
	Slotted liner		٥	Brond /	Material	Outer Diameter	From To	Aperture	Method	of Fixing
	Screen		œ∕			(mm)	(m) (m)	(mm)	eg Packer S	•
I		· .	1 .	1 PVC	CL 18		05 35	0.24	SCA	
	Gravel pack		g	2		. •	· · · ·			
	Type of Bott		-	د 4						·
			g 🖸	5						
							• • • • • • • • • • • • • • • • • • • •	·		

•

,0.5-3.5	m
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9	GRAVEL PACK	Depth (m)	Grain Size (mm)	Quantity	10 CHEM	ICAL TRE	ATMENT	
	TYPE GRADE	From To	From To	(mm)	Treatment	Method	Duration	Success
	Rounded 🗍 🛛 📿	iraded 🗹	1-2					
	Crushed 🛛 Ung	graded 🗇			·			
. 11	DEVELOPMENT	Method Time Taken	Surging 🛛 hrs	0	Backwashing	D hrs	Pumping I OS hrs	Other hrs

12 IF NOT DRILLED HOLE ie. hand dug, back hoe, dragline etc

Ľ	Method	Depth (m)	Length (m)	Width (m)	Diameter (m)	Lining Material	Dimensions of Liner (m)	From (m)-	- To (m) -
	1								

### 13 STRATA DETAILS to nearest 0.1m

From	to	Thickness	Strata	From	To	Thickness	Strata
0	0.2	0.2	Concrete				
0.2	0.7	05	Fill .				
0-7	3.3	2.6	Sand			· · · · · · · · · · · · · · · · · · ·	
3.3	Ч	0.7	Silly Clay	·			
		/					
				· .		•	· .
•			· · · · · · · · · · · · · · · · · · ·				· ·
			······				· · · · · · · · · · · · · · · · · · ·

## TOTAL DEPTH DRILLED $_4_-$

-

m

DATE

date 2

North

#### 14 SIGNATURE OF DRILLER OR CONTRACTOR

15 PLAN TO SCALE showing location of bore site with respect to portion (or Lot) boundaries, or sketch with distance in metres from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch.

SITE CHOSEN BY: Hydrogeologist () Geologist D Driller D Diviner D Client D Other D \_\_\_\_\_

Refer to attached drawing

	Easting 759364.48 Northing 59/3434.99	
	County_Auckland_Parish_Parish_Portion_	Scale
16	remarks <u>MW_6</u>	

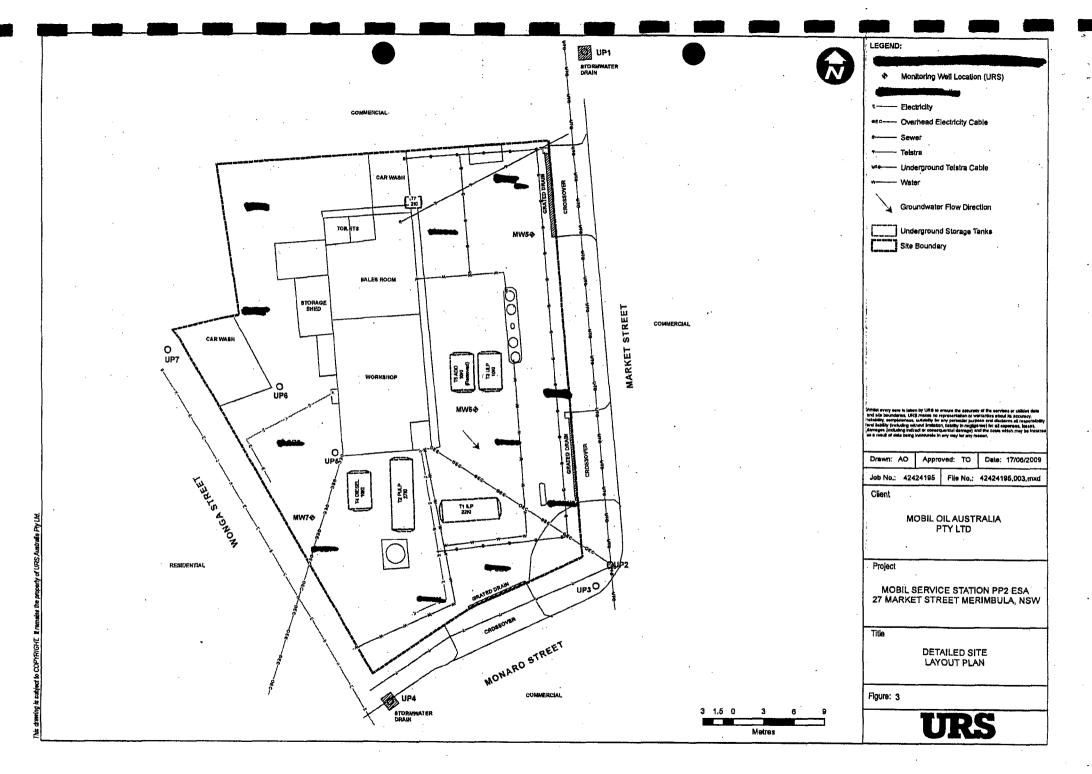
17 SIGNATURE OF LICENSEE \_

	•	DE	PARTMEN	T OF WATE	R AND ENE	RGY				
	•			FORM A				BORE NO:		
		PART	TCULAR	S OF CON	<b>IPLETED</b>	BORE		DWE use of		
	(			mpleted and r			nt)		MWJ	
1	NAME OF	LICENSE	e Willi	Oil Aust	ialia Ph	y Ltd	]	LICENCE 1	NOJOBI	603106
2	DRILLER				3	Depth	(m)	Hole Diam	Method	Fluid used
	Licence No	<u></u>	722		DRILLING	From	To	(mm)		Air,Mud etc
	Name 1				SUMMARY	Ø		125	anger	NJL -
	Contractor	nacquar	ie Drill	ng ·						
	Rig Type	Kotar	<u>ч</u>	1			I			
	A MALENT CTUD	O CA DY	New Bore	Denlas	ement Bore	T Deere	ning 🗇 E	nlarging 🗍	Beconditio	
4	MAIN SUN			-	$pth \_ 3$	-		Use		
	Date Compl Final Salini	101001	$12/0^{-1}$		rature	<u></u> m		loned state pr		
	*If water analy							ioneu state pi		<del></del>
5	PUMPING	-			-stage and si	ngle-rate tes	sts available,	enter in this	order *	
	Date	Duration		D.W.L. 🕈	Yield	Pump	]		g Equipmen	t Used
		(hours)	(m)	(m) at end	(L/s)	Intake		Method	To Measure	To Measure
			<u> </u>	of period		Depth (m)		•	Water Level	Discharge
	1						1 ·			
	2		1			i	].			
	3						1		Ĺ	
•	4				<u> </u>	L		Tested by:		
	* Please supply	copy of data	1 If artesia	in flow,please su	oply static and d	ynamic pressur	es (kPa) respect	tvely	SWL-Standing	
· · · -	TE NOT DB			LANT PLEA		ECTION 12	n national and a share	· · · · · · · · · · · · · · · · · · ·	DDL-Drawdow	
;				surface level			· .		Level when L/s -litres/seco	
,		Bearing	S.W.L.		Yield	Hole Depth	Test	Duration	Salinity*	Remarks
	From (m)	To (m)	(m)	(m)	(L/s)	at Test (m)	Method	(Hrs)	mg/L or Taste	Iteliidi K5
	11.5	4	1.1.7	Ne Ne		asure		(1220)	900	
	2	······	<u> +</u>							
	3		1							
	4								•	
								_		
	CASING	Depths from	natural sur	face level to r	earest 0.1 m	and the second se			ove surface	
				Welded		How Fixed			ented	Casing Shoe
	Type and	Outside	From To		Held Seat			From	То	
	Thickness	Diameter	(m) (m	1	in or	n into sn	nall Other	(m) <sup>·</sup>	(m)	Yes No
	1.210	(mm)		etc	clamp bott					
	1 PUC					om hole				
	2	50	0.0.5	screwed	<i>V</i>	om hole	· · · · · · · · · · · · · · · · · · ·	0	0.1	
	2		0.0.5	screwed		om hole	······································	0	0.1	
	2 3		0.0.5	screwed		om hole		0	0.1	
	2 3				V	·	awn 🔽 sl			ed slot 🛛
	2	ION DETA			ASING:- oxy	·		otted in hole (	] stamp	ed slot 🗍
	2 3 COMPLET SUMMARY	ION DETA		SLOTTED C	ASING:- oxy	cut 🗋 sz Outer		otted in hole ( tted		
	2 3 COMPLET	ION DETA		SLOTTED C	V	cut 🗆 sa Outer Diameter	Slo From To	otted in hole ( tted Length	J stamp Slot siz Width	e Direction
	2 3 COMPLET SUMMARY Open hole	ION DETA		SLOTTED C	ASING:- oxy	cut 🗋 sz Outer	Slo	otted in hole ( tted Length	J stamp Slot siz	ze
	2 3 COMPLET SUMMARY	ION DETA		SLOTTED C	ASING:- oxy	cut 🗆 sa Outer Diameter	Slo From To	otted in hole ( tted Length	J stamp Slot siz Width	e Direction
	2 3 COMPLET SUMMARY Open hole Open ended	ION DETA		SLOTTED C	ASING:- oxy	cut 🗆 sa Outer Diameter	Slo From To	otted in hole ( tted Length	J stamp Slot siz Width	e Direction
•	2 3 COMPLET SUMMARY Open hole	ION DETA		SLOTTED C Ma	ASING:- oxy terial	cut 🗋 sa Outer Diameter (mm)	Slo From To (m) (m)	otted in hole ( tted Length (m)	Slot siz Slot siz Width (mm)	e Direction
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin	ION DETA casing		SLOTTED C Ma	ASING:- oxy	Cut C sa Outer Diameter (mm)	Slo From To	otted in hole ( tted Length (m)	J stamp Slot siz Width	e Direction
	2 3 COMPLET SUMMARY Open hole Open ended	ION DETA casing		SLOTTED C Ma	ASING:- oxy terial	cut cut sa Outer Diameter (mm) gauze cutor	Slo From To (m) (m) plastic 🗹	otted in hole ( tted Length (m) 	Slot siz Slot siz Width (mm)	e Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin Slotted liner	ION DETA casing		SLOTTED C Ma	ASING:- oxy terial	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter	Slo From To (m) (m) plastic <b>C</b>	otted in hole ( tted Length (m) 	J stamp Slot siz Width (mm) Method of	Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin	ION DETA casing		SLOTTED C Ma SCREEN:- v Brand /	ASING:- oxy terial wire wound C Material	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter (mm)	Slo From To (m) (m) plastic <b>G</b> From To (m) (m)	otted in hole ( tted Length (m) other Aperture (mm)	J stamp Slot siz Width (mm) Method o eg Packer S	Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin Slotted liner Screen	TON DETA		SLOTTED C Ma SCREEN:- Brand / 1 PUC	ASING:- oxy terial wire wound C Material	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter	Slo From To (m) (m) plastic <b>C</b>	otted in hole ( tted Length (m) 	J stamp Slot siz Width (mm) Method of	Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin Slotted liner	TON DETA		SLOTTED C Ma SCREEN:- V Brand / 1 PUC 2	ASING:- oxy terial wire wound C Material	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter (mm)	Slo From To (m) (m) plastic <b>G</b> From To (m) (m)	otted in hole ( tted Length (m) other Aperture (mm)	J stamp Slot siz Width (mm) Method o eg Packer S	Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin Slotted liner Screen Gravel pack	ION DETA		SLOTTED C Ma SCREEN:- Brand / 1 PUC 2 3	ASING:- oxy terial wire wound C Material	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter (mm)	Slo From To (m) (m) plastic <b>G</b> From To (m) (m)	otted in hole ( tted Length (m) other Aperture (mm)	J stamp Slot siz Width (mm) Method o eg Packer S	Direction eg Vertical
	2 3 COMPLET SUMMARY Open hole Open ended Slotted casin Slotted liner Screen	ION DETA casing		SLOTTED C Ma SCREEN:- V Brand / 1 PUC 2	ASING:- oxy terial wire wound C Material	cut cut sa Outer Diameter (mm) gauze cu Outer Diameter (mm)	Slo From To (m) (m) plastic <b>G</b> From To (m) (m)	otted in hole ( tted Length (m) other Aperture (mm)	J stamp Slot siz Width (mm) Method o eg Packer S	Direction eg Vertical

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PLAN TO SCALE showing location of bore site with respect to portion (or Lot) boundaries, or sketch with distance in metres from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch. SITE CHOSEN BY: Hydrogeologist Geologist Driller Diviner Client Other Client Other Client Nother Report to Address Addres					<b>0</b> H -	_	•				
GRADELPACK       Depth (m)       Quantity         TYPE       GRADE       From To         Rounded       O       Odd O         Craded       Usgreed       Image: Success         DEVELOPMENT       Method       Surging       Heting         DEVELOPMENT       Method       Surging       Heting       Air       Backwashing       Depring Ø         DEVELOPMENT       Method       Depth (m)       Length (m)       Widh (m)       Diameter       Lingge       Dimensions         Method       Depth (m)       Length (m)       Widh (m)       Diameter       Lingge       Dimensions       Prom (m)       To (m)         STRATA DETAILS to nearest 0.1m       From       To       Thickness       Strata         O       O       C       O       C       Co       Co <td< td=""><td></td><td></td><td></td><td></td><td>- 0.4-3</td><td>.5</td><td></td><td></td><td></td><td></td><td></td></td<>					- 0.4-3	.5					
TYPE       GRADE       Freed To       Too	~			$\left[ \right]$			].			•	
Examined □       Oracled S       I = Z         DEVELOPMENT       Mechod       Surging □       Jetting □       Air □       Backwashing □       Pramping S       Other         DEVELOPMENT       Mechod       Surging □       Jetting □       Air □       Backwashing □       Pramping S       Other         DEVELOPMENT       Mechod       Surging □       Jetting □       Air □       Backwashing □       Pramping S       Other         Material       OLDEV       ic. hand dug, back hoe, dragline etc       Lings       Pitmensions       From (m)       To (m)         STRATA DETAILS to nearest 0.1m       Prom       to       Thickness       Strata       From (m)       To (m)         STRATA DETAILS to nearest 0.1m       Prom       to       Thickness       Strata       From (m)       To (m)         STRATA DETAILS to nearest 0.1m       Prom       to       Thickness       Strata       From (m)       To (m)         Strata       Strata       From       to       Thickness       Strata       From (m)       To (m)         Strata       Strata       From       To       Thickness       Strata       From (m)       To (m)         Strata       Strata       From       To       Thickness </td <td>G</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Provide statements and statem</td> <td></td> <td></td> <td>Success</td>	G							Provide statements and statem			Success
DEVELOPMENT       Method       Surging       Detring       Air       Backwashing       Permping       Other         I'me Takea       his       his <t< td=""><td>Ro</td><td></td><td></td><td></td><td></td><td>(шп)</td><td>1</td><td>псашиен</td><td>Melliou</td><td>Duraciou</td><td>Juccuss</td></t<>	Ro					(шп)	1	псашиен	Melliou	Duraciou	Juccuss
Time Takes       hrs        STA       D	Cr	rushed 🗇	Ung	graded 🖸			]				
Time Takes       hrs        STA       D	D	EXTER OF				T.u		D. 1			/
IF NOT DRILLED HOLE is hand dug, back hos, dragline etc         Method       Depth (m)       Length (m)       Width (m)       Diameter       Lungg	D	EVELOP	WLENI								
Method       Depth (m)       Length (m)       Width (m)       Diameter internal of Liner (m)       From (m)       To (m)         STRATA DETAILS to nearest 0.1m       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)       From (m)       To (m)         STRATA DETAILS to nearest 0.1m       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)       From (m)       To (m)         O       O       Z       Z       Image: strata internal of Liner (m)         O       O       Z       Z       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)         O       O       Z       Z       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)         O       O       Z       O       C       Z       Image: strata internal of Liner (m)       Image: strata internal of Liner (m)         O       O       C       D       Image: strata internal of Liner (m)         SIGNATURE OF DRILLER OF DRILLER OF CONTRACTOR       Image: strata internal of Liner (m				Time Taxen		L1113	· · · · ·	L		0 3 113	<u>1113</u>
Method       Depth (m)       Length (m)       Width (m)       Material       of Liner (m)       From (m)       - To (m)         STRATA DETAILS to nearest 0.1m         Prom       to       Thickness       Strata       From       To       Thickness       Strata         0.2       0.2       0.6       Fill       Image: Comparison of the co	I	F NOT DI	RILLED HO	OLE ie. han	d dug, back l	hoe, dragline		<b></b>			
STRATA DETAILS to nearest 0.1m From to Thickness Strata 0.2 0.8 0.6 Fill 1.7 3.4 0.7 Claucy Sund 3.4 4 0.6 Clay TOTAL DEPTH DRILLER / 4 m SIGNATURE OF DRILLER OR CONTRACTOR DATE 22/6/ PLAN TO SCALE showing location of bore site with respect to portion (or La) boundaries, or sketch with distance in metres. from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch. STE CHOSEN BY : Hydrogeologist & Geologist Driller Drivner D Client D Other D Market D Scale Showing State Stat		Met	hod	Depth (m)	Length (m)	Width (m)				From (m)	Tc (m)
From       to       Thickness       Strata       From       To       Thickness       Strata         0.2       0.8       0.6       Fill       1 <t< td=""><td>┢</td><td></td><td></td><td></td><td></td><td></td><td><u>(m)</u></td><td>Watchia</td><td>of Liner (m)</td><td></td><td></td></t<>	┢						<u>(m)</u>	Watchia	of Liner (m)		
From       to       Thickness       Strata       From       To       Thickness       Strata         0       0       2       0.2       0.6       Fill       Image: Contract in the stress in the	F										
From       to       Thickness       Strata       From       To       Thickness       Strata         0. 2. 0.8       0.6       F.II       Image: Action of the strate of the strat									•		
0       0.2       0.2       1       Image: Second Seco	S			~ <u></u>		ato .	Enorm		Thickness	S+.	ento l
0.2       0.8       0.6       Fill         0.7       2.7       1.9       Send       Image: Send       Image: Send         3.4       4       0.6       Clay       Image: Send       Image: Send       Image: Send         3.4       4       0.6       Clay       Image: Send       Image:	┢	····					riom	10	TINCKIICSS	0	ala
2.7       3.4       0.7       Clayer Sand         3.4       4       0.6       Clay         1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1         1       1       1       1       1       1         1       1       1       1       1       1       1         1       1       1       1       1       1       1       1         1       1       1       1       1       1       1					Fill						· .
Image:						· · · · · · · · · · · · · · · · · · ·					
TOTAL DEPTH DRILLER - 4 m SIGNATURE OF DRILLER OR CONTRACTOR	$\vdash$					Sand					
SIGNATURE OF DRILLER OR CONTRACTOR D. Miller DATE 22-/6/ PLAN TO SCALE showing location of bore site with respect to portion (or Lot) boundaries, or sketch with distance in metres from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch. SITE CHOSEN BY: Hydrogeologist & Geologist Driller Diviner Client Other Refer to Machine Mach	⊢	<u>- 2 · 4</u>		6	Liay				·······		
SIGNATURE OF DRILLER OR CONTRACTOR D. Miller DATE 22-/6/ PLAN TO SCALE showing location of bore site with respect to portion (or Lot) boundaries, or sketch with distance in metres from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch. SITE CHOSEN BY: Hydrogeologist G Geologist D Driller Diviner Client Other Client Other Client Action A				· ·		÷	·				
SIGNATURE OF DRILLER OR CONTRACTOR	L				·						
SIGNATURE OF DRILLER OR CONTRACTOR	⊢	· · · · ·		· · · · ·	<u></u>						
SIGNATURE OF DRILLER OR CONTRACTOR											-
SIGNATURE OF DRILLER OR CONTRACTOR D. Miller DATE 22-/6/ PLAN TO SCALE showing location of bore site with respect to portion (or Lot) boundaries, or sketch with distance in metres from portion boundaries. Even if sketch already supplied with licence application please confirm actual bore site on this sketch. SITE CHOSEN BY: Hydrogeologist G Geologist D Driller Diviner Client Other Client Other Client Action A											
SIGNATURE OF DRILLER OR CONTRACTOR								· · ·			
Easting 759349.95 Northing 5913425.82	fro Sľ	m portion 1 TE CHO	boundaries. I	Even if sketch Hydrogeologi	already suppli st 🗹 Geolo	ed with licend	æ application	please confirm ner 🗆 Clien	n actual bore si nt 🗇 Other (	te on this sket	
$\operatorname{Remarks} MW/ = A/201599$	Ea	sting _ 7	59349.	<b>1</b> 5	Northing	59134	25.82				
//	RE	MARKS	M	W /					Á/ ≥	01599	•
	ст		EOFLICE	NCEF				1	DATE	•	

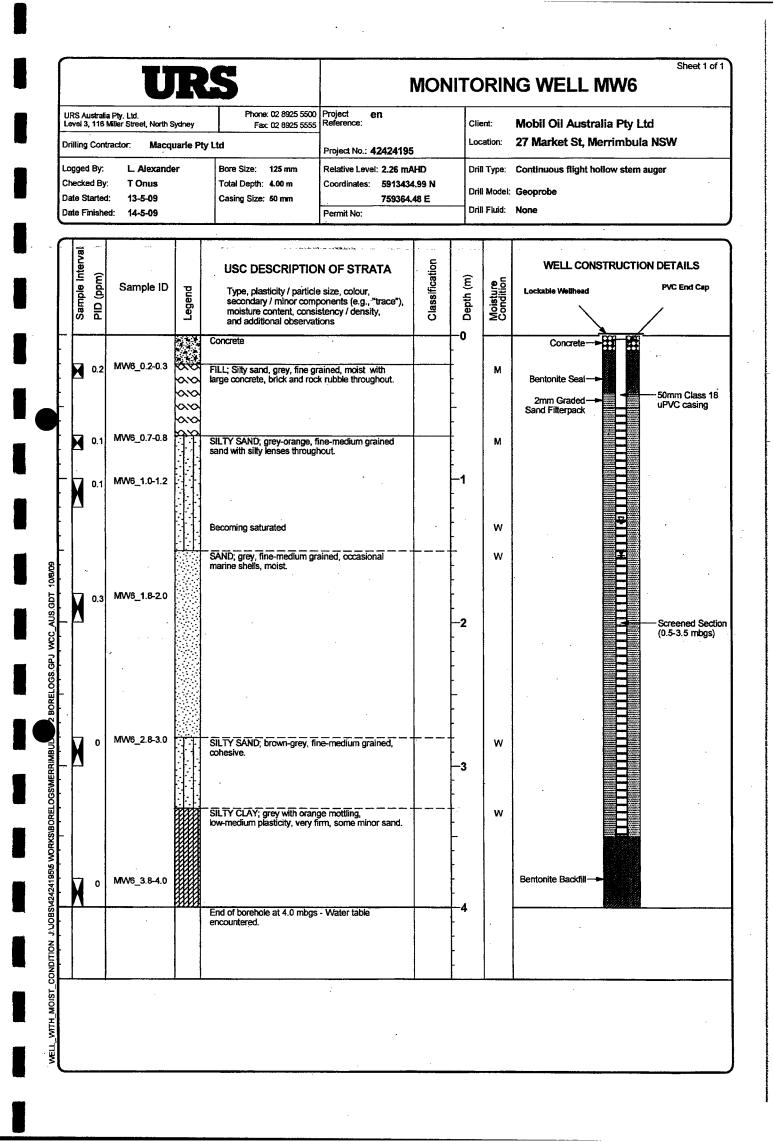


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RS Australi evel 3, 116	ia Pty. Ltd. Miller Street, North S	Sydney	Phone: 02 8925 5500 Fax: 02 8925 5555	Project <b>en</b> Reference:		Clien		Mobil Oil Australia I	-
rilling Con ogged By: necked By ate Started ate Finishe	L. Alexando T. T Onu <del>s</del>	Tol	re Size: 125 mm tal Depth: 4.10 m sing Size: 50 mm	Project No.: <b>4242419</b> Relative Level: <b>2.02</b> mJ Coordinates: <b>591345</b> 759373. Permit No:	AHD 1.95 N	Drill N	Fype: Model:	27 Market St, Merrin Continuous flight hollow Geoprobe None	
Sample interval PID (ppm)	Sample ID	r egend	ISC DESCRIPTIO Type, plasticity / particle secondary / minor comp noisture content, consis and additional observati	e size, colour, ponents (e.g., "trace"), stency / density,	Classification		Moisture Condition	WELL CONSTRU	JCTION DETAILS PVC End Cap
0.2	MW5_0.2-0.3 MW5_0.5-0.6 QC100 QC200	CACO FILL;	rete Sand, moist. Silty sand, grey, fine gri . Large concrete, brick ghout. wooden plank at	and rock rubble			M	Concrete	
6.4	MW5_1.0-1.2		D; grey, fine grained, so ming saturated	ne minor silt, moist.		<b>1</b> <b>1</b> 	M	2mm Graded —► Sand Filterpack	50mm Class 18 uPVC casing.
<b>45.3</b>	MW5_1.8-2.0	Becon with s	ming grey-orange, fine t some silty lenses, hydrod	o medium grained carbon odour present.			w		
0.5	MW5_2.8-3.0	Becor	ming coarse-grained wit	h marine shells.			w		Screened Secti (1.1-4.1 mbgs)
4.3	MW5_3.8-4.0	fine-n	Y SAND; dark brown, sli nedium grained sand co of borehole at 4.1 mbgs untered.	mponent.		- - - - - - - - - - - - - - - - - - -	w		

WELL WITH MOIST CONDITION J: UOBSW2424195/5 WORKSIBORELOGSIMERRIMBULA PP2 BORELOGS, GPJ WCC\_AUS, GDT 10/809



RS Australi evel 3, 118 rilling Cont ogged By:	a Pty. Ltd. Miller Street, North S ractor: Macqu L. Alexande	uarie Pty I	Phone: 02 8925 5500 Fax: 02 8925 5555 Ltd Bore Size: 125 mm	Project en Reference: Project No.: 42424195 Relative Level: 2.38 mA			ation:	Mobil Oil Australia Pty 27 Market St, Merrimbu Continuous flight hollow ster	lla NSW
hecked By ate Started ate Finishe	: 13-5-09		Total Depth: 4.00 m Casing Size: 50 mm	Coordinates: 5913425 759349. Permit No:			Model: Fluid:	Geoprobe None	
Sample Interval PID (ppm)	Sample ID	Legend	USC DESCRIPTION Type, plasticity / particle secondary / minor comp moisture content, consist and additional observation	size, colour, onents (e.g., "trace"), stency / density,	Classification	Depth (m)	Moisture Condition	WELL CONSTRUCT	ION DETAILS PVC End Cap
0.4	MW7_0.2-0.3	f	Concrete FILL; Sand,grey-white, mediu			0	м	Concrete →	
14.6	MW7_0.5-0.6	0.10 t 0.10 0.10	FILL; Sand with rock and con hroughout, moist.			-	м	2mm Graded	50mm Class 18 uPVC casing
0.4	MW7_1.0-1.2		SAND; grey to orange, fine-m occasional marine shells, moi	eorum graineo, st.		-1	M		
0.2	MW7_1.8-2.0		Secoming saturated				W		
	• •		• • •	•		- <b>2</b>			Creened Secti (0.5-3.5 mbgs)
0.0	MW7_2.8-3.0		CLAYEY SAND; grey, cohesi grained sand with clayey matr	ve, fine-medium rix, saturated.		-3	w		
0.0	MW7_3.8-4.0		CLAY; red with grey mottling, vlasticity, moist. Secoming dry.	firm, medium		- -	M D		
			End of borehole at 4.0 mbgs - mcountered.	Water table		- <b>4</b>			L
ł		I <b>I</b>			L[				

## Appendix E Waste Disposal Documentation

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5	Department of Envir	ronment &	Climate Change NSW	- Online Waste Tra	acking System
÷			RT CERTIFICATE - No.	2T00134858	
-	Tony Wilson 08-May-2009				us: Created
CA no:	2C00027854	CA	start date: 17-Apr-200	9 <b>CA</b> (	end date: 16-Apr-2010
PARTICIPATION	ne con péter solone le jo				
CONSIGNOR VOLMAN ENTERF				Role: Produ	
6 VERNA PLACE	RIGES	Contact:	JOHN VOLMAN	Email: N/A	loei
QUAKERS HILL, N	ISW 2763	Phone:		Fax: (02) 983	7 7350 Emergency: 0418 289683
		ABN:	72 085 860 537	ANZSIC code:	0 Licence no.: NA
Pickup As above					
details: WASTE					
Waste code:	J120 - Waste oil/hydrod	carbons mi	xtures/emulsions in wat	er	-
Description:	Oil/hydrocarbon mixed				
Form:	Liquid		Liquid waste levy ap		
•	nt: Chemical/Physical trea	tment	Classification: Liqu	id	
Contaminants:	N/A		<b></b>		5.17A
Dangerous goods	class: N/A N/A		Subsidiary risk class	: N/A N/A	UN no.: N/A No. package: N/A
Packaging type:			Packing group no:		No. package: N/A
PICKUP					
Waste amount at p	bickup:		(required - Yes)		
clare that to the	e best of my knowledge and	d belief the	above information is tru	e and correct.	
Signature	e best of my knowledge and (Bloek letters)	••••••	Date	27-	5. 89
	<u> </u>				
C. BEREITER DE CONTRA			enterrestenterenterenter		
VOLMAN ENTER	RISES				
6 VERNA PLACE	$\smile$	Contact:	JOHN VOLMAN	Email: N/A	
QUAKERS HILL, N	<b>ISW 2763</b>	Phone:	0418 289683 Fax	•	Transit state: N/A
I declare that to the	e best of my knowledge and			icle reg: TBA	Transport type: Road
	(Block etters)				-
Signature			Date	7	<b>.</b> 09
	Je		·		
the D. D. K have used in a strategy darks	A STREET ST	ହତମାହାରାର	Clayane necerving lecill		
WORTH RECYCL	ING SOUTH WINDSOR				
	CRES & FAIREY ROAD	Contact:			worthrecycling.com.au
SOUTH WINDSOF	R, NSW 2756	Phone:	(02) 8558 5100 no.: 4602	Fax:	Here was a second bl/A
Waste amount at a	-2 T	Licence r	Date waste arrive		lity ref no.: N/A 7509
		••••••••••	Date waste annve		1919-1
CCEPT / REJEC	T THE WASTE	-	27/5/09 -	.27	5 09 Treatment RECYCLING
	facility accepted the waste			e Processed:	
Address:					
I declare that to the	Black lettom	belief the GAD עוד	above information is tru	ie and correct - coi	mplete if accepted or rejected:
Signature			Date 27/5/04		
<u>S</u> éri le la					
					d transport certificate accompany certain wastes
(a) the consignor cert	out of or within NSW. This transpo ifies, by signing this certificate, that	at the informat	ion in Part 1 of the certificate	is correct;	
(c) the receiving facili	rtifies, by signing the certificate, the ty (receiver) certifies, by signing th	nis certificate,	that the information in Part 3	of the certificate is com	
(d) the receiving facili	ty records any discrepancies betw	een the waste	e received and the information	n recorded on this certif	icate in the DEC online waste tracking system. nation in the DEC online tracking system and pri
a new version of the ce	rtificate, the consignor or transport	ter must write	and initial any corrections on		wiving facility must ensure these corrections are
	nline system as soon as is practica ust retain this certificate for four ye		15.		
L		······			
n N	RUMI PR	M	ORILE PE	ZVO AL	ARIMBULA.
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		<u></u>			
Printed on : 08-Ma	v-2009 9:16 am				

## Appendix F Surveyor Certificates/Reports

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42424195/01/1



# Caddey Searl & Jarman

Consulting Surveyors and Property Valuers ABN 76 762 499 293

Merimbula Office:

60 Main Street (PO Box 488) Merimbula NSW 2548 Ph: (02)6495 1044 Fax: (02)6495 3070 Email: <u>csjmerim@csj.com.au</u>

#### **Bega Office**

10 Canning Street (PO Box 259) Bega NSW 2550 Ph: (02)6492 2933 Fax (02)6492 2934 Email: csjbega@csj.com.au

#### Bermagui Branch

2/4 Wallaga Street Bermagui NSW 2546 Ph (02) 6493 4197 (Wednesday Only)

#### PARTNERS

D. Bothamley MIS (Aust) M. Collins MIS (Aust)



C. Ferguson AAPI (CPV) & Econ J. Langford AAPI (CPV)



<u>Associates</u>

A. Jarman, MIS (Aust) C. Maxted, MIS (Aust) P. Guthrey, MIS (Aust) ABN 70 702 48

Our reference: **60341** Your reference:

25 May 2009

URS Australia Pty Ltd Level 3 116 Miller Street NORTH SYDNEY NSW 2060

Attention: Mr T Onus

Dear Sir

## RE: MONITORING WELLS AT MOBIL SERVICE STATION MARKET STREET MERIMBULA

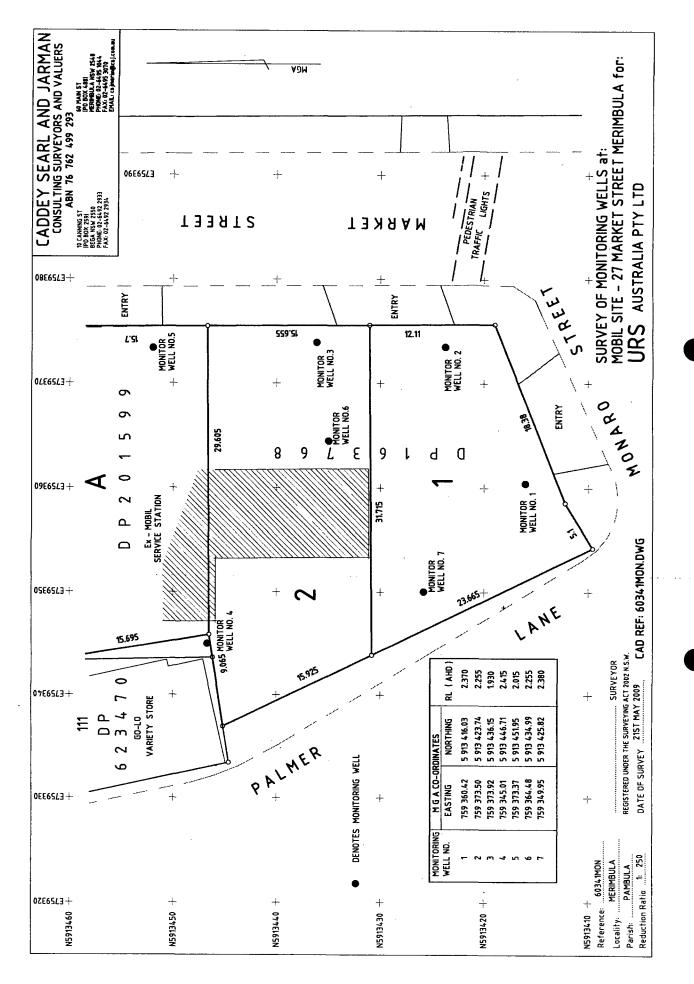
As instructed, attached please find our plan showing co-ordinates and levels of the seven (7) monitoring wells. Please verify that the numbering as shown on our plan is consistent with that of your own records.

We thank you for your instructions.

Yours faithfully

K Both amber

DK BOTHAMLEY MIS (Aust Registered Surveyor



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# Appendix G Groundwater Purging Data Sheets

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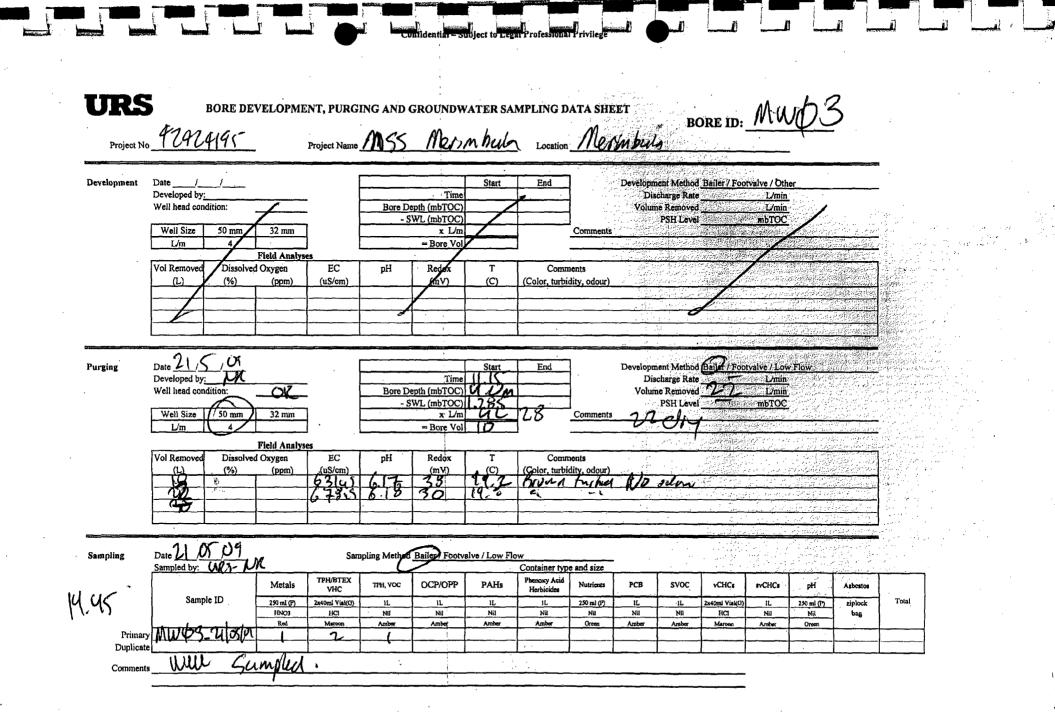
42424195/01/1

roject No	92124195		Project Name	<u>M.S.S</u>	Mer	mbula	MPLING DA	<u>Me</u>	<u>cîmbi</u>	<u>ila</u>		4 2 4				
pment	Date / / / Developed by: Well head condition Well Size 50 mm L/m 4	32 mm		Bore Do	Time pth (mbTOC) WL (mbTOC) x L/m = Bore Vol	Start	End	Comments	Developm Disc Volum	ent Method harge Rate e Removed PSH Level	Ballen / Foo	valve / Oth Umin L/min	Second States			Aline sure Services Services Rese
		Field Analys I Oxygen (ppm)	es EC (uS/cm)	pH	Kedox (mV)	T (C)	Comm (Color, turbid									мана) (марта)) (марта) (марта))) (марта))) (марта))) (марта))) (марта))) (марта))) (марта
g	Date 1/5/04 Developed by: Well head condition: Well Size 50 mm L/m 4	0(Q	-		Time cpth (mbTOC) WL (mbTOC) x L/m = Bore Vol	Start 4.0 1.JBS	End	Comments	Disc	ent Method charge Rate ne Removed PSH Level		tvalve //Lov L/min L/min mbTOC				
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ing	Date U, OS, VI Sampled by:		San	npling Method	Bailer / Footy	raive / Low Fic	ow Container type	e and size	4							Š,
)0	Sample ID	Metals 250 ml (P) HNO3 Red	TPH/BTEX VHC 2x40ml Vial(O) HC1 Maroon	TPH, VOC 1L Nii Amber	OCP/OPP 1L Nil Amber	PAHs IL Nil Amber	Phenoxy Acid Herbicides 11. Nil Amber	Nutrients 250 ml (P) Nil Oreen	PCB 11. Nil Amber	SVOC 1L Nil Amber	vCHCs 2x40ml Vial(G) HCl Maroon	svCHCs. 11. Nii Amber	pH 250 ml (P) Nîl Green	Asbestos ziplock bag	Total	
Primary	MW 01.21010	Ĩ	_2_	1											· · · · · · · · · · · · · · · · · · ·	

Confidentiar - Subject to Legar Professional Privilege

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ment Date//	-				Start	End		Developm	ent Method	Baller / Foot	valve / Othe	r.		المروحية من المرجع المرجع المراجع المرجع المرجع المرجع المرجع المرجع المرجع المرجع	Wiellandersen Kalendersen Barthetter Vielen
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Well Size 50 mg	32 mm	]	<u>- S</u>	WL (mbTOC) x L/m			Comments	(۱۹۹۷) ۲۰۰۹ (۲۰۰۹) ۲۰۰۹ ۱۹۹۹ (۲۰۰۹) ۲۰۰۹ ۱۹۹۹ (۲۰۰۹)	PSH Level		ambticis:	anda Maria		anis anis Distanta di Santa Mala Mala Mala	
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	lved Oxygen	EC	pH	Redox (mV)	T (C)				• -				25.761 2677.000		
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Sample ID	Metals	VHC	TPH, VOC	OCP/OPP	PAHs	Herbicides	Nutrients	PCB	svoc	vCHCs	svCHCs	pH 190-100	Asbestos	Total	
	FINO3 Red	HC1 Maroon	Nil Amber	Nil Amber	Nil Amber	Nil Amber	Nil Green	Nil Amber	Nil Aniber	HC1 Maruon	Nii Amber	Nil	bag		. •
Primary MW QL - UL 05 [ Duplicate	0 7												·····		· .
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	Developed by:         Well head condition:         Well Size       50 mpr         L/m       Vol Removed Dissol         (L)       (%)         Date       1000000000000000000000000000000000000	Developed by: Well head condition: Well Size 50 mm 32 mm L/m Field Analys Vol Removed Dissolved Oxygen (L) (%) (ppm) Date <u>U</u> / Ug Developed by: Well head condition: Well Size 50 mm 32 mm L/m 32 mm L/m 32 mm Mell Size 50 mm 32 mm Mell Size 50 mm 32 mm L/m 32 mm L/m 32 mm Mell Size 50 mm 32 mm L/m 32 mm L/m 32 mm L/m 32 mm Mell Size 50 mm 32 mm	Mell head condition: $Well head condition:$ $Well Size 50 mm 32 mm$ $L/m Field Analyses$ $Vol Removed Dissolved Oxygen EC$ $(L) (%) (ppm) (uS/cm)$ $Date 9 / (100 mm) (uS/cm)$ $Date 9 / (100 mm) (uS/cm)$ $Well Size 50 mm 32 mm$ $Well Size 50 mm 32 mm$ $Mell Size 50 mm 32 mm$ $Mell Size 50 mm 32 mm$ $Mell Size 50 mm 32 mm$ $Vol Removed Dissolved Oxygen EC (uS/cm) (uS/cm)$ $Mell Size 50 mm 32 mm$ $Mell Size 50 mm 32 mm$ $Mell Size 50 mm 32 mm$ $Sampled by: Sample Sampled by: Sampled by: Sampled by: Metals Terriverse Sampled by: Metals Terriverse Metals Terriverse$	Developed by:     Bore Dr.       Well head condition:     -S       Well Size     50 mp       Vol Removed     Dissolved Oxygen       L/m     Field Analyses       Vol Removed     Dissolved Oxygen       L/m     (4%)       Date     ////////////////////////////////////	Time         Well head condition:         Well Size       50 mpr       32 mm       X L/m         L/m       Field Analyses       SWL (mbTOC)       - SWL (mbTOC)         Vol Removed       Dissolved Oxygen       EC       pH       Redox         (L)       (%)       (ppm)       (uS/cm)       (m)         Date       //       //       //       //       //         Date       //       //       //       //       //         Well Size       50 mm       32 mm       EC       pH       Redox         U//       //       //       //       //       //       //         Date       //       //       //       //       //       //       //         //       //       //       //       //       //       //       //       //         //       //       //       //       //       //       //       //       //         //       //       //       //       //       //       //       //       //       //       //       //       //       //       //       //       //       //       //	Time         Time         Bore Depth (mbTOC)         Well head condition:         Well Size       Some 32 mm         L/m       Field Anatyses         Vol Removed       Dissolved Oxygen       EC       pH       Redox       T         Date       C <thc< th="">       C       <thc< th=""></thc<></thc<>	Developed by:     Time       Well head condition:     Bore Depth (mbTOC)       Well Size     50 mpt       Vol Removed     Dissolved Oxygen       (L)     (%)       (ppm)     (uS/cm)       (L)     (%)       (ppm)     (uS/cm)       Date     (C)       (C)     (Color, turbic       (L)     (%)       (ppm)     (uS/cm)       (L)     (%)       (ppm)     (uS/cm)       (uS/cm)     Start       End     Bore Depth (mbTOC)       (L)     (%)       (ppm)     (uS/cm)       Well bead condition:     Or       Well Size     50 mm       32 mm     Start       End     Bore Depth (mbTOC)       Well Size     50 mm       32 mm     -SWL (mbTOC)       Well Size     50 mm       Start     End       Well Size     50 mm       Start     US/cm)       (L)     (L)       (L)     (L)       (L)     (L)       (L)     (L)       (L)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Developed by:     Time     Time     Time       Well head condition:     SWL (mbTOC)     Comments       Um     L/m     SWL (mbTOC)     Comments       Un     Field Anatyzes     Comments     Comments       Vol Removed     Disolved Oxygen     EC     pH     Redox     T     Comments       (1)     (%)     (ppm)     (us/cm)     (m)     (C)     (Color, turbidity, odour)       Date     1     (%)     (ppm)     (us/cm)     Developm       Well head condition:     Time     Starr,     End     Developm       Well Size     50 mm     32 mm     Starr,     End     Developm       Well Size     50 mm     32 mm     Starr,     End     Developm       Well Size     50 mm     32 mm     x L/m     Comments     Comments       Vol Removed     Dissolved Oxygen     (us/cm)     pH     Redox     T     Comments       (U     (ppm)     (us/cm)     (us/cm)     (us/cm)     Comments     Comments       (U     (ppm)     (us/cm)     (us/cm)     (us/cm)     (us/cm)     Comments       (U     (ppm)     (us/cm)     (us/cm)     (us/cm)     (us/cm)     (us/cm)       M     Sector	Developed by:     Time     Descent and the second s	Developed by	Developed by:     Time     Time     Time       Well bad condition:     SWL (mbTOC)     SWL (mbTOC)     SWL (mbTOC)     SWL (mbTOC)       Well size     50 m     32 mm     SWL (mbTOC)     Comments     PSH 16/48       Well size     50 m     32 mm     SWL (mbTOC)     Comments     SWL (mbTOC)       Vol Removed     Field Anatyses     Field Anatyses     Comments     Comments       Vol Removed     Disolved Oxyam     EC     pH     Redox     T       Constraints     (C)     (Sign)     Field Anatyses     Development Methe Beller Thornability (see the second seco	Developed by	Time       Time       The State of th	Developed by

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	 	Vol Removed Dissolved (%) 19 L <sup>5</sup> Date <u>1</u> /05 /09 Sampled by:		<b>H</b> <b>H</b> <b>U</b>	<u> </u>	-21	ve / Low Flo	njanja	Ailh	РСВ	SVOC	vCHC1	svCHCs	рН	Asbestos		
	Sampling	Vol Removed (1) (%) (%) Date U 105,09	(ppm) 367 Metais s	Sam	<u>699</u> pling Method	Bailer / Footval	ve / Low Flo	Mc Container type	and size		SVOC 1L Nil	vCHCs 2x40ml Vial(0) HCl	svCHCs 1L Nii		Asbestos	Total	

Development	Date/ Developed by: Well head condition:				GROUNDY	Start	End		Developm Disc		Bailer / Foo	tvalve / Othe L/min			- -	
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	Vol Removed Dissolv (L) %)	ed Oxygen (ppm)	EC (uS/cm)	· рН	Redox (mV)	T (C)	Comm (Color, turbi			1	1	and games and games	an a	lander Maria de Carlos Maria de Carlos de Carlos		
				/		·			_/			an a	rten menere	e for the second second		
urging	Date <u>U</u> <u>5</u> <u>09</u> Developed by: <u>W</u> Well head condition:	<u> ÚODI</u>	-		epth (mbTOC)		End		Diso Volum	charge Rate e Removed	721	valve/Low 1/min 1/min	k district of the	<u> </u>		
	Well Size 50 mm L/m 4	32 mm Field Analys			SWL (mbTOC) x L/m = Bore Vol	1 4 4	7.7	Comments	SPA	PSH Level		mb1OC		<u>-14</u>	$\overset{D}{O}$	let O,C
	Vol Removed Dissolv (L) (%) US	ed Oxygen (ppm) 2.53 2.20 2.76	EC (uS/em) 99048 78040 78040		Redox (mV) 199 45	T (C) <i>iq</i> 7 <i>l</i> 9.9 <i>L</i> 9.9	Comm (Color, turbic Grey / P	lity, odour)	Tz./hi		<u></u>	ØCc.ks	innes Arthoric Internetisser	e half eiderheiten eine	¥	
	Date 21 ,05,04		}							n ya sa Li ya		e seniacióny) In <u>Adresióny</u> I	ri Chendri		and an	
ampling	Sampled by:	Metals	TPH/BTEX VHC	трн, Voc	Bailer Foot	PAHs	Container typ Phenoxy Acid Herbicides	Nutrients	рсв	svoc	vCHC.	svCHCs	рН	Asbostos		) 
J <b>C</b>	Sample ID	250 ml (P) HINO3 Red	2x40ml Vial(0) HCl Magoon	IL Nil Amber	11. Nil Amber	1L Nil Amber	IL Nil Amber	250 ml (P) Nil Green	IL Nil Amber	<u>Nil</u> Amber	2x40ml Vial(O) HCl Maroon	iL Nil Ambor	250 ml (P) Nil Creen	zipłock bag	Total	

Project No	. 42424.95	1	Project Name	MISS	Merim	Anda	Location	Men	MU	3				n de render de la deserve als neuer de la deserve en de la deserve de la deserve de la deserve en de la deserve de la deserve de la deserve en de la deserve de la deserve de la deserve de la deserve en de la deserve de la deserve de la deserve de la deserve en de la deserve de la deserve en de la deserve de la deserve en de la deserve deserve en deserve de la deserve deserve de la deserve deserve de la deserve deserve de la deserve deserve de la deserve de la deserve deserve deserve de la deserve de la deserve deserve de la deserve de la deserve deserve de la deserve de la deserve de la deserve deserve deserve deserve deserve de la deserve dese	n de la ser de activités de la ser de l	n an
evelopment	Date / / / / Developed by: Well head condition:			Bore De	Time opth (mbTOC)	Start	End		Disc	ent Method charge Rate c Removed	Bailer / Foot	valve / Othe L/min L/min	т	1		alles de la constant de la const la constant de la constant la constant de la constant de la constant la constant de la constant de la constant la constant de la constant de la constant de la constant de la constant la constant de la constant de
	Well Size 50 mm	<b>p</b> 2 mm			WL (mbTOC) x L/m = Bore Vol	$\neq$		Comments		PSH Level		mbTOC		部(1947-1999) - 1942 - 1997 - 1997 - 1942 - 1997 - 1997 - 1943 - 1947	ije od Sleven Pilo Pilo	
	Vol Removed Dissolved (L) (%)	Field Analyse Oxygen (ppm)	EC (uS/cm)	рН	Redox (mV)	T (C)	Comm (Color, turbic								(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
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urging	Date U/05/04		I			Start	End	]	Developm	ent Method	Bailer / Foot	valve / Lou	Flow		)	1. 18 1. 19 1. 19 1. 19 1.
	Developed by: OX- Well head condition:	n	•		Time pth (mbTOC) WL (mbTOC)	1047 4 200			Dise	charge Rate e Removed PSH Level	30	L/min L/min mbTOC			•	9 1. 1. 1.
	Well Size 30 mm	32 mm	]	8	x L/m = Bore Vol	4 10	2.5	Comments	30	<u>ل</u>	pur	. 1			र र र	, , ,
·	Vol Removed Dissolved (L)' (%)	Field Analys Oxygen (ppm) 2, 4 (	EC (uS/cm)	pH	Redox (mV)	т (С) 19,6	Comm (Color, turbic	fity, odour)					•		PID	
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Sampling	Date 11,05,09		1 San	npling Method	Bailer / Footv	alve / Low Flo	u	· · ·								
	Sampled by:	Metals	TPH/BTEX VHC	трң, уос	OCP/OPP	PAHs	Container type Phonoxy Acid Herbicides	e and size Nutrients	РСВ	SVOC	vCHC:	svCHCs	pH	Asbostos	[]	
,O	Sample ID	250 ml (P) HINO3	2x40ml Viak(G) HC1	IL Nil	IL Nii	1L Nil	IL. Nil	250 mi (P) Nil ·	IL Nil	1L Nii	2x40ml Vial(C) HCl	IL Nil	250 ml (P) Nii	ziplock bag	Total	
Primar Duplicat		Red	Marcon	Ambier	Amber	Amber	Amber	Green	Amber	Amber	Maroon	Amber	Green	<b></b>		
		L	<u> </u>	<u> </u>		L	<u></u>			L	L	· · · · · · · · · · · · · · · · · · ·			٤	

URS	-				-		MPLING D			R(	) PF ID•	Mw	<u>1                                    </u>	Z	ana di di si Na Santa Santa Santa Santa Santa Santa	Weingerein, Durch von der Schneiden Ausschlutzungen Ausschl
Project No	. 42424195	•	Project Name	M.55	Nerion	hula	Location	Mex	EMBO	un						(1) State of the second secon second second sec
Development	Date // Developed by:				Time	Start	End			nent Method scharge Rate	Bailer / Foo	tvalve / Oth L/min			alis Sheriya Sheriya	N Construction of the second sec
	Well head condition:		-		epth (mbTOC) SWL (mbTOC)					ne Removed PSH Level	l	L/min mbTOC				An an ann an Ann an Ann an Ann An Ann an Ann An Ann an Ann
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	Vol Removed Dissolve	Field Analys d Oxygen	es EC	pH	Redox	T	Comm	nents								an a
	(L) (%)	(ppm)	(uS/cm)		(mV)	(C)	(Color, turbi	dity, odour)		<u> </u>		<u></u>				a da anti-array (1997) Anti-array (1997) Anti-array (1997) Anti-array (1997)
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Purging	Date 21/5 01 Developed by: M					Start	End	1			Bailey/ Foo			·	_	
	Developed by: <u>MC</u> Well head condition:	GUD	-	Bore D	Time Depth (mbTOC)	TUC	-			scharge Rate	57	L/min	<u> </u>			and the second
	Well Size 50 mm	32 mm	]		SWL (mbTOC) x L/m		2.3	Comments	DRY	PSH Level		mbTOC	<u> </u>		_	
	L/m 4	Field Analys	) es	L	= Bore Vol	94	_		411	<u>e</u>			·		-	
	Vol Removed Dissolve	d Oxygen (ppm)	EC (uS/cm)	pH	Redox (mV)	Т (С)	Comr (Color, turbi			يې بې	ч. Ч.	·	· .		<b>]</b> ·	
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	78														-1	
			· .		3										-	·
			San	npling Metho	Bailer Foot	valve / Low Fl	ow Container typ	e and size	•		2 - Lige	4 7	-			
Sampling	Date 10509 Sampled by:			TPH, VOC	OCP/OPP	PAHs	Phenoxy Acid Herbicides	Nutrients	рсв	svoc	vCHCs	syCHCs	pH .	Asbestos		]
-		Metals	TPH/BTEX VHC	in toc		1				1					Total	
Sampling S.US	Date 11_105#104 Sampled by:	Metals 250 ml (P) HNO3 Red		IL Nü Amber	IL Nil Amber	iL Nil Amber	1L NII Ambor	250 ml (P) Nil Orean	IL Nil Amber	IL Nil Amber	2x40ml Vial(G) HC1 Maroon	IL Nil Amber	250 anl (P) Nill Oreon	zipiock bag	4 Otal	

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# Appendix H Laboratory Analytical Reports and Chain of Custody Documentation

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*	CHAIN OF CUSTOD	Y - MOBIL/	ALS GF	RA CONTR	ACT										<u> </u>	<u>316</u>	224	<u>+</u>	FOR LA	BORATO	RYUSE	ONLY (C	rcie)		
ONSULTANT: U	rs australia	ALS Labora (Circle Labor	-	Brisbane Melbourne			D REQU (List due		NTS (r	nark D	ue dat	e or 'X'	'}		ALSI	Nobil Qu EN/030		mber:		ly Seal li e / froze		cks	Yes	No	NA
		see address i	below)	Sydney)	Standa	rd - 5 da	ay TAT:	)			•	co	C SEQ	UENCE	NUMBER	(Circle)			presen	t upon n	sceipt?	YN	Yes	No	NA
HONE NO: 02	89255500	Electronic Fo		Standard Con	suitant (	office F	ormats.			coc:	$\odot$	2	3	4	5	6	7			m Samp	le Temp				
AX NO: 02		Results en		Standard Con						OF;	6	Ø	· 3	4	5	6	7	<u>^</u>	on Rec		1.3	°C	1		
ROJECT NO:	42424195	Mobil TEANOT									8Y:				RECEIVE	DBY: S	AKHI	1 T	RELINQU	ISHED BY:			RECEIV	ED BY:	
ONSULTANT PM:	Thomus Onus	MOBIL SIT		MERRI	mBi	<u>عاد</u>	<b>)</b>					TIL 45%			DATE: ]5	.ta	THE.	in	DATE:		-	ME	DATE:		TIME
	LUKE ALEXANDER	MOBIL GRA	( PN4:	NIKKI	mar	SIM	OVL	<b>c</b>	DATE:	210	210-	TIME:					_		L	& C anal				. Total Cv	anide, Total Fluo
OMMENTS:												. –							addition	al metals	s (Sn, Be	e, Co, Mo	, Se)	.,	
							CC	ONTAIN	NER TY	'PE & I	RESE	RVATI	VE			ANAL						red (eg. A ecifically re		nder 'Additi	onal Information'.
	SAI	PLE DETAILS		1	SOLID					NATER				1		•	B	C	D	E	F	G			
LAB ID	SAMPLE ID	DATE	TIME	MATRIX (Solid / Water)	Soil Jar Unpres. (G) for all tests Plus Plastic Bag (for type G)	40mi Viai Pair (G) HCL. or Sodium Bisulphate (Type A, C)	0.5 or 1L (G) Unpreserved (Type A,B)	125mi (P) HNOa. (Type A,C, D)*	250ml (P) Unpreserved. (Type E)	125ml HCI (Type E)	40mi Vial Pair (G) Sodium Bisulphate (Type E)	TOC vial (G) H <sub>2</sub> SO, (Type E)	1L (G) Unpreserved (Type F)	Other: e.g. 250ml NaOH for Cyanide (Type G)	Total No of Containers	трн, втех, Рь	PAH, Speciated Phenois	VCH and Metals (As, Ba, Cd, Cr, Cu, Hg, NI. Pb, V, Zn)	Metals (As, Ba, Cd, Cr, Cu, Hg, Ni. Pb, V, Zn, Sb, Co, Mo, Se, Sn)	TOC, diss. mettane, nitrate, sulphate, ferrous/ferric iron	OC & OP Pesticides	Landfill and State EPA Specific Waste Soil Classification (see**)	OTHER-see comments if insufficient room to record details	ОТОН	Additional information e.g. elevated PID readings, gross contamination suspected, total metals required etc.
1 <u>)</u>	MW5-0.2-0.3	13/05/09		SOUD	×						-				1	•		L				 		×	
ŀ	MUS-0.5-0.6			1	×										1	×	×	7.							
2	MW5-1.0-1.2	$\checkmark$			×	· · · ·								1	١	*	×	×						Ĩ	
[1] 13)		14/05/09			×		Envi				ivisi	on			1		1					1		×	
3)	MW5_2.8-3.0	1			×				Sydn	-					١			[						×	
14)	Mul5 _ 3.8-4.0				x	—			ork C			_			1			{ 						X	,
3		13/05/09	• • • •	<u>     </u>	×		E	SC	)9(	)7(	78:	2			i	×	×	×				+		· ·	
5	MW6_0.7-0.8	12102101			X	 									1	<u>^</u>		1				1	<u>├</u> ───┤		
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R) 7)	MWG_3.8-4.0	V		<b> </b>	X										<b></b>			14			ļ		ļ	×	<u> </u>
	MW7 0.2-0.3	13/05/09	<u></u>	<b> </b>	×										<u> </u>	9	4	#					<sup> </sup>	X	<u> </u>
5	MW7-05-0.6			· ·	×										1	$\star$	×	X			ļ	<u> </u>	<u> </u>		
6	mw7_1.0-1.2	$\checkmark$			×										1	×	X	X							
	TOTAL																						7		

ALS Mobil Approved Laboratories: Melbourne: 2-4 Westall Road, Springvale, VIC 3171. Ph: 03 8549 9600

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Sydney: 277-289 Woodpark Rd, Smithfield, NSW 2164. Ph: 02 8784 8555 Brisbane: 32 Shand St. Stafford, QLD 4053. Ph: 07 3243 7222

*	CHAIN OF CUSTODY														1	318	<u>55</u>	5	FOR LA	BORATO	RY USE	ONLY (CI	rcie)		
ONSULTANT:	is australia	ALS Labora (Circle Labora	•	Brisbane Melbourne	Non St	andard	(List du	ue date)	ENTS (1	mark E	)ue dat					Nobil Qu EN/030	iote nui V07 V5	nber:		ty Seal Ir >e / frozen		cks	Yes	No	NA
	ł	see address i	oelow)	Sydney 🤇	Standa	rd - 5 d	ay TAT:	2				co	C SEQ	UENCE P	WMBER	(Circle)			presen	it upon re	ceipt?	ΥN	Yes	No	NA
	89255500	Electronic Fo	mats:	Standard Cons	sultant C	Office F	ormate	B.		COC:	1	0	3	4	5	6	7		Rando	m Sampi	le Temp	erature			
ax no: 02	89.25 5555	Results en	ail: Of e	Standard Cons	sultant C	Office F	leporti	ng.		OF:	1	ŏ	3	4	5	6	7		on Rec	ceipt		÷			
ROJECT NO:	42424195	Results en Mobil-ITP/WO-)	iwinber(o	10/4:	566	5 45	Sak	2	RELING	Y ISHE	D BY:				RECEIVE	D BY:			RELINQU	ISHED BY:			RECEIV	ED BY:	
ONSULTANT PM:	Thomus Onus	MOBIL SIT	'E :	MERRIN	AU	NA.			RELING	Hs	-		-	-											
SAMPLER:	Thomus Onus Luké Alexander	MOBIL GRA	PM:	Nikki	Mak	sin	NOV	jîc.	DATE:	15%	25/0	TIME:	11.0	$\infty$	DATE:		TIME:		DATE:		т	ME:	DATE:		TIME:
OMMENTS:				·								,			** Defau	lt Type G	(EPA Vic	toria) - T		& C analy nal metals				s, Total C	yanide, Total Fluori
								CONTAI	INER TY	PE &	PRESE	RVATIN	VE			ANALY				h box grou issumed u				nder 'Addi	tional information'.
	SAM	PLE DETAILS	_		SOLID				,	WATER						A	В	C	D	E	F	G	T		
LAB ID	SAMPLE ID	DATE	TIME	MATRIX · (Solid / Water)	Soil Jar Unpres. (G) for all tests Plus Plastic Bag (for type G)	40ml Vial Pair (G) HCL or Sodium Bisulphate (Type A, C)	0.5 or 1L (G) Unpreserved (Type A.B)	125mi (P) HNO <sub>1</sub> (Type A,C, D)*	250mi (P) Unpreserved. (Type E)	125mi HCI (Type E)	40mi Viel Pair (G) Sodium Bisulphate <b>(Type E)</b>	TOC vial (G) H <sub>2</sub> SO4 (Type E)	1L (G) Unpreserved (Type F)	Other: e.g. 250ml NaOH for Cyanide (Type G)	Total No of Containers	TPH, BTEX, Pb	PAH, Speciated Phenois	VCH and Metals (As, Ba, Cd, Cr, Cu, Hg, Ni. Pb, V, Zn)	Metals (As, Ba, Cd, Cr, Cu, Hg, Ni. PD, V, Zn, Sb, Co, Mo, Se, Sn)	TOC, diss. methane, nitrate, sulphate, ferrous/ferric iron	OC & OP Pesticides	Landfill and State EPA Specific Waste Soli Classification (see**)	OTHER -see comments if insufficient room to record details	ОТОН	Additional information e.g. Additional information e.g. elevated PID readings, gross contaminetion suspected, total metals required etc.
20)	MW7-1.8-2.0	14/05/09		SOLID	×										١	1								×	
21)	mw7_2.8-3.0	1		1	×							, ]			1									×	
2) 21) 22)	MW7-3-8-4.0	V			×										1					1			1	×	
1	QC100_13/05/09	13105109			×										I	×	×	×				1	<u> </u>		·
Q	QC 300_14105109	14105/09		LIQUID		×	×	×							4	×	×	7		<u> </u>		1			
q	QC 400_14/05/09	1.100101		J.		×	×	X							4	×	×	×				+	+		
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<u>}v</u> _	TRIPBLANK_1410510	V		5020	<u>├</u>									┝───								+	+		
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	1						L																		
(23)	MWS-0-5	-0.6	13/5	19								<u> </u>					<u> </u>						<u> </u>		
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	TOTAL																		1		}				

ALS Mobil Approved Laboratories: Melbourne: 2-4 Westall Road, Springvale, VIC 3171. Ph: 03 8549 9600

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Sydney: 277-289 Woodpark Rd, Smithfield, NSW 2164. Ph: 02 8784 8555

Brisbane: 32 Shand St. Stafford, QLD 4053. Ph: 07 3243 7222

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## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



## Environmental Division

## SAMPLE RECEIPT NOTIFICATION (SRN) Comprehensive Report

Work Order	: ES09	07082			
Client	: MOBIL	. OIL AUSTRALIA PTY LTD	Laboratory	: Enviro	nmental Division Sydney
Contact	: MR TH	IOMUS ONUS	Contact	: Charlie	e Pierce
Address	Level	AUSTRALIA PTY LTD 3, 116 Miller Street H SYDNEY NSW, AUSTRALIA	Address		89 Woodpark Road Smithfield Australia 2164
E-mail	: thomu	s_onus@urscorp.com	E-mail	: charlie	e.pierce@alsenviro.com
Telephone	: +61 02	2 8925 5500	Telephone	: +61-2-	-8784 8555
Facsimile	:		Facsimile	: +61-2	-8784 8500
Project	: 42424	195	Page	:1 of 3	
Order number	: 10/450	64596			
C-O-C number	: 13165	4-55	Quote number	: ES200	070191 (EN/030/07 V5 5 day)
Site	: MERF	RIMBULA			
Sampler	: LA		QC Level	: NEPM QCS3	1 1999 Schedule B(3) and ALS requirement
Dates		*******	······································		
Date Samples Rec	eived	: 15-MAY-2009	Issue Date		: 18-MAY-2009 10:43
Client Requested E	ue Date	: 21-MAY-2009	Scheduled Reportir	ng Date	21-MAY-2009
Delivery Deta	ails		an a		a <sup>nan</sup> makana mananana ana ana ana ana ana ana ana
Mode of Delivery		: Carrier	Temperature	•	: 1.3 - Ice present
No. of coolers/boxe	es	: 1 HARD	No. of samples rec	eived	: 23
Sercurity Seal		: Not intact.	No. of samples ana	alysed	: 10

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA).
   Please refer to the Sample Container(s)/Preservation Non-Compliance Log at the end of this report for details.
- Sample(s) have been received within recommended holding times.
- Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).
- Sample id QC300 and QC400 were not received appropriately perserved bottle for filtered metal analysis, Lab will sub sample from Amber Glass Orange bottle provided
- ALS received two jars labelled with sample ID MW5\_0.5-0.6. After discussion with URS the correct jar was identified due to the colour and labelled as ALS#1 for analysis. The extra jar is on hold as ALS #23.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal Aqueous (14 days), Solid (90 days) from date of completion of work order.

Environmental Division Sydney Part of the ALS Laboratory Group 277-289 Woodpark Road Smithfield NSW Australia 2164 Tel. +61-2-8784 8555 Fax. +61-2-8784 8500 www.alsglobal.com A Campbell Brothers Limited Company



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
EG020A-F : Dissolved Metals by ICP-MS - S	uite A	
QC300_14/05/09	- Amber Glass Bottle - Unpreserved	- Clear Plastic Bottle - Nitric Acid; Filtered
QC400_14/05/09	- Amber Glass Bottle - Unpreserved	- Clear Plastic Bottle - Nitric Acid; Filtered
EG035F : Dissolved Mercury by FIMS		
QC300_14/05/09	- Amber Glass Bottle - Unpreserved	- Clear Plastic Bottle - Nitric Acid; Filtered
QC400_14/05/09	- Amber Glass Bottle - Unpreserved	- Clear Plastic Bottle - Nitric Acid; Filtered

## Summary of Sample(s) and Requested Analysis

ounning of ou	inple(s) and Nequ	200100 / 11/01/010		·,		
process neccessary tasks. Packages r the determination tasks, that are includ	y for the executior nay contain addition of moisture cont ed in the package. d/or time(s) are sh med by the labo sampling time is	al analyses, such as tent and preparation	On Hold) SOIL No analysis requested	SOIL - Type A1 Mobil Type A - Soil	SOIL - Type B Mobil Type B - Soil	SOIL - Type C Mobil Type C - Soil
E\$0907082-001	13-MAY-2009 15:00	MW5 0.5-0.6		<u>√</u>	<u>√</u>	<u>∞</u> ∠
ES0907082-002	13-MAY-2009 15:00	MW5_1.0-1.2		1	-	
ES0907082-003	13-MAY-2009 15:00	 MW6_0.2-0.3		1	1	
ES0907082-004	13-MAY-2009 15:00	MW6_1.0-1.2		1	1	<b>v</b>
ES0907082-005	13-MAY-2009 15:00	MW7_0.5-0.6		1	1	<ul> <li>✓</li> </ul>
ES0907082-006	13-MAY-2009 15:00	MW7_1.0-1.2		1	1	<ul> <li>✓</li> </ul>
ES0907082-007	13-MAY-2009 15:00	QC100_13/05/09		<ul> <li>✓</li> </ul>	1	$\checkmark$
ES0907082-010	14-MAY-2009 15:00	TRIPBLANK_14/05/09	[	1	1	
ES0907082-011	13-MAY-2009 15:00	MW5_0.2-0.3	~	1		
ES0907082-012	14-MAY-2009 15:00	MW5_1.8-2.0	1			
ES0907082-013	14-MAY-2009 15:00	MW5_2.8-3.0	~			
ES0907082-014	14-MAY-2009 15:00	MW5_3.8-4.0	✓			
ES0907082-015	13-MAY-2009 15:00	MW6_0.7-0.8	✓			
ES0907082-016	14-MAY-2009 15:00	MW6_1.8-2.0	~			
ES0907082-017	14-MAY-2009 15:00	MW6_2.8-3.0	~			
ES0907082-018	14-MAY-2009 15:00	MW6_3.8-4.0	✓			
ES0907082-019	13-MAY-2009 15:00	MW7_0.2-0.3	~			
ES0907082-020	14-MAY-2009 15:00	MW7_1.8-2.0	1			
ES0907082-021	14-MAY-2009 15:00	MW7_2.8-3.0	~			
ES0907082-022	14-MAY-2009 15:00	MW7_3.8-4.0	1			
ES0907082-023	13-MAY-2009 15:00	MW5_0.5-0.6	1			

 Issue Date
 : 18-MAY-2009 10:43

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 : 3 of 3

 Work Order
 : ES0907082

 Client
 : MOBIL OIL AUSTRALIA PTY LTD



Matrix: <b>WATER</b> Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - Type A Mobil Type A - Water	WATER - Type B Mobil Type B - Water	WATER - Type C Mobil Type C - Water
ES0907082-008	14-MAY-2009 15:00	QC300_14/05/09	<u> </u>	52	<u>≥≥</u> √
ES0907082-009	14-MAY-2009 15:00	QC400_14/05/09		1	. 1

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### **Requested Deliverables**

#### MR THOMUS ONUS

- \*AU Certificate of Analysis NATA ( COA )
- A4 AU Sample Receipt Notification Environmental (SRN)
- AU Chromatogram Cover Sheet ( CHROM )
- AU Interpretive QC Report (Anon QCI Not Rep) ( QCI\_NoAnon )
- AU QC Report (Anon QC Not Rep) NATA (QC\_NoAnon)
- Default Chain of Custody ( COC )
- EDI Format ENMRG (ENMRG)
- EDI Format MRED (MRED)

#### **PROJECT INVOICES**

- A4 - AU Tax Invoice ( INV )

#### THE MOBIL RESULTS

- \*AU Certificate of Analysis NATA ( COA )
- A4 AU Sample Receipt Notification Environmental (SRN)
- AU Chromatogram Cover Sheet ( CHROM )
- AU Interpretive QC Report (Anon QCI Not Rep) ( QCI\_NoAnon )
- AU QC Report (Anon QC Not Rep) NATA (QC\_NoAnon)
- Default Chain of Custody ( COC )
- EDI Format ENMRG (ENMRG)
- EDI Format MRED (MRED)

#### URS EDMS EQUIS5

- EDI Format - EQUIS V5 ( EQUIS\_V5 )

Email	thomus_onus@urscorp.com
Email	thomus_onus@urscorp.com
Email	thomus_onus@urscorp.com
Email	thomus_onus@urscorp.com
Email	thomus_onus@urscorp.com
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	viro.com
	· · ·
Email	mobil_results@urscorp.com
Email	mobil_results@urscorp.com

# ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES

## **Environmental Division**



## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0907082	•	Page	: 1 of 10
Client	: MOBIL OIL AUSTRALIA PTY LTD		Laboratory	: Environmental Division Sydney
Contact	: MR THOMUS ONUS		Contact	: Charlie Pierce
Address	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060		Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: thomus_onus@urscorp.com		E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500	3	Telephone	: +61-2-8784 8555
Facsimile	:	•	Facsimile	: +61-2-8784 8500
Project	: 42424195		QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: MERRIMBULA			
C-O-C number	: 131654-55		Date Samples Received	: 15-MAY-2009
Sampler	:LA	÷	Issue Date	: 21-MAY-2009
Order number	: 10/45664596			
			No. of samples received	: 23
Quote number	: EN/030/07 V5 5 day		No. of samples analysed	: 10

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

Environmental Division Sydney

Part of the ALS Laboratory Group

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## 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 date 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 NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding 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 (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: SOIL					Evaluation	: × = Holding time	breach ; ✓ = Withi	n holding tim
Method		Sample Date	E	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content			Sec. 1					
Soll Glass Jar - Unpreserved	-ниунт талааны на							
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009				18-MAY-2009	20-MAY-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								L
EG005T: Total Metals by ICP-AES					Sellin Ze			
Soil Glass Jar - Unpreserved								
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	09-NOV-2009	$\checkmark$	18-MAY-2009	09-NOV-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,			[				
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								
Soil Glass Jar - Unpreserved								
TRIPBLANK_14/05/09	•	14-MAY-2009	18-MAY-2009	10-NOV-2009	<u> </u>	18-MAY-2009	10-NOV-2009	✓
EG035T: Total Recoverable Mercury by FIN	٨S					de la composición de La composición de la c	57	
Soll Glass Jar - Unpreserved								
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	09-NOV-2009	$\checkmark$	18-MAY-2009	10-JUN-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								
EP074D: Fumigants							1 	
Soil Glass Jar - Unpreserved						1		
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	$\checkmark$	18-MAY-2009	27-MAY-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								



Method		13-MAY-2009 13-MAY-2009	Extraction / Preparation			1	Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds						Mar de la com		÷
Soil Glass Jar - Unpreserved	аналанар <sup>анин</sup> инининин нөөрөр жаймалараандараараан баймалараан баймалараан баймалараан <mark>дайн жа</mark> малар жаймалар жа	1	1		Maria Maria da Arra.			1
MW5 0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	~	18-MAY-2009	27-MAY-2009	1
MW6_0.2-0.3,	MW6 1.0-1.2,				·			
MW7_0.5-0.6,	MW7 1.0-1.2,							
QC100_13/05/09	<u> </u>							
EP074F: Halogenated Aromatic Compounds								*******
Soil Glass Jar - Unpreserved						[	1	1
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	✓	18-MAY-2009	27-MAY-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09	•							
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved	илинулдунын нининдаалаалдадар кызулаанын нациялаланд байлаартандын ладдар байлаартандар на дайлаалаан көз эзист Т							
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	$\checkmark$	18-MAY-2009	27-MAY-2009	1
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								
EP075(SIM)A: Phenolic Compounds				10 A				
Soll Glass Jar - Unpreserved						I		
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	19-MAY-2009	27-MAY-2009	$\checkmark$	20-MAY-2009	28-JUN-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							ļ
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09				[		L		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbor	15		difference and the second	14				
Soil Glass Jar - Unpreserved	, I U U U U U U U U U U U U U U U U U U						I	
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	19-MAY-2009	27-MAY-2009	✓	20-MAY-2009	28-JUN-2009	1
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								1

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Project	: 42424195



Method		Sample Date	Extraction / Preparation		1	Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		l			1	Ī	
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	✓	18-MAY-2009	27-MAY-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09	_							
Soil Glass Jar - Unpreserved				1				
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	19-MAY-2009	27-MAY-2009	✓	20-MAY-2009	28-JUN-2009	1
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,							
QC100_13/05/09								
Soil Glass Jar - Unpreserved								
TRIPBLANK_14/05/09		14-MAY-2009	18-MAY-2009	28-MAY-2009	1	18-MAY-2009	28-MAY-2009	1
Soil Glass Jar - Unpreserved								
TRIPBLANK_14/05/09		14-MAY-2009	19-MAY-2009	28-MAY-2009	✓	20-MAY-2009	28-JUN-2009	✓
EP080: BTEX								
Soil Glass Jar - Unpreserved								
MW5_0.5-0.6,	MW5_1.0-1.2,	13-MAY-2009	18-MAY-2009	27-MAY-2009	1	18-MAY-2009	27-MAY-2009	✓
MW6_0.2-0.3,	MW6_1.0-1.2,							
MW7_0.5-0.6,	MW7_1.0-1.2,						-	
QC100_13/05/09								
Soll Glass Jar - Unpreserved		·						
TRIPBLANK_14/05/09		14-MAY-2009	18-MAY-2009	28-MAY-2009	✓	18-MAY-2009	28-MAY-2009	<ul> <li>✓</li> </ul>
latrix: WATER					Evaluation	: × = Holding time	breach ; ✓ = Withir	holding tim
Method States		Sample Date	Ex	traction / Preparation		T	Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

			1	•		1	•	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS			and the	2010				
Amber Glass Bottle - Unpreserved								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	10-NOV-2009	✓
EG035F: Dissolved Mercury by FIMS								
Amber Glass Bottle - Unpreserved								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				20-MAY-2009	28-MAY-2009	<ul> <li>✓</li> </ul>
EP074D: Fumigants				4. 				
Amber VOC Vial - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	28-MAY-2009	✓
EP074E: Halogenated Aliphatic Compounds			10 au					
Amber VOC Vial - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	28-MAY-2009	✓



Matrix: WATER					Evaluation	: × = Holding time	breach ; ✓ = Withir	n holding time
Method		Sample Date	Ð	draction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074F: Halogenated Aromatic Compounds								
Amber VOC Viai - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009			*	18-MAY-2009	28-MAY-2009	✓
EP074G: Trihalomethanes							a se Nefi	
Amber VOC Vial - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	28-MAY-2009	✓
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009	18-MAY-2009	21-MAY-2009	$\checkmark$	19-MAY-2009	27-JUN-2009	<u>√</u>
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons				<b>1</b>				
Amber Glass Bottle - Unpreserved								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009	18-MAY-2009	21-MAY-2009	✓	19-MAY-2009	27-JUN-2009	✓
EP080/071: Total Petroleum Hydrocarbons			and the second second					
Amber Glass Bottle - Unpreserved								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009	18-MAY-2009	21-MAY-2009	✓	20-MAY-2009	27-JUN-2009	<u> </u>
Amber VOC Vial - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	28-MAY-2009	
EP080: BTEX					880 (P.S. )			<b></b>
Amber VOC Vial - HCI or NaHSO4								
QC300_14/05/09,	QC400_14/05/09	14-MAY-2009				18-MAY-2009	28-MAY-2009	<u> </u>

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PAH/Phenols (GC/MS - SIM)



## **Quality Control Parameter Frequency Compliance**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification	
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation		
aboratory Duplicates (DUP)				5	12.00			
Aoisture Content	EA055-103	6	57	10.5	10.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.8	10.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
otal Mercury by FIMS	EG035T	2	13	15.4	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
otal Metals by ICP-AES	EG005T	2	19	10.5	10.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH - Semivolatile Fraction	EP071	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
/olatile Organic Compounds	EP074	1	7	14.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
aboratory Control Samples (LCS)								
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Total Mercury by FIMS	EG035T	1	13	7.7	5.0		NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
otal Metals by ICP-AES	EG005T	1	19	5.3	5.0		NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH - Semivolatile Fraction	EP071	1	18	5.6	5.0	 	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH Volatiles/BTEX	EP080	1	20	5.0	5.0	<ul> <li>✓</li> </ul>	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
olatile Organic Compounds	EP074	1	7	14.3	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
fethod Blanks (MB)								
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
otal Mercury by FIMS	EG035T	1	13	7.7	5.0		NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
otal Metals by ICP-AES	EG005T	1	19	5.3	5.0	<u> </u>	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH - Semivolatile Fraction	EP071	1	18	5.6	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
PH Volatiles/BTEX	EP080	1	20	5.0	5.0	<u> </u>	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
olatile Organic Compounds	EP074	1	7	14.3	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
latrix Spikes (MS)		· · · · · · · · · · · · · · · · · · ·			1			
AH/Phenols (SIM)	EP075(SIM)	1	17	5.9	5.0	✓	ALS QCS3 requirement	
otal Mercury by FIMS	EG035T	1	13	7.7	5.0	~	ALS QCS3 requirement	
otal Metals by ICP-AES	EG005T	1	19	5.3	5.0		ALS QCS3 requirement	
PH - Semivolatile Fraction	EP071	1	18	5.6	5.0		ALS QCS3 requirement	
PH Volatiles/BTEX	EP080	1	20	5.0	5.0		ALS QCS3 requirement	
olatile Organic Compounds	EP074	1	7	14.3	5.0	~	ALS QCS3 requirement	
					.d			
atrix: WATER	Secondary of an Opto,			Evaluation		trol frequency r	not within specification ; <pre> </pre> = Quality Control frequency within specification ;	
	Method		ount	A	Rate (%)	Evaluation	_ Quality Control Specification	
nalytical Methods	Metriou	00	Reaular	Actual	Expected			
aboratory Duplicates (DUP)			10					
Dissolved Mercury by FIMS	EG035F	2	19	10.5	10.0	<u> </u>	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement	

20

5.0

10.0

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EP075(SIM)

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A Campbell Brothers Limited Company

NEPM 1999 Schedule B(3) and ALS QCS3 requirement

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Project	: 42424195



Matrix: WATER				Evaluation	n: × = Quality Co	ntrol frequency r	not within specification ; $\checkmark$ = Quality Control frequency within specificatio
Quality Control Sample Type		С	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	00	Reaular	Actual	Expected	Evaluation	·
Laboratory Duplicates (DUP) - Continued				and Souther			A CARACTER STATE
TPH - Semivolatile Fraction	EP071	1	19	5.3	10.0	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	16	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	16	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	· 1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							and the second
Dissolved Mercury by FIMS	EG035F	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	1	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	16	6.3	5.0	$\checkmark$	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)				Constant		Construction of the second	
Dissolved Mercury by FIMS	EG035F	1	19	5.3	5.0	✓	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	ALS QCS3 requirement
Volatile Organic Compounds	EP074	. 1	16	6.3	5.0	✓	ALS QCS3 requirement



## Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	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	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 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)
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)
Volatile Organic Compounds	EP074	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (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)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCi2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 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) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis 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) (Appdx. 2)



Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis 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) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g 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 B - Non-concentrating)	ORG17B	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.
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.

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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-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

#### Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix:	SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES0907082-005	MW7_0.5-0.6	Zinc	7440-66-6	24.1 %	0-20%	RPD exceeds LOR based limits

• For all matrices, no Method Blank value outliers occur.

• For all matrices, no Laboratory Control outliers occur.

• For all matrices, no Matrix Spike outliers occur.

#### Regular Sample Surrogates

#### Sub-Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted					•		
EP074S: VOC Surrogates	ES0907082-007	QC100_13/05/09	Toluene-D8	2037-26-5	119 %	81-117 %	Recovery greater than upper data
·							quality objective
EP074S: VOC Surrogates	ES0907082-006	MW7_1.0-1.2	Toluene-D8	2037-26-5	121 %	81-117 %	Recovery greater than upper data
							quality objective

### **Outliers : Analysis Holding Time Compliance**

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

• No Analysis Holding Time Outliers exist,

## **Outliers : Frequency of Quality Control Samples**

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

#### Matrix: WATER

Quality Control Sample Type	C	ount	Rate	(%)	Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	1	20	5.0	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	1	19	5.3	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## Environmental Division



## QUALITY CONTROL REPORT

Work Order	: ES0907082	Page	: 1 of 20
Client	: MOBIL OIL AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR THOMUS ONUS	Contact	: Charlie Pierce
Address	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: thomus_onus@urscorp.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500	Telephone	: +61-2-8784 8555
Facsimile	:	Facsimile	: +61-2-8784 8500
Project	: 42424195	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: MERRIMBULA		
C-O-C number	: 131654-55	Date Samples Received	: 15-MAY-2009
Sampler	: LA	Issue Date	: 21-MAY-2009
Order number	: 10/45664596		
		No. of samples received	: 23
Quote number	: EN/030/07 V5 5 day	No. of samples analysed	: 10

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	Signatories This document has been electr carried out in compliance with proced	ronically signed by the authorized signatories dures specified in 21 CFR Part 11.	indicated below. Electronic signing has be
NAIA	accordance with NATA	Signatories	Position	Accreditation Category
	accreditation requirements.	Hoa Nguyen	Inorganic Chemist	Inorganics
	RECOGNISED Accredited for compliance with	Nanthini Coilparampil	Senior Inorganic Chemist	Inorganics
WORLD RECOGNISED ACCREDITATION	ISO/IEC 17025.	Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
	100/120 17020.	Sanjeshni Jyoti Mala	Senior Chemist Volatile	Organics
		Wisam Abou-Maraseh	Spectroscopist	Inorganics
······	en e	A Campbell	Brothers Limited Company	

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#### General Comments

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

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

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



## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:-No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
A055: Moisture Co	ontent (QC Lot: 981602)				la de la composición de la composición Na composición de la c					
ES0907030-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)		1.0	%	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907073-017	Anonymous	EA055-103: Moisture Content (dried @ 103°C)		1.0	%	Anonymous	Anonymous	Anonymous	Anonymous	
A055: Moisture Co	ontent (QC Lot: 981603)				and the second second	til and the second				
ES0907082-007	QC100 13/05/09	EA055-103: Moisture Content (dried @ 103°C)		1.0 ;	%	12.1	12.8	5.7	0% - 50%	
ES0907102-037	Anonymous	EA055-103: Moisture Content (dried @ 103°C)		1.0	%	Anonymous	Anonymous	Anonymous	Anonymous	
CONST: Total Mota	Is by ICP-AES (QC Lot:		No 19 Contraction							
ES0907073-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
	/	EG005T: Barium	7440-39-3	10	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Chromium	7440-47-3	2 ·	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Nickel	7440-02-0	2	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Arsenic	7440-38-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Copper	7440-50-8	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Lead	7439-92-1	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Vanadium	7440-62-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Zinc	7440-66-6	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907073-011	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Barium	7440-39-3	10	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Chromium	7440-47-3	2	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Nickel	7440-02-0	2	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Arsenic	7440-38-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Copper	7440-50-8	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Lead	7439-92-1	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Vanadium	7440-62-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Zinc	7440-66-6	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
CONST: Total Mata	Is by ICP-AES (QC Lot:					102 55			·	
ES0907073-021	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
20030/0/0-021	Anonymous	EG005T: Barium	7440-39-3		mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Chromium	7440-47-3	2	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Nickel	7440-02-0	2 ·	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Nickel	7440-38-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
			7440-50-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Copper EG005T: Lead	7439-92-1	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG0051: Lead EG005T: Vanadium	7439-92-1	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
			7440-62-2	5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Zinc	7440-68-8	1	mg/kg	1	<1	0.0	No Limit	
ES0907082-005	MW7_0.5-0.6	EG005T: Cadmium	7440-43-9	10	+	120	100	24.9	0% - 50%	
		EG005T: Barium	/440-39-3	IV	mg/ka	120		24.3	U 70 - JU 70	

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Sub-Matrix: SOIL					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EG005T: Total Metal	s by ICP-AES (QC Lot:	981115) - continued									
ES0907082-005	MW7_0.5-0.6	EG005T: Chromium	7440-47-3	2	mg/kg	8	7	0.0	No Limit		
		EG005T: Nickel	7440-02-0	2	mg/kg	4	3	0.0	No Limit		
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Copper	7440-50-8	5	mg/kg	40	38	4.5	No Limit		
		EG005T: Lead	7439-92-1	5	mg/kg	203	216	6.0	0% - 20%		
		EG005T: Vanadium	7440-62-2	5	mg/kg	8	7	0.0	No Limit		
		EG005T: Zinc	7440-66-6	5	mg/kg	266	209	# 24.1	0% - 20%		
EG035T: Total Reco	verable Mercury by FIN	/IS (QC Lot: 981116)									
E\$0907073-021	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous		
ES0907082-005	MW7 0.5-0.6	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.2	0.0	No Limit		
EP074D: Fumigants	(QC Lot: 980903)			and a second							
ES0907082-001	MW5_0.5-0.6	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	1	EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074E: Halogenate	d Aliphatic Compounds		all and as								
ES0907082-001	MW5_0.5-0.6	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	,,,,,,,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	EP074; Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074; cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit		

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Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP074E: Halogenate	ed Aliphatic Compound	Is (QC Lot: 980903) - continued								
ES0907082-001	MW5_0.5-0.6	EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit	
	-	EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit	
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit	
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit	
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit	
EP074F: Halogenate	ed Aromatic Compound	Is (QC Lot: 980903)				1				
ES0907082-001	MW5_0.5-0.6	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	_	EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074; 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
•		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	-<0.5	0.0	No Limit	
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP074G: Trihalomet	hanes (QC Lot: 980903	3)			,					
ES0907082-001	MW5_0.5-0.6	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	_	EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP075(SIM)A: Pheno	olic Compounds (QC L	ot: 982269)			and the second					
ES0907051-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
	·	EP075(SIM): 2-Chlorophenol	95-57-8	0,5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907082-001	MW5_0.5-0.6	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	

Page	: 6 of 20
Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP075(SIM)A: Phen	olic Compounds (QC	Lot: 982269) - continued			1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 - 1993 -					
ES0907082-001	MW5_0.5-0.6	EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	_	EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit	
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit	
P075(SIM)B. Polyr	uclear Aromatic Hydr	ocarbons (QC Lot: 982269)								
ES0907051-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
	EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907082-001	MW5 0.5-0.6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	< < 0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	.No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
DARA/A71 Total D	troleum Hydrocarbon									
ES0907082-001	MW5 0.5-0.6		·····	10	mg/kg	<10	<10	0.0	No Limit	
CO090/002-001	0.0-0.0	EP080: C6 - C9 Fraction	I	IV			1	1 0.0	L	

Page	: 7 of 20
Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP080/071: Total Pe	troleum Hydrocarbons	(QC Lot: 980902) - continued		17						
ES0907088-005	Anonymous	EP080: C6 - C9 Fraction		10 ·	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
EP080/071: Total Pe	troleum Hydrocarbons	(QC Lot: 982268)								
ES0907051-001	Anonymous	EP071: C15 - C28 Fraction		100	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP071: C29 - C36 Fraction		100	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP071: C10 - C14 Fraction		50	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907082-001	MW5_0.5-0.6	EP071: C15 - C28 Fraction		100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C29 - C36 Fraction		100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction		50	mg/kg	<50	<50	0.0	No Limit	
EP080: BTEX (QC L	ot: 980902)	and the second secon								
ES0907082-001	MW5_0.5-0.6	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
ES0907088-005 Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous		
	EP080: Toluene	108-88-3	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous		
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
			106-42-3				Ì			
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	Anonymous	Anonymous	Anonymous	Anonymous	
Sub-Matrix: WATER						Laboratory I	Duplicate (DUP) Repor	t ·		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EG020F: Dissolved I	Metals by ICP-MS (QC I									
ES0907084-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Barium	7440-39-3	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Lead	7439-92-1	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907082-009 QC400 14/05/09	QC400 14/05/09	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
ES0907082-009			7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
ES0907082-009		EG020A-F: Arsenic								
ES0907082-009		EG020A-F: Arsenic EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
ES0907082-009					mg/L mg/L	<0.001 <0.001	<0.001 <0.001	0.0 0.0	No Limit No Limit	
ES0907082-009		EG020A-F: Barium EG020A-F: Chromium	7440-39-3	0.001				······		
ES0907082-009		EG020A-F: Barium	7440-39-3 7440-47-3	0.001 0.001	mg/L	<0.001	<0.001	0.0	No Limit	

lage Vork Order	: 8 of 20 - ES0907082								
lient	MOBIL OIL AUSTRA								
roject	42424195								(ALS
						I oboratory	Duplicate (DUP) Repor	·	
ub-Matrix: WATER			CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
aboratory sample ID	Client sample ID	Method: Compound	CASNUMDER	LOR_	Om	Original Result	Dupicate Result	RFD (70)	Recovery Linits (
		Lot: 980998) - continued		0.005		-0.005	0.005	0.0	No Limit
ES0907082-009	QC400_14/05/09	EG020A-F: Zinc	7440-66-6	0.005	mg/L	< 0.005		0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	NO LIMIT
	Mercury by FIMS (QC L	_ot: 980997)			Constant of the		n an		
ES0907084-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	Anonymous	Anonymous	Anonymous	Anonymous
S0907082-009	QC400_14/05/09	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
P074D: Fumigants	s (QC Lot: 981084)				100 C (100 C)				
ES0907084-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
ES0907084-005	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
	EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
P074E Halogenat	ed Aliphatic Compound	s (OC   ot: 981084)	and the second second						
ES0907084-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: lodomethane	74-88-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074; cis-1.2-Dichloroethene	156-59-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Trichloroethene	79-01-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Dibromomethane	74-95-3	5	ug/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.3-Dichloropropane	142-28-9	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Tetrachloroethene	127-18-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074; trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.3- Mchorophopane EP074: Pentachloroethane	76-01-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
						Anonymous	Anonymous	Anonymous	
		EP074: 1 2-Dibromo-3-chioronropane	96-12-81	5	ua/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dibromo-3-chloropropane EP074: Hexachlorobutadiene	96-12-8 87-68-3	5	μg/L μg/L	Anonymous Anonymous	Anonymous	Anonymous	Anonymous

## Page : 9 of 20 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195

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Sub-Matrix: WATER			ľ	,		Laboratory	Duplicate (DUP) Repor		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenate	d Aliphatic Compounds	(QC Lot: 981084) - continued				and the second second			
ES0907084-001	Anonymous	EP074: Chloromethane	74-87-3	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Vinyl chloride	75-01-4	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromomethane	74-83-9	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Chioroethane	75-00-3	50 ;	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
ES0907084-005	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: lodomethane	74-88-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Trichloroethene	79-01-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
	EP074: Dibromomethane	74-95-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
	EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
	EP074: 1.3-Dichloropropane	142-28-9	· 5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EP074: Tetrachloroethene	127-18-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Pentachloroethane	76-01-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Dichlorodifiuoromethane	75-71-8	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Chloromethane	74-87-3	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Vinyl chloride	75-01-4	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromomethane	74-83-9	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Chloroethane	75-00-3	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
EP074E: Halogenate	d Aromatic Compounds								
ES0907084-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromobenzene	108-86-1	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Biolitobenzene EP074: 2-Chlorotoluene	95-49-8	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 4-Chlorotoluene	106-43-4	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.3-Dichlorobenzene	106-46-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous

Page Work Order	: 10 of 20 : ES0907082				4				
Client	MOBIL OIL AUSTRA	ALIA PTY LTD							
Project	42424195							_	(ALS
Sub-Matrix: WATER			ľ			Laboratory	Duplicate (DUP) Repo	t	
Laboratory sample ID	Cilent sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
EP074F: Halogenat	ed Aromatic Compound	ds (QC Lot: 981084) - continued							
ES0907084-001	Anonymous	EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.3-Trichlorobenzene	87-61-6	• 5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
ES0907084-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromobenzene	108-86-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.3-Dichlorobenzene	541-73-1	5 '	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2-Dichlorobenzene	95-50-1	5	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5 ່	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
EP074G: Trihalome	thanes (QC Lot: 98108	4) · · · · · · · · · · · · · · · · · · ·							
ES0907084-001 Anonymous		EP074: Chloroform	67-66-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
	EP074: Bromodichloromethane	75-27-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
		EP074: Dibromochloromethane	124-48-1	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
	EP074: Bromoform	75-25-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous	
ES0907084-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromodichloromethane	75-27-4	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Dibromochloromethane	124-48-1	5 '	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP074: Bromoform	75-25-2	5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
EP075(SIM)A: Pher	olic Compounds (QC L	ot: 981334)			and the second				
ES0907084-005	Anonymous	EP075(SIM): Phenol	108-95-2	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
	•	EP075(SIM): 2-Chlorophenol	95-57-8	1.0′	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2-Methylphenol	95-48-7	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2-Nitrophenol	88-75-5	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2.6-Dichtorophenol	87-65-0	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2.0'	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
P075(SIM)B: Poly	nuclear Aromatic Hydro	carbons (QC Lot: 981334)							
ES0907084-005	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): Naphthalene	91-20-3	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): Acenaphthylene	208-96-8	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): Acenaphthene	83-32-9	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous
		EP075(SIM): Fluorene	86-73-7	1.0	μg/L	Anonymous	Anonymous	Anonymous	Anonymous

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Page	: 11 of 20
Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	42424195



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP075(SIM)B: Polyn	uclear Aromatic Hydro	ocarbons (QC Lot: 981334) - continued									
ES0907084-005	Anonymous	EP075(SIM): Phenanthrene	85-01-8	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Anthracene	120-12-7	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Fluoranthene	206-44-0	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Pyrene	129-00-0	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Benz(a)anthracene	56-55-3	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Chrysene	218-01-9	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
EP080/071: Total Pe	troleum Hydrocarbons	s (QC Lot: 981083)				Contract Contract					
ES0907084-001	Anonymous	EP080: C6 - C9 Fraction		20	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
ES0907084-005	Anonymous	EP080: C6 - C9 Fraction		20	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
EP080/071: Total Pe	troleum Hydrocarbons	(QC Lot: 981333)	The second second						•		
ES0907084-005	Anonymous	EP071: C15 - C28 Fraction		100	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP071: C10 - C14 Fraction		50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP071: C29 - C36 Fraction		50	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
EP080: BTEX (QC L	ot: 981083)					and the second second					
ES0907084-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
	•	EP080: Toluene	108-88-3	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP080: Ethylbenzene	100-41-4	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
ES0907084-005	Anonymous	EP080: Benzene	71-43-2	1	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
	-	EP080: Toluene	108-88-3	2	μg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP080: Ethylbenzene	100-41-4	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	Anonymous	Anonymous	Anonymous	Anonymous		



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

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

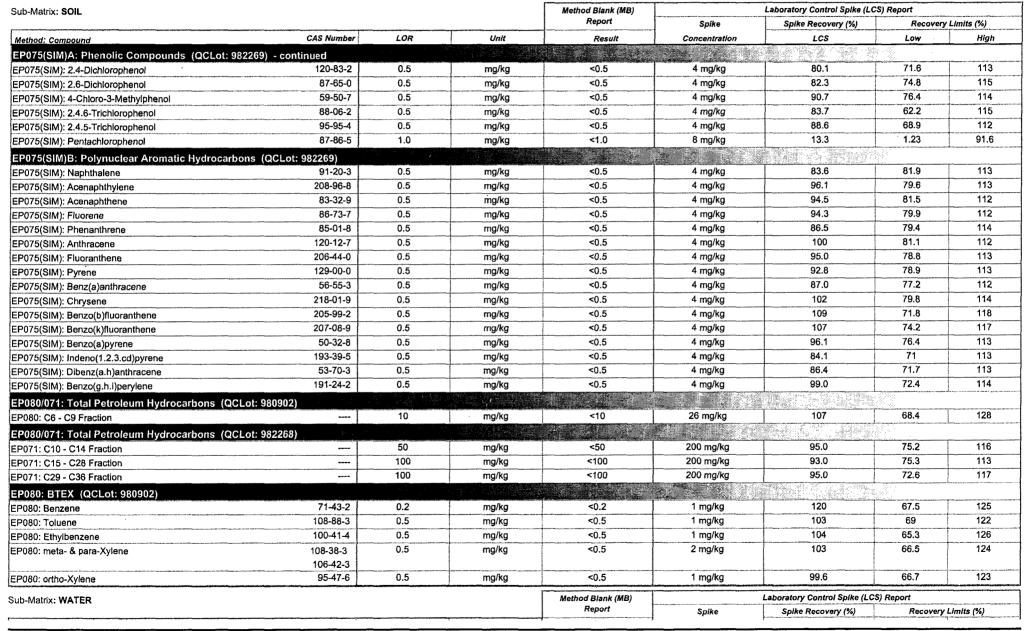
Sub-Matrix: SOIL				Method Blank (MB)		Laboratory Control Spike (LCS) Report		
			,	Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 98	1115)							
G005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	105	90.1	124
EG005T: Barium	7440-39-3	10	mg/kg	<10				
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	99.4	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	99.5	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	102	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	94.2	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	101	88.3	116
G005T: Vanadium	7440-62-2	. 5	mg/kg	<5				
G005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	97.0	81.9	112
EG035T: Total Recoverable Mercury by FIMS	(OCL at: 981116)	영상 아이지 승규는						
G035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	90.6	67	118
P074D: Fumigants (QCLot: 980903)								
P074D: Funingants (GGL01, 980903) P074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	93.1	57	129
P074: 2.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	89.6	68	122
P074: 1.2-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	84.2	59	127
P074: cis-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	87.7	53	129
EP074: Irans-1.3-Dichoropropylene	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	98.3	69	121
			ingrig					
P074E: Halogenated Aliphatic Compounds(	QCLot: 980903) 75-71-8	1	mg/kg		10 mg/kg	33.8	28.9	146
P074: Dichlorodifluoromethane	/5-/1-8	5	mg/kg	<5	10 mg/kg			·
2007 ( . O.) I	74-87-3	1	mg/kg		10 mg/kg	46.1	43	140
P074: Chloromethane	74-07-0	5	mg/kg	<5				
D074. Vinul ablacida	75-01-4	1	mg/kg		10 mg/kg	56.2	41	149
P074: Vinyl chloride		5	mg/kg	<5				
P074: Bromornethane	74-83-9	1	mg/kg		10 mg/kg	97.1	44	152
P074. Biomomentane		5	mg/kg	<5				
P074: Chloroethane	75-00-3	1	mg/kg		10 mg/kg	75.8	49	149
		5	mg/kg	<5				
P074: Trichlorofluoromethane	75-69-4	1	mg/kg		10 mg/kg	78.6	53	139
		5	mg/kg	<5				
P074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	91.6	57	133
P074; lodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	62.1	48	134
P074; trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	91.2	62	128
P074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	97.8	64	126
P074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	104	66	124

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Work Order	: E\$0907082
Client	; MOBIL OIL AUSTRALIA PTY LTD
Project	; 42424195



Sub-Matrix: SOIL				Method Blank (MB)		Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)		Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP074E: Halogenated Aliphatic Compounds (QC	Lot: 980903) - continued	<b>1</b> 0	n an						
P074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	98.0	61	125	
P074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	92.0	62	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	96.9	56	128	
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	94.7	70	124	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	96.3	65	129	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	107	67	123	
P074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	88.1	70	122	
P074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	88.6	71	121	
P074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	99.2	64	144	
P074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	89.2	57	125	
P074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	79.0	39	141	
P074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	89.9	56	128	
P074: 1.1.2.2-Tetrachloroethane	. 79-34-5	0.5	mg/kg	<0.5	1 mg/kg	91.4	57	127	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	89.7	62	126	
P074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	87.1	26.4	144	
P074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	93.4	51	133	
EP074: Hexachiorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	84.4	48	136	
P074F: Halogenated Aromatic Compounds (QC	Lot: 980903)								
P074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	92.5	67	125	
P074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	85.2	68	122	
P074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	78.8	63	127	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	79.5	64	126	
P074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	85.0	66	124	
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	82.1	64	126	
P074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	84.4	67	121	
P074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	77.5	54	134	
P074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	82.8	58	132	
P074G: Trihalomethanes (QCLot: 980903)		-					a feda South		
P074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	96.6	67	123	
P074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	95.2	60	126	
P074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	97.2	58	124	
P074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	98.9	57	121	
EP075(SIM)A: Phenolic Compounds (QCLot: 982	269)								
P075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	100	73.9	115	
P075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	101	80.2	115	
P075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	81.2	76.8	114	
P075(SIM): 3- & 4-Methylphenoi	1319-77-3	1.0	mg/kg	<1.0	8 mg/kg	87.3	72	119	
P075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	85.0	60.3	117	
EP075(SIM): 2.4-Dimethylphenol	105-67-9_	0.5	mg/kg	<0.5	4 mg/kg	89.2	74.5	119	

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Work Order	: ES0907082
Client	MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



## Page : 15 of 20 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195

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Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 980	998)							
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.4	88	110
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	85	109
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.0	89	107
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.3	. 91	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.2	87	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.0	90	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.2	89	109
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	98.4	91	109
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.5	85	115
EG035F: Dissolved Mercury by FIMS (QCLot: 9809	997)	14. S.		and the second second				
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	109	86	116
EP074D: Fumigants (QCLot: 981084)					Parma			
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	82.0	72.7	124
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	91.7	80.7	119
EP074: cis-1.3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	82.3	80.4	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	81.0	79.3	120
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	95.5	79.1	123
EP074E: Halogenated Aliphatic Compounds (QCL	ot: 981084)			and the second				·····
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	83.2	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	85.6	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	109	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	80.4	68.9	131
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	87.6	73.9	126
EP074: Trichlorofluoromethane	75-69-4	50	· μg/L	<50	100 µg/L	86.9	71.6	128
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	84.3	72.5	128
EP074: lodomethane	74-88-4	5	µg/L	<5	10 µg/L	* 80.1	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	87.9	77.4	122
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	87.8	79.3	121
EP074: cis-1.2-Dichloroethene	156-59-2	· 5	µg/L	<5	10 µg/L	86.7	79.5	121
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	84.9	75.8	124
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	82.4	77.8	121
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	84.4	73.8	126
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	90.8	75.5	126
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	87.7	76.7	123
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	93.2	76.1	126
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	95.8	79.6	122
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	92.4	79.9	122
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	90.9	75	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	90.3	78.9	121

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Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: <b>42424195</b>



Sub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 98108	4) - continued				÷			
P074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	77.5	61.4	136
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	79.8	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	94,4	77.8	126
P074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	93.0	74.1	128
P074: Pentachioroethane	76-01-7	5	µg/L	<5	10 µg/L	81.9	71.8	126
P074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	83.8	66.4	136
P074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	89.4	67.2	129
P074F: Halogenated Aromatic Compounds (QCLot: 98108	4)	3 · ·	See				50°	
P074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	92.2	80.8	119
P074: Bromobenzene	108-86-1	5	µg/L	⊲5	10 µg/L	90.5	79.3	119
P074: 2-Chlorotoluene	95-49-8	5	µg/L	⊲5	10 µg/L	84.1	78.2	120
P074: 4-Chlorotoluene	106-43-4	5	μg/L	<5	10 µg/L	83.8	79	119
P074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	87.0	78.9	120
P074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	87.2	79.9	119
P074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	 10 μg/L	89.7	82.3	116
P074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	80.1	67.8	129
P074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	91.0	68.6	128
P074G: Trihalomethanes (QCLot: 981084)							. *	<u> </u>
P074: Chloroform	67-66-3	5	μg/L	<5	10 µg/L	89.8	78.2	122
P074: Bromodichloromethane	75-27-4	5	μg/L	<5	10 µg/L	93.3	76.9	123
P074: Dibromochloromethane	124-48-1	5	μg/L	<5	10 µg/L	91.7	78.5	124
P074: Bromoform	75-25-2	5	μg/L	<5	10 µg/L	83.4	73.5	126
P075(SIM)A: Phenolic Compounds (QCLot: 981334)		a an					14	L
P075(SIM): Phenol	108-95-2	0.2	µg/L		2 µg/L	42.6	24.5	61.9
	100-00-2	1.0	μg/L	<1.0				
P075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L		2 µg/L	81.4	63.8	110
		1.0	μg/L	<1.0				
P075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L		2 µg/L	89.4	55.9	112
		1.0	μg/L	<1.0				
P075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	μg/L		4 µg/L	71.3	42.5	114
		2.0	µg/L	<2.0				
P075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L		2 µg/L	83.2	62.7	117
		1.0	µg/L	<1.0				
P075(SIM): 2.4-Dimethylphenol	105-67-9	0.2	µg/L		2 µg/L	82.5	59.9	112
		1.0	µg/L	<1.0				
P075(SIM): 2.4-Dichlorophenol	120-83-2	0.2	µg/L		2 µg/L	77.1	59.3	122
		1.0	µg/L	<1.0				
P075(SIM): 2.6-Dichlorophenol	87-65-0	0.2	µg/L		2 µg/L	81.1	64.3	118
		1.0	µg/L	<1.0				

## Page : 17 of 20 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



Sub-Matrix: WATER	Method Blank (MB)		Laboratory Control Spike (LCS) Report					
				Report	Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
P075(SIM)A: Phenolic Compounds (QCLot: 98	1334) - continued							
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L		2 µg/L	83.2	63	119
		1.0	µg/L	<1.0				
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.2	µg/L		2 µg/L	88.4	58.7	118
. , .		1.0	µg/L	<1.0				
P075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.2	µg/L		2 µg/L	80.3	64	118
		1.0	μg/L	<1.0				
P075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L		4 µg/L	55.8	6.85	95.6
		2.0	μg/L	<2.0				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbo	ons (QCLot: 981334)				1			
P075(SIM): Naphthalene	91-20-3	0.2	µg/L		2 µg/L	87.8	58.6	119
		1.0	µg/L	<1.0				
P075(SIM): Acenaphthylene	208-96-8	0.2	µg/L		2 µg/L	83.8	63.6	114
		1.0	μg/L	<1.0				
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L		2 µg/L	80.7	62.2	113
		1.0	µg/L	<1.0				
P075(SIM): Fluorene	86-73-7	0.2	µg/L		2 µg/L	81.3	63.9	115
		1.0	µg/L	<1.0			·	
P075(SIM): Phenanthrene	85-01-8	0.2	μg/L		2 µg/L	94.7	62.6	116
		1.0	μg/L	<1.0				
P075(SIM): Anthracene	120-12-7	0.2	hð\r		2 µg/L	101	64.3	116
		1.0	µg/L	<1.0				
P075(SIM): Fluoranthene	206-44-0	0.2	µg/L		2 µg/L	95.2	63.6	118
		1.0	µg/L	<1.0				
EP075(SIM): Pyrene	129-00-0	0.2	µg/L		2 µg/L	95.4	63.1	118
		1.0	µg/L	<1.0				
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L		2 µg/L	83.6	64.1	117
		1.0	µg/L	<1.0				
P075(SIM): Chrysene	218-01-9	0.2	μg/L		2 µg/L	85.8	62.5	116
		1.0	µg/L	<1.0				
P075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L		2 µg/L	75.0	61.7	119
		1.0	µg/L	<1.0				
P075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L		2 µg/L	100	61.7	117
		1.0	µg/L	<1.0				
P075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L		2 µg/L	92.2	63.3	117
		0.5	µg/L	<0.5				
P075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L		2 µg/L	80.4	59.9	118
		1.0	µg/Ĺ	<1.0				
P075(SIM): Dibenz(a.h)anthracene	53-70-3	0.2	µg/L		2 µg/L	84.8	61.2	117
		1.0	µg/L	<1.0				

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Work Order	: E\$0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report			
	Report	Spike	Spike Recovery (%)	Recovery	Limits (%)			
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	(QCLot: 981334) - cont	inued						
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.2	μg/L		2 µg/L	81.5	59.1	118
		1.0	µg/L	<1.0				
EP080/071: Total Petroleum Hydrocarbons (QCLot:	981083)	and the second					- (1999) - (1999) - (1999)	
EP080: C6 - C9 Fraction		20	µg/L	<20	260 µg/L	86.8	75	127
EP080/071: Total Petroleum Hydrocarbons (QCLot:	981333)							
EP071: C10 - C14 Fraction		50	µg/L	<50	200 µg/L	72.0	58.9	131
EP071: C15 - C28 Fraction		100	µg/L	<100	200 µg/L	95.5	73.9	138
EP071: C29 - C36 Fraction		50	µg/L	<50	200 µg/L	87.5	62.7	131
EP080: BTEX (QCLot: 981083)	an di se se se a				direct of the		lander Friedlich	
EP080: Benzene	71-43-2	1	μg/L	<1	10 µg/L	79.4	76.2	124
EP080: Toluene	108-88-3	2	μg/L		10 µg/L	76.7	74.4	124
		5	µg/L	<5				
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	77.0	76.1	122
EP080: meta- & para-Xylene	108-38-3	2	μg/L	<2	10 µg/L	76.1	75.7	123
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	83.2	77.9	121



#### Matrix Spike (MS) Report

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

Sub-Matrix: SOIL				Matrix Spike (MS) Report				
			·	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
G005T: Total Metal	s by ICP-AES (QCLot: 981115)		and the second					
ES0907073-021	Anonymous	EG005T: Arsenic	7440-38-2	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Cadmium	7440-43-9	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Chromium	7440-47-3	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Copper	7440-50-8	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Lead	7439-92-1	Anonymous	Anonymous	Anonymous	Аполутоц	
		EG005T: Nickel	7440-02-0	Anonymous	Anonymous	Anonymous	Anonymous	
		EG005T: Zinc	7440-66-6	Anonymous	Anonymous	Anonymous	Anonymous	
G035T: Total Reco	verable Mercury by FIMS (QCL	_ot: 981116)						
ES0907073-021	Anonymous	EG035T: Mercury	7439-97-6	Anonymous	Anonymous	Anonymous	Anonymous	
P074E: Halogenate	d Aliphatic Compounds (QCLo	ot: 980903)					A	
ES0907082-001	MW5 0.5-0.6	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	102	70	130	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	85.2	70	130	
	d Avenuetie Commenceder (OCL						1	
ES0907082-001	d Aromatic Compounds (QCLo MW5_0.5-0.6		108-90-7	0.E.ma/ka	T 00.0	70	130	
		EP074: Chlorobenzene	100-90-7	2.5 mg/kg	80.8		130	
	olic Compounds (QCLot: 98226			<u>.</u>	A falan an a		·····	
ES0907051-001	Anonymous	EP075(SIM): Phenol	108-95-2	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): 2-Chlorophenol	95-57-8	Anonymous	Anonymous	Anonymous	Anonymou	
		EP075(SIM): 2-Nitrophenol	88-75-5	Anonymous	Anonymous	Anonymous	Anonymou	
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	Anonymous	Anonymous	Anonymous	Anonymou	
		EP075(SIM): Pentachlorophenol	87-86-5	Anonymous	Anonymous	Anonymous	Anonymou	
P075(SIM)B: Polyni	uclear Aromatic Hydrocarbons	(QCLot: 982269)						
ES0907051-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	Anonymous	Anonymous	Anonymous	Anonymous	
		EP075(SIM): Pyrene	129-00-0	Anonymous	Anonymous	Anonymous	Anonymous	
P080/071: Total Pet	troleum Hydrocarbons (QCLot	: 980902)						
ES0907082-001	MW5_0.5-0.6	EP080: C6 - C9 Fraction		26 mg/kg	120	70	130	
P080/071: Total Pet	roleum Hydrocarbons (QCLot						.1	
ES0907051-001	Anonymous	EP071: C10 - C14 Fraction		Anonymous	Anonymous	Anonymous	Anonymous	
200007001-007	/ nonymous	EP071: C15 - C28 Fraction		Anonymous	Anonymous	Anonymous	Anonymous	
		EP071: C13 - C26 Fraction		Anonymous	Anonymous	Anonymous	Anonymous	
DANA DTEV (COL		EP071. C29 - C36 F180001		44 5 5			1	
P080: BTEX (QCLc			and the second secon	0.5 malka	120	70	130	
ES0907082-001	MW5_0.5-0.6	EP080: Benzene	71-43-2	2.5 mg/kg	120			
		EP080: Toluene	108-88-3	2.5 mg/kg	92.8	70	130 130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	95.7	/0	130	

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Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL			Matrix Spike (MS) Report					
years and a second s				Spike	Spike Recovery (%)	Recovery	Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EP080: BTEX (QCL	ot: 980902) - continued							
ES0907082-001	MW5_0.5-0.6	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	96.8	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.3	70	130	
ub-Matrix: WATER			Γ		Matrix Spike (MS) Rep	port		
				Spike	Spike Recovery (%)	Recovery	Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EG020F: Dissolved	Metals by ICP-MS (QCLot: 980998)							
ES0907084-005	Anonymous	EG020A-F: Arsenic	7440-38-2	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Barium	7440-39-3	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Cadmium	7440-43-9	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Chromium	7440-47-3	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Copper	7440-50-8	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Lead	7439-92-1	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Nickel	7440-02-0	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Vanadium	7440-62-2	Anonymous	Anonymous	Anonymous	Anonymous	
		EG020A-F: Zinc	7440-66-6	Anonymous	Anonymous	Anonymous	Anonymous	
EG035F: Dissolved	Mercury by FIMS (QCLot: 980997)		and the second					
ES0907084-005	Anonymous	EG035F: Mercury	7439-97-6	Anonymous	Anonymous	Anonymous	Anonymous	
EP074E: Halogenate	ed Aliphatic Compounds (QCLot: 98	1084)						
ES0907084-005	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	Anonymous	Anonymous	Anonymous	Anonymous	
	•	EP074: Trichloroethene	79-01-6	Anonymous	Anonymous	Anonymous	Anonymous	
=P074E· Halogenate	ed Aromatic Compounds (QCLot: 98	1084)		24) s				
ES0907084-005	Anonymous	EP074: Chlorobenzene	108-90-7	Anonymous	Anonymous	Anonymous	Anonymous	
-P080/071: Total Pe	etroleum Hydrocarbons (QCLot: 981					ation (n. 1997) 1997 - Carlos Alexandro 1997 - Carlos Alexandro		
ES0907084-005	Anonymous	EP080: C6 - C9 Fraction		Anonymous	Anonymous	Anonymous	Anonymous	
P080; BTEX (QCL								
ES0907084-005	Anonymous	EP080: Benzene	71-43-2	Anonymous	Anonymous	Anonymous	Anonymous	
		EP080: Toluene	108-88-3	Anonymous	Anonymous	Anonymous	Anonymous	
		EP080: Ethylbenzene	100-41-4	Anonymous	Anonymous	Anonymous	Anonymous	
		EP080: meta- & para-Xylene	108-38-3	Anonymous	Anonymous	Anonymous	Anonymous	
			106-42-3	-		-		
		EP080: ortho-Xylene	95-47-6	Anonymous	Anonymous	Anonymous	Anonymous	

### ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

### Environmental Division



### CERTIFICATE OF ANALYSIS

Work Order	: ES0907082	Page	: 1 of 16
Client	: MOBIL OIL AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR THOMUS ONUS	Contact	: Charlie Pierce
Address	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: thomus_onus@urscorp.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500	Telephone	: +61-2-8784 8555
Facsimile	:	Facsimile	: +61-2-8784 8500
Project	: 42424195	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 10/45664596		
C-O-C number	: 131654-55	Date Samples Received	: 15-MAY-2009
Sampler	: LA	Issue Date	: 21-MAY-2009
Site	: MERRIMBULA	ł	·
		No. of samples received	: 23
Quote number	: EN/030/07 V5 5 day	No. of samples analysed	: 10

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	Signatories This document has been electronica carried out in compliance with procedures	ally signed by the authorized signatories specified in 21 CFR Part 11.	indicated below. Electronic signing h	as been
	accordance with NATA	Signatories	Position	Accreditation Category	
	accreditation requirements.	Hoa Nguyen	Inorganic Chemist	Inorganics	
	Accredited for compliance with	Nanthini Coilparampil	Senior Inorganic Chemist	Inorganics	
	ISO/IEC 17025.	Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics	
		Sanjeshni Jyoti Mala	Senior Chemist Volatile	Organics	
		Wisam Abou-Maraseh	Spectroscopist	Inorganics	

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#### General Comments

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

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

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

- EG005T: Poor precision was obtained for some elements on sample ES0907082-005 due to sample heterogeneity. Results have been confirmed by re-extraction and reanalysis.
- EG020A-F: Unpreserved aliquot was filtered and used for analysis.
- EP080: Level of Reporting raised for toluene due to ambient background levels in the laboratory.

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Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL		Cli	ent sample ID	MW5_0.5-0.6	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6
	Cl	ient sampli	ing date / time	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907082-001	ES0907082-002	ES0907082-003	ES0907082-004	ES0907082-005
EA055: Moisture Content	•		1		and the second second			
^ Moisture Content (dried @ 103°C)		1.0	%	12.1	13.5	22.5	12.5	18.4
EG005T: Total Metals by ICP-AES					and the second second			
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	10	<10	90	<10	120
Cadmium	7440-43-9	1	mg/kg	. <1	<1	1	<1	1
Chromium	7440-47-3	2	mg/kg	<2	<2	14	<2	8
Copper	7440-50-8	5	mg/kg	<5	<5	69	<5	40
Lead	7439-92-1	5	mg/kg	9	<5	205	<5	203
Nickel	7440-02-0	2	mg/kg	<2	<2	14	<2	4
Vanadium	7440-62-2	5	mg/kg	<5	<5	<5	<5	8
Zinc	7440-66-6	5	mg/kg	26	<5	452	<5	266
EG035T: Total Recoverable Mercury by	y FIMS	·	185 <u>6.</u>					
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropyiene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compo	unds							
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	· <5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	· <5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
lodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	1	<ul> <li>&lt;0.5</li> <li>Campbell Brothers Limited Compa</li> </ul>

# Page : 5 of 16 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



#### Analytical Results

Sub-Matrix: <b>SOIL</b>		Clie	ent sample ID	MW5_0.5-0.6	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6
	Cl	ient samplii	ng date / time	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907082-001	ES0907082-002	ES0907082-003	ES0907082-004	ES0907082-005
EP074E: Halogenated Aliphatic Comp	ounds - Continued					27 (1) (1) (1)		· · ·
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	· <0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Comp	ounds			and a start of the second s Second second				
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5 ;	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5 ·	<0.5	<0.5	<0.5
EP074G: Trihalomethanes			· · · · · · · · · · · · · · · · · · ·					
Chioroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0

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Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL		Clie	ent sample ID	MW5_0.5-0.6	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6
	Ci	Client sampling date / time			13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00	13-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907082-001	ES0907082-002	ES0907082-003	ES0907082-004	ES0907082-005
EP075(SIM)B: Polynuclear Aroma			·					
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydi	rocarbons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX				い、 からいも約20年期 19月1日 - 19月1日 - 19月1日 19月1日 - 19月1日 - 19月1日				
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates							1999년 - 1999년 1999년 - 1999년 - 1999년 1999년 - 1999년	
1.2-Dichloroethane-D4	17060-07-0	0.1	%	108	113	105	108	102
Toluene-D8	2037-26-5	0.1	%	116	116	111	110	107
4-Bromofluorobenzene	460-00-4	0.1	%	104	106	100	103	95.1
EP075(SIM)S: Phenolic Compour	nd Surrogates							
Phenol-d6	13127-88-3	0.1	%	105	96.7	100	95.7	106
2-Chlorophenoi-D4	93951-73-6	0.1	%	85.7	89.2	91.9	91.6	96.0
2.4.6-Tribromophenol	118-79-6	0.1	%	74.4	73.6	79.4	75.7	88.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	97.9	97.9	103	100	99.1
	521-00-0			L	1	1		

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Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL	Client sample ID			MW5_0.5-0.6	MW5_1.0-1.2	MW6_0.2-0.3	MW6_1.0-1.2	MW7_0.5-0.6
	_ CI	ient sampli	ing date / time	13-MAY-2009 15:00				
Compound	CAS Number	LOR	Unit	ES0907082-001	ES0907082-002	ES0907082-003	ES0907082-004	ES0907082-005
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	0.1	%	126	122	120	127	114
4-Terphenyi-d14	1718-51-0	0.1	%	108	109	108	110	111
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	112	115	108	110	104
Toluene-D8	2037-26-5	0.1	%	99.6	99.3	94.9	94.1	91.5
4-Bromofluorobenzene	460-00-4	0.1	%	100	102	96.7	99.2	90.5



Sub-Matrix: SOIL		Cli	ent sample ID	MW7_1.0-1.2	QC100_13/05/09	TRIPBLANK_14/05/09		
	CI	ient sampli	ing date / time	13-MAY-2009 15:00	13-MAY-2009 15:00	14-MAY-2009 15:00		
Compound	CAS Number	LOR	Unit	ES0907082-006	ES0907082-007	ES0907082-010		
EA055: Moisture Content			1	and the second secon				<u> </u>
^ Moisture Content (dried @ 103°C)		1.0	%	7.6	12.1		nutuktoxaii.ut.iximiktikutulusiiiiiiaai	
EG005T: Total Metals by ICP-AES				이 승규가?				<b>A</b>
Arsenic	7440-38-2	5	mg/kg	<5	<5			
Barium	7440-39-3	10	mg/kg	10	10			
Cadmlum	7440-43-9	1	mg/kg	<1	<1			
Chromium	7440-47-3	2	mg/kg	3	<2			
Copper	7440-50-8	5	mg/kg	<5	<5			
Lead	7439-92-1	5	mg/kg	<5	6	<5		
Nickel	7440-02-0	2	mg/kg	<2	<2			·
Vanadium	7440-62-2	5	mg/kg	<5	<5			
Zinc	7440-66-6	5	mg/kg	. 8	19			
EG035T: Total Recoverable Mercury b	V FIMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1		ita dalamanin kan kali kan ana ana ana ana ana ana ana ana ana	
EP074D: Fumigants								•
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	I		
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5			
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5			
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5			
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5			
EP074E: Halogenated Aliphatic Compo								Con marter e e e e e e e e e e e e e e e e e e
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	1		
Chloromethane	74-87-3	5	mg/kg	<5	<5			
Vinyl chloride	75-01-4	5	mg/kg	<5	<5			
Bromomethane	74-83-9	5	mg/kg	<5	<5			
Chloroethane	75-00-3	5	mg/kg	<5	<5			
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5			
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5			
lodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5			
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5			
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5			
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5			
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5			÷
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5			
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5			
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5			
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5			
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5			
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5			



Sub-Matrix: SOIL		Clie	ent sample ID	MW7_1.0-1.2	QC100_13/05/09	TRIPBLANK_14/05/09			
	Cl	ient sampli	ng date / time	13-MAY-2009 15:00	13-MAY-2009 15:00	14-MAY-2009 15:00			
Compound	CAS Number	LOR	Unit	ES0907082-006	ES0907082-007	ES0907082-010			
EP074E: Halogenated Aliphatic Compound	is - Continued								
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5				
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5				
1.1.1.2-Tetrachloroethane	630-20-6	<b>→ 0.5</b>	mg/kg	<0.5	<0.5				
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5				
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5				
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5				
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5				
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5				
1.2-Dibromo-3-chloropropane	96-12-8	0.5 ·	mg/kg	<0.5	<0.5				
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5				
EP074F: Halogenated Aromatic Compound	ls								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5				
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5				
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5				
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5				
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5				
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5				
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5				
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5				
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5				
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5				
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5				
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5				
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5				
EP075(SIM)A: Phenolic Compounds									
Phenol .	108-95-2	0.5	mg/kg	<0.5	<0.5				
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5				
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5				
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0				
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5				
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5				
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5				
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5		······		
4-Chioro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5				
2.4.6-Trichiorophenoi	88-06-2	0.5	mg/kg	<0.5	<0.5				
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5				
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0				
								Campbell Brothers Limited Company	

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Work Order	· : ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: SOIL		Cli	ent sample ID		QC100_13/05/09	TRIPBLANK_14/05/09		
	Client sampling date / time		13-MAY-2009 15:00	13-MAY-2009 15:00	14-MAY-2009 15:00			
Compound	CAS Number	LOR	Unit	ES0907082-006	ES0907082-007	ES0907082-010		
EP075(SIM)B: Polynuclear Aromatic H	lydrocarbons				Cart and Indiana		Rift Josephine	
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5			•***
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5			****
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5			••••
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5			
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5			
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5			
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5			
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5			
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5			
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5			
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5			
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5			
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5			====
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5			
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5			****
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5			
EP080/071: Total Petroleum Hydrocarl	oons							
C6 - C9 Fraction		10	mg/kg	<10	<10	<10		
C10 - C14 Fraction		50	mg/kg	<50	<50	<50		
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	====	
C29 - C36 Fraction		100	mg/kg	<100	<100	<100		
EP080: BTEX			:		Service States			
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2		
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5		
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5		
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5		
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5		
EP074S: VOC Surrogates				، دې کې چې د د د د د د د د د د د د د د د د د د				
1.2-Dichloroethane-D4	17060-07-0	0.1	%	114	112			
Toluene-D8	2037-26-5	0.1	%	121	119			
4-Bromofluorobenzene	460-00-4	0.1	%	110	108			
EP075(SIM)S: Phenolic Compound Su	rrogates							' 
Phenol-d6	13127-88-3	0.1	%	99.2	100			
2-Chlorophenol-D4	93951-73-6	0.1	%	92.4	93.0			
2.4.6-Tribromophenol	118-79-6	0.1	%	82.8	79.4			
EP075(SIM)T: PAH Surrogates	·····							
2-Fluorobiphenyl	321-60-8	0.1	%	99.0	97.3	I		
			1		I	I		



Sub-Matrix: SOIL		Clie	ent sample ID	MW7_1.0-1.2	QC100_13/05/09	TRIPBLANK_14/05/09		
	· Cl	ient sampli	ng date / time	13-MAY-2009 15:00	13-MAY-2009 15:00	14-MAY-2009 15:00		
Compound	CAS Number	LOR	Unit	ES0907082-006	ES0907082-007	ES0907082-010		
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	0.1	%	130	112			
4-Terphenyl-d14	1718-51-0	0.1	%	109	109			
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	118	115	116		
Toluene-D8	2037-26-5	0.1	%	104	102	98.3	**==	
4-Bromofluorobenzene	460-00-4	0.1	%	107	104	103		

Page	: 12 of 16
Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: WATER		Clie	ent sample ID	QC300_14/05/09	QC400_14/05/09	 	
	Ci	lient sampli	ng date / time	14-MAY-2009 15:00	14-MAY-2009 15:00	 	
Compound	CAS Number	LOR	Unit	ES0907082-008	ES0907082-009	 	
EG020F: Dissolved Metals by ICP-MS							
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	 	
Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	 	
Cadmlum	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	 	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	 	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	 	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001		
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	 	
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	 	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	 	
EG035F: Dissolved Mercury by FIMS				and and a second se Second second			
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	 	
EP074D: Fumigants							
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	 	
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	 	
cis-1.3-Dichloropropylene	10061-01-5	5	μg/L	<5	<5	 	
trans-1.3-Dichloropropylene	10061-02-6	5	μg/L	<5	<5	 	
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5 ′	<5	 	
EP074E: Halogenated Aliphatic Compoun	ids	-		Designed and the second se			
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	 	
Chloromethane	74-87-3	50	µg/L	<50	<50	 	
Vinyl chloride	75-01-4	50	µg/L	<50	<50	 	
Bromomethane	74-83-9	50	µg/L	<50	<50	 	
Chloroethane	75-00-3	50	µg/L	<50	<50	 	
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50		
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	 	
lodomethane	74-88-4	5	µg/L	<5	<5	 	
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	 	
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	 	
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	 	
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	 	
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	 	
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	 	
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	 	
Trichloroethene	79-01-6	5	µg/L	<5	<5	 	
Dibromomethane	74-95-3	5	µg/L	<5	<5	 	
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	 	
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	 	
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	 	Campbell Brothers Limited Company

# Page : 13 of 16 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



Sub-Matrix: WATER		Clie	ent sample ID	QC300_14/05/09	QC400_14/05/09			
	Cli	ient samplii	ng date / time	14-MAY-2009 15:00	14-MAY-2009 15:00			
Compound	CAS Number	LOR	Unit	ES0907082-008	E\$0907082-009			
EP074E: Halogenated Aliphatic Compo	unds - Continued						PRAS 222 PUT	
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5			
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5			
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5			*****
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5			
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5			
Pentachloroethane	76-01-7	5	µg/L	<5	<5			
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5			
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	+-		
EP074F: Halogenated Aromatic Compo	ounds				26			
Chlorobenzene	108-90-7	5	µg/L	<5	<5			
Bromobenzene	108-86-1	5	µg/L	. <5	<5			
2-Chiorotoluene	95-49-8	5	µg/L	<5	<5			
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5			
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5 ·		****	
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5			<b></b>
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5			
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5			
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5			
EP074G: Trihalomethanes					a de la companya de l	<b>X</b>		
Chloroform	67-66-3	5	µg/L	<5	<5			
Bromodichloromethane	75-27-4	5	µg/L	<5	<5			
Dibromochloromethane	124-48-1	5	µg/L	<5	<5			
Bromoform	75-25-2	5	µg/L	<5	<5			
EP075(SIM)A: Phenolic Compounds				a dha ta				
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0			
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0			
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0			
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0			
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0			
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0			
2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0			
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0			
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0			
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0			
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0			
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0			
EP075(SIM)B: Polynuclear Aromatic Hy	/drocarbons							
Naphthalene	91-20-3	1.0	ug/L	<1.0	<1.0			

## Page : 14 of 16 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



Sub-Matrix: WATER		Cli	ent sample ID	QC300_14/05/09	QC400_14/05/09			
	Cli	ent sampli	ng date / time	14-MAY-2009 15:00	14-MAY-2009 15:00			
Compound	CAS Number	LOR	Unit	ES0907082-008	ES0907082-009			
EP075(SIM)B: Polynuclear Aromatic	Hydrocarbons - Cont	inued						
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	I		
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0			
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0			
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	·		
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0		****	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0			
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0			
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0			
Chrysene	218-01-9	1.0	μg/L	<1.0	<1.0			
Benzo(b)fluoranthene	205-99-2	1.0	μg/L	<1.0	<1.0			
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0			
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5			
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0		·	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0			
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0			
EP080/071: Total Petroleum Hydroca	arbons	•			and the second secon			
C6 - C9 Fraction		20	µg/L	<20	<20			
C10 - C14 Fraction		50	µg/L	<50	<50			
C15 - C28 Fraction		100	μg/L	<100	<100			
C29 - C36 Fraction		50	µg/L	<50	<50			
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1			
Toluene	. 108-88-3	2	µg/L	<5	<5			
Ethylbenzene	100-41-4	2	µg/L	<2	<2			
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2			
ortho-Xylene	95-47-6	2	µg/L	<2	<2			
EP074S: VOC Surrogates						-	en de la desta	
1.2-Dichloroethane-D4	17060-07-0	0.1	%	108	110 '			
Toluene-D8	2037-26-5	0.1	%	100	100			
4-Bromofluorobenzene	460-00-4	0.1	%	93.1	94.2			
EP075(SIM)S: Phenolic Compound S	Surrogates						Réalie du cole de la	
Phenol-d6	13127-88-3	0.1	%	33.9	33.0			
2-Chlorophenol-D4	93951-73-6	0.1	%	77.0	73.8			
2.4.6-Tribromophenol	118-79-6	0.1	%	86.1	87.1			
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	75.2	72.8			
Anthracene-d10	1719-06-8	0.1	%	86.9	84.9			

## Page : 15 of 16 Work Order : ES0907082 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



#### Analytical Results

.

Sub-Matrix: WATER		Clie	ent sample ID	QC300_14/05/09	QC400_14/05/09	 	
	Cli	ient sampli	ng date / time	14-MAY-2009 15:00	14-MAY-2009 15:00	 	
Compound	CAS Number	LOR	Unit	ES0907082-008	ES0907082-009	 	
EP075(SIM)T: PAH Surrogates - Continued							
4-Terphenyl-d14	1718-51-0	0.1	%	70.3	68.2	 	
EP080S: TPH(V)/BTEX Surrogates			· · · · · · · · · · · · · · · · · · ·				
1.2-Dichloroethane-D4	17060-07-0	0.1	%	. 97.4	100	 	
Toluene-D8	2037-26-5	0.1	%	89.6	90.4	 ****	
4-Bromofluorobenzene	460-00-4	0.1	%	91.0	91.6	 	· ·

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Page	: 16 of 16
Work Order	: ES0907082
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195

### Surrogate Control Limits

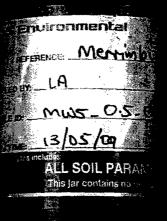
Sub-Matrix <b>: SOIL</b>	·	Recovery	Limits (%)
Compound	CAS Number	Low	High
EP074S: VOC Surrogates	and the second second		
1.2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
EP075(SIM)S: Phenolic Compound St	urrogates		
Phenoi-d6	13127-88-3	24	113
2-Chlorophenoi-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
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	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121
Sub-Matrix: WATER		Recovery	Limits (%)
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP075(SIM)S: Phenolic Compound Su	irrogates		
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	80	120
<b>_</b>	2037-26-5	88	110
Toluene-D8	2037-20-3	00	



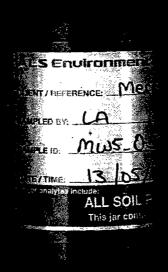












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	CHAIN OF CUSTOD	- MOBIL/	ALS GI	RA CONTR	TOAS						-				1:	316	356	5	FORLA	BORATO	RY USE	ONLY (CI	rcle)		
CONSULTANT: V	es austraup	ALS Labor	atory:	Brisbane	TURN	ROUN	ID RE	UIREN	IENTS (	mark C	bue dat	e or 'X	"		1	Mobil Qu			Custoo	ly Seal ii	ntact?	(	Yes	No	NA
		(Circle Labo	ratory -	Melbourne	Non St	andard	(List d	ue date	)							EN/030	/07 V5		Free ic	e / froze	n icebri	cks \	$\bigcirc$		
		see address	below)		alanda	rd - 5 d	ay TA	$\triangleright$				co	C SEQ	UENCE	NUMBER	(Circle)			presen	t upon re	eceipt?	ΥN	Yes	No	NA
PHONE NO:	289255	Electronic Fo	ormats:	Standard Con	suitant (	Office I	Forma	ts.		coc	$\odot$	2	3	4	5	6	7		Rando	m Samp	le Temp	erature			
FAX NO:		Results en	naii:	Standard Con	sultant (	Office F	Report	ing.		OF:	Ø	4	3	4	5	6	7		on Rec	eipt 4	L.S	ъ.			
PROJECT NO:	42424195	Mobil DPMVO	Numper C		566	45	91	3	RELINC	UISHE	BY:	10			RECEIVED	BY:	2111	1	RELINQU	ISHED BY:			RECEIVE	ED BY:	<u> </u>
CONSULTANT PM:	Thomas Onus	MOBIL SI	TE :	MERRI	meu	A >	н <u>,</u> .				.4	400				10		ę					1 .	-11 -11	
SAMPLER:	LUKE ALEXANDER	MOBIL GR	A PM:	NIKAL	MA	CSI	nO	VIC	DATE:	1815	109	TIME: (	09.	00	DATE:19	15/0	TIME:	3x4Sq	DATE:	-	Ţ	ME:	DATE:		TIME:
COMMENTS:											ł				** Defaul	I Type G	(EPA Vic	toria) - T	/pe A, B	& C analy	ytes + O	C pesticio , Co, Mo,	les, PCBs	i, Total Cy	anide, Total Fluoride &
															L	ANALY	SIS REQ	UIRED -n		······		ed (eg, A,			• ••••••••••••••••••••••••••••••••••••
					00110	1		CONTA	INER T			RVATI	VE		·····		*Dissolv	ed metali C	will be a	tsumed u	niess spe	cifically re	quested u	nder 'Additi	onal information'.
	SAn	PLE DETAILS	1	1	SOLID	+	7	<u> </u>	T	WATER				1		A	B	-	U	E	F	G			
LAB ID	SAMPLE ID	DATE	TIME	<b>MATRIX</b> (Solid / Water)	Soil Jar Unpres. (G) for all tests Plus Plastic Bag (for type G)	40mi Vial Pair (G) HCL or Sodium Bisulphate (Type A, C)	0.5 or 1L (G) Unpreserved (Type A.B)	125mi (P) HNO3 (Type A,C, D)*	250mi (P) Unpreserved. (Type E)	125ml HCf (Type E)	40ml Vial Pair (G) Sodium Bisulphate (Type E)	TOC vial (G) H <sub>5</sub> SOr (Type E)	1L (G) Unpreserved (Type F)	Other: e.g. 250mi NaOH for Cyanide (Type G)	Total No of Containers	rph, btex, pb	PAH, Speciated Phenois	VCH and Metals (As, Ba, Cd, Cr, Cu, Hg, NL Pb, V, Zn)	Metals (As, Ba, Cd, Cr, Cu, Hg, Ni. Pb, V, Zn, Sb, Co, Mo, Se, Sn)	TOC, diss. methane, nitrate, sulphate, ferrous/ferric iron	OC & OP Pesticides	Landfill and State EPA Specific Waste Soil Classification (see**)	OTHER -see comments if insufficient room to record details	ОТОН	Additional information e.g. elevated PID readings, gross contamination suspected, total metals required etc.
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L	TOTAL		141216		24/22		State	UC 12	23.14	28491	2 Sa 2 A		asisti	<b>Z</b> (5)			L	l		<u>[</u>	l	<u> </u>			
ALS Mobil App	roved Laboratories:																								

ALS MODI Approved Laboratories: Melbourne: 2-4 Westall Road, Springvale, VIC 3171. Ph: 03 8549 9600 Sydney: 277-289 Woodpark Rd, Smithfield, NSW 2164. Ph: 02 8784 8555 Brisbane: 32 Shand St. Stafford, QLD 4053. Ph: 07 3243 7222

#### (**6) LabMar**k Sample Receipt Advice **ENVIRONMENTAL LABORATORIES** Customer Service - 1300 552 389 **Client Name:** URS Australia Pty Ltd (Mobil)-Melbourne 19 May 2009 **Date Received:** Due Date: Attention: MR Thomus Onus 26 May 2009 **Client Reference number:** 42424195 Standard **Turnaround:** Merrimbula Laboratory Reference Your Laboratory Kim Jolly Number: 09ENME0016330 +61 3 9538 2277 Contact: If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately. Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No
Custody Seals Intact (if used)	Yes

#### Analysis Requested

Analysis Requested	Method Code	Number Of Samples
BTEX &(C6-C9) in Soil by P&T	1100	1
Mercury in Soil by FIMS	3400	1
Total Metals in Soil By ICP/MS	3100	1
Moisture Content		
PAH in Soil by GC	2100	1
Individual Phenols in Soil by GC	2800	1
TPH (C10 - C36) in Soil by GC	2000	1
VHCs in Soil by P&T	1300	1

#### <u>Note</u>

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a \$150 surcharge and / or be
- analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details

NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

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Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278



This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025 Accreditation Number: 1645

URS Australia Pty Ltd (Mobil)-Melbourne Level 6 1 Southbank Boulevarde SOUTHBANK VIC 3006

#### Attention: Thomas Onus

Project	09ENME0016330
Client Reference	42424195
	Merrimbula
Received Date	19/05/2009 12:00:00 AM

QC200 13/5 **Customer Sample ID** /09 Sample Matrix SOIL 1551286 Labmark Sample No. 13/05/2009 **Date Sampled** voc Test/Reference PQL Unit 1100 BTEX &(C6-C9) in Soil by P&T 4-Bromofluorobenzene - Surrogate % 86 Benzene mg/kg < 0.2 0.2 Toluene 1 mg/kg <1.0 Ethylbenzene 1 mg/kg <1.0 Meta- & Para- Xylene 2 mg/kg <2.0 Ortho-Xylene 1 mg/kg <1.0 **Total Xylenes** 3 mg/kg <3.0 C6-C9 Fraction mg/kg <5.0 5 1300 VHCs in Soil by P&T 74 Pentafluorobenzene-Surrogate 1 % Toluene-D8 - Surrogate 80 % 1 4-Bromofluorobenzene - Surrogate % 88 1 Vinyl Chloride mg/kg <1.0 1 Chloroethane mg/kg <1.0 1 Trichlorofluoromethane 1 mg/kg <1.0 1,1-Dichloroethene <1.0 1 mg/kg Methylene Chloride 5 mg/kg <5.0 trans-1,2-Dichloroethene 1 mg/kg <1.0 1,1-Dichloroethane 1 mg/kg <1.0 cis-1,2-Dichloroethene 1 mg/kg <1.0 Bromochloromethane <1.0 1 mg/kg Chloroform mg/kg <1.0 1 1.2-Dichloroethane 1 <10 mg/kg 1,1,1-Trichloroethane 1 mg/kg <1.0 Carbon Tetrachloride mg/kg <1.0 1 Dibromomethane <1.0 1 mg/kg 1,2-Dichloropropane 1 mg/kg <1.0 Trichloroethene mg/kg <1.0 1 Bromodichloromethane mg/kg <1.0 1 cis-1,3-Dichloropropene 1 mg/kg <1.0 trans-1,3-Dichloropropene mg/kg <1.0 1 1,1,2-Trichloroethane mg/kg <1.0 1 1,3-Dichloropropane mg/kg <1.0 1 Dibromochloromethane 1 mg/kg <1.0

First Reported: 25 May 2009

Date Printed: 29 May 2009

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LabMark

ENVIRONMENTAL LABORATORIES Certificate of Analysis

## 6) LabMark

ENVIRONMENTAL LABORATORIES

Customer Sample ID			QC200_13/5 /09
Sample Matrix			SOIL
Labmark Sample No.			1551286
Date Sampled			13/05/2009
VOC Test/Reference	PQL	Unit	
Tetrachloroethene	1	mg/kg	<1.0
1,1,1,2-Tetrachloroethane	1	mg/kg	<1.0
Chlorobenzene	1	mg/kg	<1.0
Bromoform	1	mg/kg	<1.0
1,1,2,2-Tetrachloroethane	1	mg/kg	<1.0
2-Chlorotoluene	1	mg/kg	<1.0
4-Chlorotoluene	1	mg/kg	<1.0
Pentachloroethane	1	mg/kg	<1.0
1,3-Dichlorobenzene	1	mg/kg	<1.0
1,4-Dichlorobenzene	1	mg/kg	<1.0
1,2-Dichlorobenzene	1	mg/kg	<1.0
Hexachloroethane	1	mg/kg	<1.0
,2,4-Trichlorobenzene	1	mg/kg	<1.0
- Hexachlorobutadiene	1	mg/kg	<1.0
1,2,3-Trichlorobenzene	1	mg/kg	<1.0
SVOC			
Test/Reference	PQL	Unit	
2100 PAH in Soil by GC Acenaphthene	0.5	mg/kg	<0.5
Acenaphthylene	0.5	mg/kg	<0.5
Anthracene	0.5	mg/kg	<0.5
Benz(a)anthracene	0.5	mg/kg	<0.5
Benzo(a)pyrene	0.5	mg/kg	<0.5
Benzo(b)&(k)fluoranthene	1	mg/kg	<1
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5
Chrysene	0.5	mg/kg	<0.5
Dibenz(ah)anthracene	0.5	mg/kg	<0.5
Fluoranthene	0.5	mg/kg	<0.5
Fluorene	0.5	mg/kg	<0.5
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5
Naphthalene	0.5	mg/kg	<0.5
Phenanthrene	0.5	mg/kg	<0.5
Pyrene	0.5	mg/kg	<0.5
Sum of PAHs	0.5	mg/kg	<0.5
2-Fluorobiphenyl - Surrogate	-	%	89
p-Terphenyl-D14 - Surrogate	-	%	93
Anthracene-d10 - Surrogate	-	%	110
2800 Individual Phenols in Soil I 2,3,4,6-Tetrachlorophenol	ay GC 1	mg/kg	<1
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5
2,3-Dichlorophenol	1	mg/kg	<1
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5
2,6-Dichlorophenol	0.5	mg/kg	<0.5
2-Chlorophenol	0.5	mg/kg	<0.5
2-Methylphenol	0.5	mg/kg	<0.5

First Reported: 25 May 2009 Date Printed: 29 May 2009 Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

## 6) LabMark

ENVIRONMENTAL LABORATORIES

Customer Sample ID			QC200_13/5
			/09 SOIL
Sample Matrix Labmark Sample No.			SOIL 1551286
Date Sampled			13/05/2009
SVOC			
Test/Reference	PQL	Unit	
3,4-Dichlorophenol	0.5	mg/kg	<0.5
3,5-Dichlorophenol	0.5	mg/kg	<0.5
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5
Pentachlorophenol	1	mg/kg	<1
Phenol	0.5	mg/kg	<0.5
2,4,6-Tribromophenol-Surrogate	1	%	74
2000 TPH (C10 - C36) in Soil by GC			
C10-C14 Fraction	10	mg/kg	<10
C15-C28 Fraction	20	mg/kg	20
C29-C36 Fraction	20	mg/kg	<20
Metals			
Test/Reference	PQL	Unit	
3400 Mercury in Soil by FIMS			
Mercury	0.01	mg/kg	0.01
3100 Total Metals in Soil By ICP/MS			
Arsenic	2	mg/kg	<2
Barium	2	mg/kg	10
Cadmium	2	mg/kg	<2
Chromium	2	mg/kg	<2
Copper	2	mg/kg	<2
Lead	2	mg/kg	8.3
Nickel	2	mg/kg	<2
Vanadium	2	mg/kg	<2
Zinc	2	mg/kg	25
Miscellaneous			
Test/Reference	PQL	Unit	
5000 Moisture Content			
% Moisture	1	%	21

#### Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
1100 BTEX &(C6-C9) in Soil by P&T	Melbourne 1645	20/05/2009	22/05/2009
1300 VHCs in Soil by P&T	Melbourne 1645	21/05/2009	25/05/2009
2000 TPH (C10 - C36) in Soil by GC	Melbourne 1645	20/05/2009	21/05/2009
2100 PAH in Soil by GC	Melbourne 1645	20/05/2009	21/05/2009
2800 Individual Phenois in Soil by GC	Melbourne 1645	20/05/2009	21/05/2009
3100 Total Metals in Soil By ICP/MS	Melbourne 1645	20/05/2009	22/05/2009
3400 Mercury in Soil by FIMS	Melbourne 1645	20/05/2009	22/05/2009
5000 Moisture Content	Melbourne 1645	N/A	21/05/2009

#### Labmark Internal Quality Control Review

#### General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- 2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
- 3. Proficiency trial results are available on request.
- 4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spike or surrogate recoveries.
- 6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
- 7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
- 8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
- 9. Samples were analysed on an as received basis.
- 10. This report replaces any interim results previously issued.

#### **Holding Times**

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

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

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

#### **Quality Control Results**

#### Laboratory: EN\_METALS

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1553382 [ Method Blank ]				<b>I</b> .			00000
3400 Mercury in Soil by FIMS	····=						
Mercury	mg/kg	<0.01			< 0.01	Pass	
1553462 [ Method Blank ]			•		<u> </u>	-	
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	Pass	
Arsenic	mg/kg	<2			< 2	Pass	
Barium	mg/kg	<2			< 2	Pass	
Beryllium	mg/kg	<2			< 2	Pass	
Boron	mg/kg	<2			< 2	Pass	
Cadmium	mg/kg	<2			< 2	Pass	
Chromium	mg/kg	<2			< 2	Pass	
Cobalt	mg/kg	<2			< 2	Pass	
Copper	mg/kg	<2			< 2	Pass	
Lead	mg/kg	<2			< 2	Pass	
Manganese	mg/kg	<2			< 2	Pass	
Molybdenum	mg/kg	<2			< 2	Pass	
Nickel	mg/kg	<2			< 2	Pass	
Selenium	mg/kg	<2			< 2	Pass	
Tin	. mg/kg	<2			< 2	Pass	
Vanadium	mg/kg	<2			< 2	Pass	
Zinc	mg/kg	<2			< 2	Pass	
1553383 [ Laboratory Control Sample ]							
3400 Mercury in Soil by FIMS	······		Expected Value	Percent Recovery			
Mercury	mg/kg	9.0	10.0	90	80-120 %	Pass	

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## (j) LabMark

ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_METALS

Sample, Test, Result Reference	Units	Result 1	T T		Acceptance	Pass	Qualifying
		Tresont 1			Limits	Limits	Codes
1553463 [Laboratory Control Sample]			<u> </u>	<u> </u>			
3100 Metals in Soil - As Received			Expected Value	Percent Recovery		1	
Antimony	mg/kg	97	100.0	97	70-130 %	Pass	
Arsenic	mg/kg	99	100.0	99	70-130 %	Pass	
Barium	mg/kg	88	100.0	88	70-130 %	Pass	
Beryllium	mg/kg	100	100.0	102	70-130 %	Pass	
Boron	mg/kg	110	100.0	109	70-130 %	Pass	
Cadmium	mg/kg	96	100.0	96	70-130 %	Pass	
Chromium	mg/kg	95	100.0	95	70-130 %	Pass	
Cobalt	mg/kg	97	100.0	97	70-130 %	Pass	
Copper	mg/kg	93	100.0	93	70-130 %	Pass	
Lead	mg/kg	89	100.0	89	70-130 %	Pass	
Manganese	mg/kg	94	100.0	94	<u>70-130 %</u>	Pass	
Molybdenum	mg/kg	92	100.0	92	70-130 %	Pass	
Nickel	mg/kg	97	100.0	97	70-130 %	Pass	
Selenium	mg/kg	100	100.0	102	70-130 %	Pass	
Tin	mg/kg	90	100.0	90	70-130 %	Pass	
Vanadium	mg/kg	95	100.0	95	70-130 %	Pass	
Zinc	mg/kg	98	100.0	98	70-130 %	Pass	
Laboratory: EN_SVOC	•						
Sample, Test, Result Reference	Units	Result 1			Acceptance	Pass	Qualifying
1551988 [ Method Blank ]			<b></b>		Limits	Limits	Codes
		·	· · · · · · · · · · · · · · · · · · ·	<del></del>	· ·		
2000 TPH (C10 - C36) in Soil by GC						T	
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	
1551990 [ Method Blank ]			· · · · · · · · · · · · · · · · · · ·				
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5	<u> </u>		< 0.5	Pass	
Ругепе	mg/kg	<0.5	<b></b>		< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	100			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	108			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	111	<b>↓</b>	· · ·	70-130 %	Pass	<b> </b> −−
1551989 [Laboratory Control Sample]			+	<u> </u>			
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	110	125.0	84	70-130 %	Pass	<b>_</b>
C15-C28 Fraction	mg/kg	110	125.0	86	70-130 %	Pass	
C29-C36 Fraction	mg/kg	110	125.0	89	70-130 %	Pass	L

## 6 LabMark

ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1551991 [ Laboratory Control Sample ]				łł			
2100 PAH in Soil by GC	· · · · ·		Expected Value	Percent Recovery			
Acenaphthene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Acenaphthylene	mg/kg	2.2	2.0	108	70-130 %	Pass	
Anthracene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Benz(a)anthracene	mg/kg	2.0	2.0	100	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	2.2	2.0	112	70-130 %	Pass	
Велzo(b)&(k)fluoranthene	mg/kg	4.1	4.0	103	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	2.0	2.0	98	70-130 %	Pass	
Chrysene	mg/kg	2.0	2.0	101	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	1.9	2.0	96	70-130 %	Pass	
Fluoranthene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Fluorene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	2.0	2.0	101	70-130 %	Pass	
Naphthalene	mg/kg	2.0	2.0	102	70-130 %	Pass	
Phenanthrene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Pyrene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Sum of PAHs	mg/kg	33	32.0	104	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	100			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	104	1		70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	101	1		70-130 %	Pass	
aboratory: EN_VOC							•
Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1552482 [ Method Blank ]				,		•	
1100 BTEX in Soil by P&T	<u> </u>	· · · ·					
Benzene	mg/kg	<0.2			< 0.2	Pass	[
C6-C9 Fraction	mg/kg	<5.0			< 5	Pass	
Ethylbenzene	mg/kg	<1.0			<1	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Ortho-Xylene	mg/kg	<1.0	1	1	< 1	Pass	1
Toluene	mg/kg	<1.0			<1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	1
4-Bromofluorobenzene - Surrogate	%	96	-t	1	70-130 %	Pass	1

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Sample, Test, Result Reference	Units	Result 1		Acceptance Limits	Pass Limits	Qualifyir Codes
553204 [ Method Blank ]		···· ·				
300 VOCs in Spil by P&T						
1,1,1,2-Tetrachloroethane	mg/kg	<1.0		<1	Pass	
1,1,1-Trichloroethane	mg/kg	<1.0		<1	Pass	
1,1,2,2-Tetrachioroethane	mg/kg	<1.0		<1	Pass	
1,1,2-Trichloroethane	mg/kg	<1.0		< 1	Pass	
1,1-Dichloroethane	mg/kg	<1.0		<1	Pass	
1,1-Dichloroethene	mg/kg	<1.0		<1	Pass	
1,1-Dichloropropylene	mg/kg	<1.0		<1	Pass	
1,2,3-Trichlorobenzene	mg/kg	<1.0		<1	Pass	_
1,2,3-Trichloropropane	mg/kg	<1.0		<1	Pass	
1,2,4-Trichlorobenzene	mg/kg	<1.0		<1	Pass	
1,2,4-Trimethylbenzene	mg/kg	<1.0		<1	Pass	
1,2-Dibromo-3-chloropropane	mg/kg	<1.0		<1	Pass	
1,2-Dibromoethane	mg/kg	<1.0		<1	Pass	
1,2-Dichlorobenzene	mg/kg	<1.0		<1	Pass	
1,2-Dichloroethane	mg/kg	<1.0		<1	Pass	<u> </u>
1,2-Dichloropropane	mg/kg	<1.0	· · · · · · · · · · · · · · · · · · ·	<1	Pass	
1,3,5-Trimethylbenzene	mg/kg	<1.0	<b>_</b>	<1	Pass	<u> </u>
1,3-Dichlorobenzene	mg/kg	<1.0	· · · · · · · · · · · · · · · · · · ·	<1	Pass	
1,3-Dichloropropane	mg/kg	<1.0		<1	Pass	-
1,4-Dichlorobenzene	mg/kg	<1.0		<1	Pass	
2,2-Dichloropropane	mg/kg	<10.0		< 10	Pass	
2-butanone	mg/kg	<10.0		< 10	Pass	
2-Chlorotoluene	mg/kg	<1.0		<1	Pass	
4-Chlorotoluene	mg/kg	<1.0		<1	Pass	┣────
4-methyl-2-pentanone	mg/kg	<10.0		< 10	Pass	
Benzene	mg/kg	<0.2		< 0.2	Pass	
Bromobenzene	mg/kg	<1.0	*******	<1	Pass	
Bromochloromethane	mg/kg	<1.0		<1	Pass	┣───
Bromodichloromethane	mg/kg	<1.0		<1	Pass	
Bromoform	mg/kg	<1.0		<1	Pass	<u> </u>
Bromomethane	mg/kg	<1.0		<1	Pass	
Carbon Tetrachloride	mg/kg	<1.0		<1	Pass	
Chlorobenzene	mg/kg	<1.0		<1	Pass	
Chloroethane	mg/kg	<1.0		<1	Pass	
Chloroform	mg/kg	<1.0	······	<1	Pass	
Chloromethane	mg/kg	<1.0		<1	Pass	
cis-1,2-Dichloroethene	mg/kg	<1.0		<1	Pass	
cis-1,3-Dichloropropene	mg/kg	<1.0		<1	Pass	
Dibromochloromethane	mg/kg	<1.0		<1	Pass	
Dibromomethane	mg/kg	<1.0		<1	Pass	
Dichlorodifluoromethane	mg/kg	<1.0		<1	Pass	
Ethylbenzene	mg/kg	<1.0		<1	Pass	<u> </u>
Hexachiorobutadiene	mg/kg	<1.0	·····	<1	Pass	<b> </b>
Hexachloroethane	mg/kg	<1.0		<1	Pass	<u> </u>
Isopropylbenzene	mg/kg	<0.5	· · · · · · · · · · · · · · · · · · ·	< 0.5	Pass	
Meta- & Para- Xylene	mg/kg	<2.0		< 2	Pass	t
Methylene Chloride	mg/kg	<5.0		< 5	Pass	<u> </u>
Naphthalene	mg/kg	<1.0		< 1	Pass	<b> </b>
n-Butylbenzene	mg/kg	<1.0		< 1	Pass	<u> </u>
n-Propylbenzene	mg/kg	<1.0		< 1	Pass	
Ortho-Xylene	mg/kg	<1.0		<1	Pass	<u> </u>
Pentachloroethane	mg/kg	<1.0		<1	Pass	<b> </b>
p-Isopropyltoluene	mg/kg	<1.0		<1	Pass	<b> </b>
sec-Butylbenzene	mg/kg	<1.0		<1	Pass	
Styrene	mg/kg	<0.5		< 0.5	Pass	<u> </u>
tert-Butylbenzene	mg/kg	<1.0		< 1	Pass	┣━━━
Tetrachloroethene				<1	Pass	
Toluene	mg/kg	<1.0 <1.0		<1	Pass	<u> </u>
1 Oldene	mg/kg	<b>~</b> 1.0			I rass	L

First Reported: 25 May 2009 Date Printed: 29 May 2009 Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

Page 7 of 9 Final Report Number : 397553

(6) ILC: BMC: FIK ENVIRONMENTAL LABORATORIES

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## 6) LabMark

ENVIRONMENTAL LABORATORIES

Laboratory:	EN VOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qual Co
1553204 [ Method Blank ]							
1300 VOCs in Soil by P&T							
trans-1,2-Dichloroethene	mg/kg	<1.0			<1	Pass	
trans-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Trichloroethene	mg/kg	<1.0	1		< 1	Pass	
Trichlorofluoromethane	mg/kg	<1.0			< 1	Pass	
Vinyl Chloride	mg/kg	<1.0			< 1	Pass	
1552484 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	4.7	5.0	94	70-130 %	Pass	
C6-C9 Fraction	mg/kg	50	50.0	99	70-130 %	Pass	
Ethylbenzene	mg/kg	4.6	5.0	92	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	9.6	10.0	96	70-130 %	Pass	
Ortho-Xylene	mg/kg	4.8	5.0	96	70-130 %	Pass	
Toluene	mg/kg	4.7	5.0	94	70-130 %	Pass	
Total Xylenes	mg/kg	14	15.0	96	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	103			70-130 %	Pass	
1553207 [ Laboratory Control Sample ]			-	<u> </u>		-	
1300 VOCs in Soil by P&T	· · · · · · · · · · · · · · · · · · ·		Expected Value	Percent Recovery			
1,1,1-Trichloroethane	mg/kg	7.5	10.0	75	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	15	10.0	148	70-130 %	Fail	
1,1,2-Trichloroethane	mg/kg	14	10.0	141	70-130 %	Fail	
1,1-Dichloroethane	mg/kg	6.4	10.0	64	70-130 %	Fail	1
1,1-Dichloroethene	mg/kg	6.8	10.0	68	70-130 %	Fail	<u> </u>
1,2-Dichlorobenzene	mg/kg	11	10.0	106	70-130 %	Pass	
1,2-Dichloroethane	mg/kg	11	10.0	112	70-130 %	Pass	1
1,2-Dichloropropane	mg/kg	11	10.0	110	70-130 %	Pass	
1,3-Dichlorobenzene	mg/kg	10.0	10.0	100	70-130 %	Pass	
1,4-Dichlorobenzene	mg/kg	10	10.0	102	70-130 %	Pass	†
Benzene	mg/kg	10.0	10.0	100	70-130 %	Pass	
Bromodichloromethane	mg/kg	9.9	10.0	99	70-130 %	Pass	
Bromoform	mg/kg	11	10.0	113	70-130 %	Pass	
Carbon Tetrachloride	mg/kg	7.0	10.0	70	70-130 %	Pass	1
Chlorobenzene	mg/kg	10.0	10.0	100	70-130 %	Pass	
Chloroform	mg/kg	9.0	10.0	90	70-130 %	Pass	1
cis-1,3-Dichloropropene	mg/kg	11	10.0	112	70-130 %	Pass	
Dibromochloromethane	mg/kg	12	10.0	116	70-130 %	Pass	1
Ethylbenzene	mg/kg	9.7	10.0	97	70-130 %	Pass	
Methylene Chloride	mg/kg	9.0	10.0	90	70-130 %	Pass	1
Tetrachloroethene	mg/kg	5.7	10.0	57	70-130 %	Fail	
Toluene	mg/kg	9.7	10.0	97	70-130 %	Pass	1
trans-1,2-Dichloroethene	mg/kg	7.4	10.0	74	70-130 %	Pass	1
trans-1,3-Dichloropropene	mg/kg	13	10.0	127	70-130 %	Pass	1
Trichloroethene	mg/kg	9.0	10.0	90	70-130 %	Pass	1

#### Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

#### **Qualifier Codes/Comments**

#### Code Description

Q13 Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

#### Authorised By

Alex PetridisSenior Analyst - SVOCCarol AllanClient Services OfficerMark HerbstreitSenior Analyst - MetalsHelen LeiSenior Analyst - WatersKhoa PhamAnalyst - VOCOlga AlievaAnalyst - SVOC

Accreditation Number: 1645 Accreditation Number: 1645 Accreditation Number: 1645 Accreditation Number: 1645

(9) ILCE BARCE FIK ENVIRONMENTAL LABORATORIES

#### Laboratory Manager

David Elliott

Laboratory Manager - Melbourne

Chiel Utor .

Final Report

- Indicates Not Requested

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

LabMark Environmental shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretaton given in this report. In no case shall Labmark Environmental be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

The samples were not collected by Laboratory staff.

HIS COLUMN OR LAB USE ONLY	FROM:						0:		Container Size, Type, Preservative and Analysis											1 -6	)
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lob Code:	ACN 000 691 North Sydney	090		VI	~l - l		77 Woodpark Road mithfield 2164	Size		1						L				1	
<del>م</del> ن	Level 3, 116 N	filler Street						Type* Preservative								ļ		·			
	Ph: 8925 550			Fax: 8925 55	55			Code	<u> </u>												
Due Date:	Project No: 42424195 - Mobil	Merimbula		Sampler(s): N	orm rows	3 04	DBGOJDIB	· ·	<u></u>				<u>_</u> ; >`		· •				·		
	Project Manager			Signature(s):	Nom	•		Analytes	BTEX				ŭ á	Ĕ							
	Tom Onus Agreement No: A	LS call-off 104	15664598	Checked:				AJ1819185	(9)				a ž	16							
ustody seal intact?	Released for	URS by:	Dai		Received f	for Laborat	ory by: 5,8C		трн (се-сзе) /				stals - As, Ba, Cd, , Cu, Hg, NI, Pb, V,	С6-С9 / ВТЕХ							
YES NO		N	1/045		SARADA		;		Ŭ	<u></u>	nols		Se j	ő							
Sample cold? YES NO	Date: 25/05/	CE Time:	12.000	m	25-5-9		3:35 p-n		·	PAHs	Phenols	<b>VHCs</b>	Metals Cr, Cu, Zn	ТРН			· .		НОГР	,	
ab Identification		Ime- Matri		Sample Num			Comments	Total no	Tick require	d analyte	7			1 1			<u>.                                    </u>				
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	* Container Ty Preserved Via	pe and Pres	ervative Codés: F	P = Neulral Plas	tic; N = Nitric Acid Pre	eserved; C	= Sodium Hydroxide Pro	eserved; J = Solver	nt Washed Ac	id Rinsea	i Jar; S =	Salve	nt Washe	d Acid	Rinsed Gia	iss Bottle;	VC = Hyd	rochloric A	cld		
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·	Please email r	eport to: The	omas_Onus@ursc	corp.com											TANCES						
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## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## **Environmental Division**



## SAMPLE RECEIPT NOTIFICATION (SRN) Comprehensive Report

Work Order	: ES0907497		
Client	: MOBIL OIL AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: THE MOBIL RESULTS	Contact	: Charlie Pierce
Address	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060	Address	277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mobil_results@urscorp.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500	Telephone	: +61-2-8784 8555
Facsimile	:	Facsimile	: +61-2-8784 8500
Project	: 42424195	Page	: 1 of 2
Order number	: 45664596		
C-O-C number	:	Quote number	: ES20070191 (EN/030/07 V5 5 day)
Site	: MOBIL MERIMBULA		
Sampler	: NR	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dates			un 1969. Der sien meinen einen einen einen einen het der Staden im einen einen som einen einen der Staden Uberk
Date Samples Rece	eived : 25-MAY-2009	Issue Date	: 25-MAY-2009 19:34
Client Requested D	ue Date : 01-JUN-2009	Scheduled Reporting	ng Date : 28-MAY-2009
Delivery Deta	ails		

Delivery Details				
Mode of Delivery	: Carrier	Temperature	: 5.8' C - Ice present	
No. of coolers/boxes	: 1 HARD	No. of samples received	: 11	
Sercurity Seal	: Intact.	No. of samples analysed	: 11	

## General Comments

• This report contains the following information:

- Sample Container(s)/Preservation Non-Compliances
- Summary of Sample(s) and Requested Analysis
- Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Sample(s) have been received within recommended holding times.
- Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Nanthini Coilparampil
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal Aqueous (14 days), Solid (90 days) from date of completion of work order.

Environmental Division Sydney Part of the ALS Laboratory Group 277-289 Woodpark Road Smithfield NSW Australia 2164 Tel. +61-2-8784 8555 Fax. +61-2-8784 8500 www.alsglobal.com A Campbell Brothers Limited Company



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

#### • No sample container / preservation non-compliance exist.

## Summary of Sample(s) and Requested Analysis

process neccessary tasks. Packages n the determination tasks, that are include When date(s) and have been assur	nay contain addition of moisture cont ad in the package. Nor time(s) are sh med by the labo sampling time is	n of client requested al analyses, such as tent and preparation	ICPMS - Suite A	WATER - EG035F Dissolved Mercury by FIMS	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics, THM	WATER - W-04 TPH/BTEX	WATER - W-14A PAH/Phenois (SIM)	WATER - W-18 TPH(C6 - C9)/BTEX
ES0907497-001	21-MAY-2009 15:00	MW01_21/05/09	1	1	1	1	1	
ES0907497-002	21-MAY-2009 15:00	MW02_21/05/09	1	×	<ul> <li>✓</li> </ul>	1	1	
ES0907497-003	21-MAY-2009 15:00	MW03_21/05/09	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	1	~	
ES0907497-004	21-MAY-2009 15:00	MW04_21/05/09	1	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	1	✓	
ES0907497-005	21-MAY-2009 15:00	MW05_21/05/09	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	1	<ul> <li>✓</li> </ul>	
ES0907497-006	21-MAY-2009 15:00	MW06_21/05/09	<ul> <li>✓</li> </ul>	1	1	1	✓	
ES0907497-007	21-MAY-2009 15:00	MW07_21/05/09	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	1	1	~	
ES0907497-008	21-MAY-2009 15:00	QC100_21/05/09	<ul> <li>✓</li> </ul>	1	1	1	1	
ES0907497-009	21-MAY-2009 15:00	QCR1_21/05/09	<ul> <li>✓</li> </ul>	1	<ul> <li>✓</li> </ul>	1	1	
ES0907497-010	21-MAY-2009 15:00	QCF1_21/05/09	<ul> <li>✓</li> </ul>	1	<ul> <li>✓</li> </ul>	1	1	
ES0907497-011	13-MAY-2009 15:00	QCTB 21/05/09	1	1	1	1	T	1

## **Requested Deliverables**

## MR THOMUS ONUS

<ul> <li>*AU Certificate of Analysis - NATA ( COA )</li> </ul>	Email	thomus_onus@urscorp.com
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	thomus_onus@urscorp.com
- AU Chromatogram Cover Sheet ( CHROM )	Email	thomus_onus@urscorp.com
- AU Interpretive QC Report (Anon QCI Not Rep) ( QCI_NoAnon	Email	thomus_onus@urscorp.com
	<b>5</b>	
- AU QC Report (Anon QC Not Rep) - NATA ( QC_NoAnon )	Email	thomus_onus@urscorp.com
<ul> <li>Default - Chain of Custody ( COC )</li> </ul>	Email	thomus_onus@urscorp.com
<ul> <li>EDI Format - ENMRG (ENMRG)</li> </ul>	Email	thomus_onus@urscorp.com
- EDI Format - MRED ( MRED )	Email	thomus_onus@urscorp.com
PROJECT INVOICES		
- A4 - AU Tax Invoice ( INV )	Email	envlims.invoicingExxonMobil@alsen viro.com
THE MOBIL RESULTS		
<ul> <li>*AU Certificate of Analysis - NATA (COA)</li> </ul>	Email	mobil_results@urscorp.com
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	mobil_results@urscorp.com
<ul> <li>AU Chromatogram Cover Sheet (CHROM)</li> </ul>	Email	mobil_results@urscorp.com
<ul> <li>AU Interpretive QC Report (Anon QCI Not Rep) ( QCI_NoAnon )</li> </ul>	Email	mobil_results@urscorp.com
- AU QC Report (Anon QC Not Rep) - NATA ( QC_NoAnon )	Email	mobil_results@urscorp.com
<ul> <li>Default - Chain of Custody (COC)</li> </ul>	Email	mobil_results@urscorp.com
- EDI Format - ENMRG (ENMRG)	Email	mobil_results@urscorp.com
- EDI Format - MRED (MRED)	Email	mobil_results@urscorp.com
URS EDMS EQUIS5		
- EDI Format - EQUIS V5 ( EQUIS_V5 )	Email	urs_edms@urscorp.com

## ALS Laboratory Group ANALYTICAL CHEMISTRY & TESTING SERVICES

## **Environmental Division**



## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0907497		Page	: 1 of 8
Client	: MOBIL OIL AUSTRALIA PTY LTD		Laboratory	: Environmental Division Sydney
Contact	: THE MOBIL RESULTS		Contact	: Charlie Pierce
Address .	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060		Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mobil_results@urscorp.com		E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500		Telephone	: +61-2-8784 8555
Facsimile	:		Facsimile	: +61-2-8784 8500
Project	: 42424195	5	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: MOBIL MERIMBULA			
C-O-C number	:		Date Samples Received	: 25-MAY-2009
Sampler	: NR	•	Issue Date	: 28-MAY-2009
Order number	: 45664596			
			No. of samples received	: 11
Quote number	: EN/030/07 V5 5 day		No. of samples analysed	: 11

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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Page	: 2 of 8
Work Order	: ES0907497
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



## 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 date 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 NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding 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 (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: WATER					Evaluation	: × = Holding time	breach ; ✓ = Withir	holding time
Method	1. 建合物的法律生产	Sample Date	E	traction / Preparation			Analysis	
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS		and a second						
Clear Plastic Bottle - Nitric Acid; Filtered	######################################							
MW01_21/05/09, .	MW02_21/05/09,	21-MAY-2009				27-MAY-2009	17-NOV-2009	$\checkmark$
MW03_21/05/09,	MW04_21/05/09,			1				
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09					L		
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered								
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				27-MAY-2009	18-JUN-2009	$\checkmark$
MW03_21/05/09,	MW04_21/05/09,							
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09					L		
EP074D: Fumigants		and the second second second						
Amber VOC Vial - HCI or NaHSO4								
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	✓
MW03_21/05/09,	MW04_21/05/09,							
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09					L		
EP074E: Halogenated Aliphatic Compounds						( ) 순서 비가 등 (		
Amber VOC Vial - HCI or NaHSO4	•							
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	✓
MW03_21/05/09,	MW04_21/05/09,							
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09							

Page	: 3 of 8
Work Order	: ES0907497
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Matrix: WATER			ι		Evaluation	: × = Holding time	breach ; 🖌 = Withir	n holding tim	
Method		Sample Date	Ex	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP074F: Halogenated Aromatic Compounds	s	We have a second	- Silver	AND COURTS					
Amber VOC Vial - HCI or NaHSO4	na dan mananan meneraka kamangan kuman kuman kumangan kumangan kumangan kumangan kamangan kumangan kumangan kum						[		
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	1	
MW03_21/05/09,	MW04_21/05/09,								
MW05_21/05/09,	MW06_21/05/09,								
MW07_21/05/09,	QC100_21/05/09,								
QCR1_21/05/09,	QCF1_21/05/09						[		
EP074G: Trihalomethanes					2				
Amber VOC Vial - HCI or NaHSO4						Γ			
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	✓	
MW03_21/05/09,	MW04_21/05/09,								
MW05_21/05/09,	MW06_21/05/09,								
MW07_21/05/09,	QC100_21/05/09,								
QCR1_21/05/09,	QCF1_21/05/09								
EP075(SIM)A: Phenolic Compounds			Sec. Sec.						
Amber Glass Bottle - Unpreserved									
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009	26-MAY-2009	28-MAY-2009	✓	27-MAY-2009	06-JUL-2009	✓	
MW03_21/05/09									
Amber Glass Bottle - Unpreserved									
MW04_21/05/09,	MW05_21/05/09,	21-MAY-2009	27-MAY-2009	28-MAY-2009	1	27-MAY-2009	06-JUL-2009	✓	
MW06_21/05/09,	MW07_21/05/09,								
QC100_21/05/09,	QCR1_21/05/09,								
QCF1_21/05/09						L			
EP075(SIM)B: Polynuclear Aromatic Hydroc	arbons		-	e debate Sector					
Amber Glass Bottle - Unpreserved									
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009	26-MAY-2009	28-MAY-2009	✓	27-MAY-2009	06-JUL-2009	✓	
MW03_21/05/09									
Amber Glass Bottle - Unpreserved									
MW04_21/05/09,	MW05_21/05/09,	21-MAY-2009	27-MAY-2009	28-MAY-2009	✓	27-MAY-2009	06-JUL-2009	✓	
MW06_21/05/09,	MW07_21/05/09,								
QC100_21/05/09,	QCR1_21/05/09,								
QCF1_21/05/09									

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Matrix: WATER					Evaluation	: × = Holding time	breach ; 🖌 = Within	n holding tim
ethod		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons			3					
Amber Glass Bottle - Unpreserved								
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009	26-MAY-2009	28-MAY-2009	1	27-MAY-2009	06-JUL-2009	1
MW03_21/05/09								
Amber Glass Bottle - Unpreserved								
MW04_21/05/09,	MW05_21/05/09,	21-MAY-2009	27-MAY-2009	28-MAY-2009	✓	27-MAY-2009	06-JUL-2009	✓
MW06_21/05/09,	MW07_21/05/09,							
QC100_21/05/09,	QCR1_21/05/09,							
QCF1_21/05/09								
Amber VOC Vial - HCI or NaHSO4								
QCTB_21/05/09		13-MAY-2009				26-MAY-2009	27-MAY-2009	✓
Amber VOC Vial - HCI or NaHSO4								
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	<ul> <li>✓</li> </ul>
MW03_21/05/09, <	MW04_21/05/09,							ļ
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09							
EP080: BTEX								
Amber VOC Vial - HCI or NaHSO4								
QCTB_21/05/09		13-MAY-2009				26-MAY-2009	27-MAY-2009	✓
Amber VOC Vial - HCI or NaHSO4								
MW01_21/05/09,	MW02_21/05/09,	21-MAY-2009				26-MAY-2009	04-JUN-2009	✓
MW03_21/05/09,	MW04_21/05/09,							
MW05_21/05/09,	MW06_21/05/09,							
MW07_21/05/09,	QC100_21/05/09,							
QCR1_21/05/09,	QCF1_21/05/09							



## **Quality Control Parameter Frequency Compliance**

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) 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: WATER				Evaluation	n: × = Quality Col	ntrol frequency r	not within specification ; 🗸 = Quality Control frequency within specification
Quality Control Sample Type		Count			Rate (%)		Quality Control Specification
Analytical Methods	Method	oc	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	·1	16	6.3	10.0	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	10.0	1	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
Volatile Organic Compounds	EP074	2	11	18.2	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.0	5.0	1	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	1	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	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
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	19	5.3	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.0	5.0	~	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenois (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	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
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	19	5.3	5.0	√	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.0	5.0	~	ALS QCS3 requirement
PAH/Phenois (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	~	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	5.0	1	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	1	ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	ALS QCS3 requirement



## **Brief Method Summaries**

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

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 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) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis 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) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis 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) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.



## Summary of Outliers

## Outliers : Quality Control Samples

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

#### Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

#### Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074E: Halogenated Aliphatic Compounds	1132921-010		Vinyl chloride	75-01-4	136 %	69.4-129%	Recovery greater than upper control
	*****						limit
EP074E: Halogenated Aliphatic Compounds	1132921-010	· ,	lodomethane	74-88-4	65.7 %	70.2-128%	Recovery less than lower control limit

#### • For all matrices, no Method Blank value outliers occur.

- For all matrices, no Duplicate outliers occur.
- For all matrices, no Matrix Spike outliers occur.

#### Regular Sample Surrogates

#### Sub-Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP074S: VOC Surrogates	ES0907497-002	MW02_21/05/09	Toluene-D8	2037-26-5	113 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-004	MW04_21/05/09	Toluene-D8	2037-26-5	113 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-006	MW06_21/05/09	Toluene-D8	2037-26-5	111 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-008	QC100_21/05/09	Toluene-D8	2037-26-5	116 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-010	QCF1_21/05/09	Toluene-D8	2037-26-5	111 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-003	MW03_21/05/09	Toluene-D8	2037-26-5	113 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-009	QCR1_21/05/09	Toluene-D8	2037-26-5	114 %	88-110 %	Recovery greater than upper data
							quality objective
EP074S: VOC Surrogates	ES0907497-010	QCF1_21/05/09	4-Bromofluorobenzene	460-00-4	116 %	86-115 %	Recovery greater than upper data
				[			quality objective
EP074S: VOC Surrogates	ES0907497-007	MW07_21/05/09	4-Bromofluorobenzene	460-00-4	117 %	86-115 %	Recovery greater than upper data
							quality objective
EP080S: TPH(V)/BTEX Surrogates	ES0907497-008	QC100_21/05/09	Toluene-D8	2037-26-5	110 %	88-110 %	Recovery greater than upper data
							quality objective



#### Sub-Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted - Continued			and the second				
EP080S: TPH(V)/BTEX Surrogates	ES0907497-005	MW05_21/05/09	Toluene-D8	2037-26-5	116 %	88-110 %	Recovery greater than upper data
							quality objective
EP080S: TPH(V)/BTEX Surrogates	ES0907497-008	QC100_21/05/09	4-Bromofluorobenzene	460-00-4	120 %	86-115 %	Recovery greater than upper data
							quality objective
EP080S: TPH(V)/BTEX Surrogates	ES0907497-005	MW05_21/05/09	4-Bromofluorobenzene	460-00-4	117 %	86-115 %	Recovery greater than upper data
							quality objective
EP080S: TPH(V)/BTEX Surrogates	ES0907497-007	MW07_21/05/09	4-Bromofluorobenzene	460-00-4	116 %	86- <b>1</b> 15 %	Recovery greater than upper data
							quality objective

## **Outliers : Analysis Holding Time Compliance**

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

• No Analysis Holding Time Outliers exist.

## **Outliers : Frequency of Quality Control Samples**

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

#### Matrix: WATER

Quality Control Sample Type	Co	unt	Rate	e (%)	Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)		en de la companya de		<u></u>	
PAH/Phenols (GC/MS - SIM)	1	16	6.3	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

## ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

## Environmental Division



## QUALITY CONTROL REPORT

Work Order	: ES0907497	Page	: 1 of 13
Client	MOBIL OIL AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: THE MOBIL RESULTS	Contact	: Charlie Pierce
Address	: URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mobil_results@urscorp.com	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8925 5500	Telephone	: +61-2-8784 8555
Facsimile	:	Facsimile	: +61-2-8784 8500
Project	: 42424195	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: MOBIL MERIMBULA		
C-O-C number	:	Date Samples Received	: 25-MAY-2009
Sampler	: NR	Issue Date	: 28-MAY-2009
Order number	: 45664596		
		No. of samples received	: 11
Quote number	: EN/030/07 V5 5 day	No. of samples analysed	: 11

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

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with

ISO/IEC 17025.



## NATA Accredited Laboratory 825 Signatories

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

Signatories	Position	Accreditation Category
Celine Conceicao	Spectroscopist	Inorganics
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Sanjeshni Jyoti Mala	Senior Chemist Volatile	Organics
Wisam Abou-Maraseh	Spectroscopist	Inorganics



#### 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 insuffient sample for analysis.

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

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

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## Laboratory Duplicate (DUP) Report

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The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%	
G020F: Dissolved	Metals by ICP-MS (QC	Lot: 989297)			1000	1000				
S0907497-005	MW05_21/05/09	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.0	No Limit	
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.015	0.016	0.0	0% - 50%	
•		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.012	0.013	8.9	No Limit	
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit	
S0907497-007	MW07_21/05/09	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit	
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.019	0.020	0.0	0% - 20%	
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.005	<0.005	0.0	No Limit	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.026	0.026	0.0	No Limit	
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit	
G035F: Dissolved	Mercury by FIMS (QC L	.ot: 989296)								
ES0907497-005	MW05_21/05/09	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
S0907497-007	MW07_21/05/09	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
P074D: Fumigants	G (QC Lot: 988774)									
S0907497-005	MW05 21/05/09	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit	
	-	EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5 .	µg/L	<5	<5	0.0	No Limit	
S0907497-009	QCR1 21/05/09	EP074: 2.2-Dichloropropane	594-20-7	5	μg/L	<5	<5	0.0	No Limit	
		EP074: 1.2-Dichloropropane	78-87-5	5	μg/L	<5	<5	0.0	No Limit	
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit	
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	μg/L	<5	<5	0.0	No Limit	
DOZIE: Halagonat	ed Aliphatic Compound				10-				3	
S0907497-005	MW05_21/05/09	EP074: 1.1-Dichloroethene	75-35-4	5	μg/L	<5	<5	0.0	No Limit	
.00001401-000	111100_21/00/05	EP074: Int-Dichloroethene	74-88-4	5	μg/L	<5	<5	0.0	No Limit	
		EP074: trans-1.2-Dichloroethene	156-60-5	5	μg/L	<5	<5	0.0	No Limit	
	· · · ·	EP074: trans-1.2-Dichloroethane	75-34-3	5	μg/L	<5	<5	0.0	No Limit	
		EPV14: 1.1-DICRIOFOETRARE	156-59-2	5	hð\r hð\r	<5	<5	0.0	No Limit	

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ub-Matrix: WATER						Laboratory I	Duplicate (DUP) Repor	t	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
FP074F: Halogenate	ed Aliphatic Compound	Is (QC Lot: 988774) - continued							
ES0907497-005	MW05 21/05/09	EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
	_	EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	μg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	μg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	μg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	, 75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES0907497-009	QCR1_21/05/09	EP074: 1.1-Dichloroethene	75-35-4	5	μg/L	<5	<5	0.0	No Limit
	-	EP074: lodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	μg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachioroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5.	µg/L	<5	<5	0.0	No Limit

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Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195



Sub-Matrix: WATER						Laboratory	Duplicate (DUP) Repor	t .	
Laboratory sample ID	Client sample iD	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
P074E: Halogenate	ed Aliphatic Compound	is (QC Lot: 988774) - continued		S		17 P.			
ES0907497-009	QCR1_21/05/09	EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	· 5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	μg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
P074F: Halogenate	ed Aromatic Compound	ls (QC Lot: 988774)							
ES0907497-005	MW05_21/05/09	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
	_	EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
-		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
S0907497-009	QCR1_21/05/09	EP074: Chlorobenzene	. 108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
•		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	· <5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Llmit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
P074G: Trihalomet	hanes (QC Lot: 988774	4) · · · · · · · · · · · · · · · · · · ·							
ES0907497-005	MW05 21/05/09	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
	-	EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	μg/L	<5	<5	0.0	No Limit
S0907497-009	QCR1_21/05/09	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
	_	EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	μg/L	<5	<5	0.0	No Limit
P075(SIM)A · Phone	olic Compounds (QC L			Ger and	1	n an			÷
S0907497-005	MW05 21/05/09	EP075(SIM): Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
			100 00-2		-3-		1		1

			\$ <sup>2</sup>						
Sub-Matrix: WATER							Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
	olic Compounds (QC L	ot: 989901) - continued							
ES0907497-005	MW05_21/05/09	EP075(SIM): 2-Chlorophenol	.95-57-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachiorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polyn	uclear Aromatic Hydro	carbons (QC Lot: 989901)			e e e e e e e e e e e e e e e e e e e				
ES0907497-005	MW05_21/05/09	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1.0	µg/L	2.6	2.8	5.7	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1.0 ·	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1.0	μg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
P080/071. Total Po	troleum Hydrocarbons				2° -				
ES0907497-005	MW05 21/05/09	EP080: C6 - C9 Fraction		20	µg/L	<20	<20	0.0	No Limit
ES0907497-009	QCR1_21/05/09	EP080: C6 - C9 Fraction		20	µg/L	<20	<20	0.0	No Limit
	troleum Hydrocarbons						reso strend		,
ES0907497-005	MW05_21/05/09	EP071: C15 - C28 Fraction		100	µg/L	200	200	0.000000	No Limit
		EP071: C13 - C28 Flaction		50	µg/L	<50	<50	0.000000	No Limit
		EP071: C10 - C14 Fraction EP071: C29 - C36 Fraction		50	μg/L	140	160	9.876543	No Limit
		EF0/1. 029 - 030 F1201011		!	P9'-				
P080: BTEX (QC L		50000 D	71-43-2	1	μg/L	<1	<1	0.0	No Limit
ES0907497-005	MW05_21/05/09	EP080: Benzene	108-88-3	2		<5	<5	0.0	No Limit
		EP080: Toluene	100-41-4	2	μg/L μg/L	<2	<2	0.0	No Limit

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Client	: MOBIL OIL AUSTRALIA PTY LTD
Proiect	· 42424195



Sub-Matrix: WATER			Γ	******		Laboratory I	Duplicate (DUP) Report		***************************************
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC L	ot: 988773) - continued				a second				
ES0907497-005	MW05_21/05/09	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
ES0907497-009	QCR1_21/05/09	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<5	<5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
1		EP080: ortho-Xylene	95-47-6	2	µg/L	<2 .	<2	0.0	No Limit



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

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

Sub-Matrix: WATER				Method Blank (MB)	T	Laboratory Control Spike (LC	Laboratory Control Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	/ Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EG020F: Dissolved Metals by ICP-MS (QCLot:	989297)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.1	88	110	
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	99.4	85	· 109	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.5	89	107	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	91	111	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.0	87	111	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.3	90	110	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	89	109	
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	102	91	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	105	85	115	
EG035F: Dissolved Mercury by FIMS (QCLot: 9	089296)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	104	86	116	
EP074D: Fumigants (QCLot: 988774)									
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	105	72.7	124	
EP074: 1.2-Dichloropropane	78-87-5	5	μg/L	<5	10 µg/L	96.5	80.7	119	
EP074: cis-1.3-Dichloropropylene	10061-01-5	10	μg/L	<10	10 µg/L	98.0	80.4	119	
EP074: trans-1.3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	103	79.3	120	
EP074E: Halogenated Aliphatic Compounds (C	CL of: 988774)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	112	60.6	138	
EP074: Chloromethane	74-87-3	50	μg/L	<50	100 µg/L	99.3	67.4	130	
EP074: Vinyl chloride	75-01-4	50	μg/L	<50	100 µg/L	# 136	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	95.5	68.9	131	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	96.5	73.9	126	
EP074: Trichlorofluoromethane	75-69-4	50	μg/L	<50	100 µg/L	106	71.6	128	
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	101	72.5	128	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	# 65.7	70.2	128	
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	98.7	77.4	122	
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.1	79.3	121	
EP074: cis-1.2-Dichloroethene	156-59-2	5	μg/L	<5	10 µg/L	102	79.5	121	
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	108	75.8	124	
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	102	77.8	121	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	108	73.8	126	
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	103	75.5	126	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	76.7	123	
EP074: Dibromomethane	74-95-3	5	μg/L	<5	10 µg/L	102	76.1	126	

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Client	: MOBIL OIL AUSTRALIA PTY LTD
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Sub-Matrix: WATER				Method Blank (MB)	I	Laboratory Control Spike (LC	Laboratory Control Spike (LCS) Report		
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP074E: Halogenated Aliphatic Compounds (QCLot: 98	8774) - continued								
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	101	79.6	122	
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	97.7	79.9	122	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	108	75	124	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	109	78.9	121	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	116	61.4	136	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	87.2	70.6	128	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	92.6	77.8	126	
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	95.9	74.1	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	110	71.8	126	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	μg/L	<5	10 µg/L	118	66.4	136	
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	. 92.2	67.2	129	
EP074F: Halogenated Aromatic Compounds (QCLot: 98	8774)			and a second					
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	99.8	80.8	119	
EP074: Bromobenzene	108-86-1	5	μg/L	<5	10 µg/L	107	79.3	119	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	118	78.2	120	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	116	79	119	
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5 .	10 µg/L	106	78.9	120	
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	108	79.9	119	
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	101	82.3	116	
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5 ·	10 µg/L	109	67.8	129	
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	104	68.6	128	
EP074G: Trihalomethanes (QCLot: 988774)				and the second s					
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	103	78.2	122	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	114	76.9	123	
EP074: Dibromochloromethane	124-48-1	5	μg/L	<5	10 µg/L	103	78.5	124	
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	94.8	73.5	126	
EP075(SIM)A: Phenolic Compounds (QCLot: 989901)		30 m							
EP075(SIM): Phenol	108-95-2	0.2	µg/L		2 µg/L	42.0	24.5	61.9	
		1.0	µg/L	<1.0					
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L		2 µg/L	91.8	63.8	110	
		1.0	µg/L	<1.0					
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L		2 µg/L	80.5	55.9	112	
		1.0	µg/L	<1.0					
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	μg/L		4 μg/L	77.0	42.5	114	
		2.0	μg/L	<2.0					
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L		2 µg/L	85.7	62.7	117	
		1.0	µg/L	<1.0					
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.2	µg/L		2 µg/L	96.0	59.9	112	
		1.0	µg/L	<1.0				+	

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Sub-Matrix: WATER				Method Blank (MB)	Laboratory Control Spike (LCS) Report			
				Report _	Spike	Spike Recovery (%)	Recovery	Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 98990	1) - continued			200 g 200				
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.2	µg/L		2 µg/L	97.8	59.3	122
		1.0	µg/L	<1.0				
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.2	µg/L		2 µg/L	100	64.3	118
		1.0	µg/L	<1.0				
P075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L		2 µg/L	98.6	63	119
		1.0	μg/L	<1.0				
P075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.2	μg/L		2 µg/L	96.0	58.7	118
		1.0	µg/L	<1.0				
P075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.2	µg/L		2 µg/L	99.4	64	118
		1.0	μg/L	<1.0				
P075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L		4 µg/L	36.2	6.85	95.6
		2.0	μg/L	<2.0			·	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	(QCLot: 989901)						a ga Basa	
P075(SIM): Naphthalene	91-20-3	0.2	µg/L		2 µg/L	102	58.6	119
		1.0	µg/L	<1.0				
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L		2 µg/L	105	63.6	114
······································		1.0	μg/L	<1.0				
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L		2 µg/L	97.4	62.2	113
		1.0	µg/L	<1.0				
P075(SIM): Fluorene	86-73-7	0.2	µg/L		2 µg/L	103	63.9	115
		1.0	μg/L	<1.0				
P075(SIM): Phenanthrene	85-01-8	0.2	μg/L		2 µg/L	103	62.6	<u>,</u> 116
		1.0	µg/L	<1.0				
P075(SIM): Anthracene	120-12-7	0.2	µg/L		2 µg/L	92.2	64.3	116
		1.0	µg/L	<1.0				
P075(SIM): Fluoranthene	206-44-0	0.2	µg/L		2 µg/L	104	63.6	118
		1.0	µg/L	<1.0				
P075(SIM): Pyrene	129-00-0	0.2	μg/L		2 µg/L	96.0	63.1	118
		1.0	µg/L	<1.0	7			
P075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L		2 µg/L	97.5	64.1	117
		1.0	µg/L	<1.0				
P075(SIM): Chrysene	218-01-9	0.2	µg/L		2 µg/L	98.4	62.5	116
		1.0	µg/L	<1.0				
P075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L		2 µg/L	97.9	61.7	119
		1.0	µg/L	<1.0				
P075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L		2 µg/L	92.8	61.7	117
		1.0	µg/L	<1.0				
P075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L		2 µg/L	96.6	63.3	117
		0.5	μg/L	<0.5				

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Sub-Matrix: WATER				Method Blank (MB)	· ·	Laboratory Control Spike (LCS) Report			
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLo	t: 989901) - co	ntinued							
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	μg/L		2 µg/L	83.7	59.9	118	
		1.0	µg/L	<1.0					
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.2	µg/L		2 µg/L	81.5	61.2	117	
		1.0	µg/L	<1.0					
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.2	µg/L		2 µg/L	83.1	59.1	118	
		1.0	μg/L	<1.0					
EP080/071: Total Petroleum Hydrocarbons (QCLot: 98877)	3)								
EP080: C6 - C9 Fraction		20	µg/L	<20	260 µg/L	106	75	127	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 98990)	2)				e de la compañía de l				
EP071: C10 - C14 Fraction		50	μg/L	<50	400 µg/L	95.0	58.9	131	
EP071: C15 - C28 Fraction		100	µg/L	<100	400 µg/L	124	73.9	138	
EP071: C29 - C36 Fraction		50	µg/L	<50	400 µg/L	102	62.7	131	
EP080: BTEX (QCLot: 988773)									
EP080: Benzene	71-43-2	1	μg/L	<1	10 µg/L	114	76.2	124	
EP080: Toluene	108-88-3	2	μg/L	·	10 µg/L	117	74.4	124	
		5	μg/L	<5					
EP080: Ethylbenzene	100-41-4	2	μg/L	<2	10 µg/L	116	76.1	122	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	111	75.7	123	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	118	77.9	121	



#### Matrix Spike (MS) Report

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

Sub-Matrix: WATER				Matrix Spike (MS) Report				
				Spike	Spike Recovery (%)	Recovery	Limits (%)	
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
G020F: Dissolved I	Vetals by ICP-MS (QCLot: 989297)							
ES0907497-005	MW05_21/05/09	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	101	70	130	
		EG020A-F: Barium	7440-39-3	0.2 mg/L	104	70	130	
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	102	70	130	
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	104	70	130	
		EG020A-F: Copper	7440-50-8	0.2 mg/L	104	70	130	
		EG020A-F: Lead	7439-92-1	0.2 mg/L	97.5	70	130	
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	103	70	130	
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	104	70	130	
	х.	EG020A-F: Zinc	7440-66-6	0.2 mg/L	103	70	130	
G035F: Dissolved I	Mercury by FIMS (QCLot: 989296)							
ES0907497-005	MW05_21/05/09	EG035F: Mercury	7439-97-6	0.0100 mg/L	90.1	70	130	
P074E: Halogenate	d Aliphatic Compounds (QCLot: 988	774)						
ES0907497-005 MW05_21/05/09	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	110	70	130		
	_	EP074: Trichloroethene	79-01-6	25 µg/L	82.2	70	130	
P074E: Halogenate	d Aromatic Compounds (QCLot: 988	774)						
ES0907497-005	MW05 21/05/09	EP074: Chlorobenzene	108-90-7	25 µg/L	88.0	70	130	
P075(SIM)A · Phone	lic Compounds (QCLot: 989901)						,	
S0907497-005	MW05 21/05/09	EP075(SIM): Phenol	108-95-2	20 µg/L	33.7	20	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	93.6	60	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	89.8	60	130	
		EP075(SIM): 4-Chloro-3-Methylphenol	59 <b>-</b> 50-7	20 µg/L	94.8	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	93.3	20	130	
P075(SIM)B: Polyn	uclear Aromatic Hydrocarbons (QCL							
S0907497-005	MW05 21/05/09	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	100	70	130	
		EP075(SIM): Pyrene	129-00-0	20 µg/L	104	70	130	
P080/071: Total Pet	roleum Hydrocarbons (QCLot: 98877					<b>.</b>		
S0907497-005	MW05 21/05/09	EP080: C6 - C9 Fraction		250 µg/L	124	70	130	
	roleum Hydrocarbons (QCLot: 98990					kanana ang k Kanang kanang kanang Kanang kanang		
S0907497-005	MW05 21/05/09	EP071: C10 - C14 Fraction		400 µg/L	129	70	130	
		EP071: C15 - C28 Fraction		400 µg/L	105	70	130	
		EP071: C29 - C36 Fraction		400 µg/L	110	70	130	
P080: BTEX (QCLc	4. 082772\							
S0907497-005		ED000 D	71-43-2	25 µg/L	88.4	70	130	
:30907497-005	MW05_21/05/09	EP080: Benzene	11-43-2	zo pyrz	00.4			

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Sub-Matrix: WATER			Matrix Spike (MS) Report					
			Spike	Spike Recovery (%)	Recovery Limits (%)			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
EP080: BTEX (QCLo	t: 988773) - continued							
ES0907497-005 MW05_21/05/09	1W05_21/05/09	EP080: Toluene	108-88-3	25 µg/L	99.4	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	89.8	70 <sup>.</sup>	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	97.0	70	. 130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	91.0	70	130	

## **ALS Laboratory Group**

ANALYTICAL CHEMISTRY & TESTING SERVICES

## **Environmental Division**



## CERTIFICATE OF ANALYSIS

Work Order	: ES0907497	Page	: 1 of 13
Client Contact Address	: <b>MOBIL OIL AUSTRALIA PTY LTD</b> : THE MOBIL RESULTS : URS AUSTRALIA PTY LTD Level 3, 116 Miller Street NORTH SYDNEY NSW, AUSTRALIA 2060	Laboratory Contact Address	: Environmental Division Sydney : Charlie Pierce : 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail Telephone Facsímile	: mobil_results@urscorp.com : +61 02 8925 5500 :	E-mail Telephone Facsimile	: charlie.pierce@alsenviro.com : +61-2-8784 8555 : +61-2-8784 8500
Project Order number	: 42424195 : 45664596	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
C-O-C number Sampler	: : NR	Date Samples Received Issue Date	: 25-MAY-2009 : 28-MAY-2009
Site	: MOBIL MERIMBULA		
Quote number	: EN/030/07 V5 5 day	No. of samples received No. of samples analysed	: 11 : 11

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:

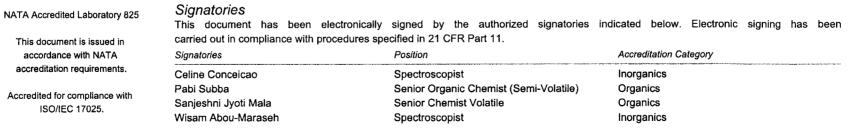
- General Comments
- Analytical Results

ΝΔΤΔ

WORLD RECOGNISED

ACCREDITATION

Surrogate Control Limits



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Environmental Division Sydney Part of the ALS Laboratory Group 277-289 Woodperk Road Smithfield NSW Australia 2164 Tel. +81-2-8784 8555 Fax. +61-2-8784 8500 www.atsglobal.com A Campbell Brothers Limited Company



#### 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 insuffient 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

- EG020A-F: LOR raised for Chromium due to matrix interference.
- EP071: The results for samples ES0907497\_1,2,3,4,5,6,7,8,9,10 had been confirmed by re-split and re-analysis. Insufficient sample for re-extraction
- EP080: Level of reporting raised for toluene due to ambient background levels in the laboratory.
- EP080: Results for sample MW07\_21/05/09 confirmed by re-analysis.

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## Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW01_21/05/09	MW02_21/05/09	MW03_21/05/09	MW04_21/05/09	MW05_21/05/09
	Client sampling date / time		21-MAY-2009 15:00					
Compound	CAS Number	LOR	Unit	ES0907497-001	ES0907497-002	ES0907497-003	ES0907497-004	ES0907497-005
EG020F: Dissolved Metals by ICP-MS				र हो देख्युके				· · · · · · · · · · · · · · · · · · ·
Arsenic	7440-38-2	0.001	mg/L	0.028	0.009	0.014	0.023	0.003
Barlum	7440-39-3	0.001	mg/L	0.054	0.015	0.022	0.028	0.015
Cadmlum	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0002	<0.0001
Chromlum	7440-47-3	0.001	mg/L	0.002	0.005	0.005	0.003	0.002
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.001	0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	0.016	0.014	0.218	0.670	0.012
EG035F: Dissolved Mercury by FIMS								
Мегсигу	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	μg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	μg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compoun	ds							
Dichlorodifluoromethane	75-71-8	50	μg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	μg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
lodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	· <5	<5	<5	<5
cls-1.2-Dichloroethene	156-59-2	5	μg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachiorlde	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5

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# ALS

### Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW01_21/05/09	MW02_21/05/09	MW03_21/05/09	MW04_21/05/09	MW05_21/05/09
	Cl	ient sampli	ng date / time	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907497-001	ES0907497-002	ES0907497-003	ES0907497-004	ES0907497-005
EP074E: Halogenated Aliphatic Col					And the second	14- <sup></sup>		
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	μg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	μg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	μg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Co	mpounds							
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	μg/L	<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	μg/L	<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	μg/L	<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	μg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes			5 960 SIN					
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	μg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds	S							
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	. <1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic	c Hydrocarbons						n an the state of the	·
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	1.4	2.6
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

# Page : 6 of 13 Work Order : E\$0907497 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



#### Analytical Results

.

Sub-Matrix: WATER		Clie	ent sample ID	MW01_21/05/09	MW02_21/05/09	MW03_21/05/09	MW04_21/05/09	MW05_21/05/09
	Cl	ient sampli	ng date / time	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907497-001	ES0907497-002	ES0907497-003	ES0907497-004	ES0907497-005
EP075(SIM)B: Polynuclear Aron		tinued	•		State State			·
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	· <1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
EP080/071: Total Petroleum Hyc	Irocarbons					and the second		
C6 - C9 Fraction		20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction		50	µg/L	<50	<50	<50	60	<50
C15 - C28 Fraction		100	µg/L	. 800	200	300	600	200
C29 - C36 Fraction		50	µg/L	200	<50	<50	140	140
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<5	<5	<5	<5	<5
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	96.0	94.4	105	94.3	110
Toluene-D8	2037-26-5	0.1	%	104	113	113	113	108
4-Bromofluorobenzene	460-00-4	0.1	%	107	113	112	113	114
EP075(SIM)S: Phenolic Compou	Ind Surrogates					- Ardinan		
Phenol-d6	13127-88-3	0.1	%	31.7	28.3	29.2	30.7	32.0
2-Chlorophenol-D4	93951-73-6	0.1	%	83.1	70.3	82.7	69.6	82.5
2.4.6-Tribromophenol	118-79-6	0.1	%	104	93.7	104	93.7	88.0
EP075(SIM)T: PAH Surrogates			· · · · · · · · · · · · · · · · · · ·					
2-Fluorobiphenyl	321-60-8	0.1	%	84.8	91.0	98.9	84.1	83.5
Anthracene-d10	1719-06-8	0.1	%	90.8	83.4	92.6	79.3	86.7
4-Terphenyl-d14	1718-51-0	0.1	%	101	101	109	92.0	103

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Work Order	: ES0907497		
Client	: MOBIL OIL AUSTRALIA PTY LTD		
Project	: 42424195		(ALS)

### Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW01_21/05/09	MW02_21/05/09	MW03_21/05/09	MW04_21/05/09	MW05_21/05/09
	Cl	ient samplir	ng date / time	21-MAY-2009 15:00				
Compound	ÇAS Number	LOR	Unit	ES0907497-001	ES0907497-002	ES0907497-003	ES0907497-004	ES0907497-005
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	96.0	94.3	105	94.2	110
Toluene-D8	2037-26-5	0.1	%	100	109	109	109	116
4-Bromofluorobenzene	460-00-4	0.1	%	106	110	110	111	117

## Page : 8 of 13 Work Order : ES0907497 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



#### Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW06_21/05/09	MW07_21/05/09	QC100_21/05/09	QCR1_21/05/09	QCF1_21/05/09
	Ci	lient sampli	ng date / time	21-MAY-2009 15:00				
Compound	CÀS Number	LOR	Unit	ES0907497-006	ES0907497-007	ES0907497-008	ES0907497-009	ES0907497-010
EG020F: Dissolved Metals by ICP-MS								· · · · · · · · · · · · · · · · · · ·
Arsenic	7440-38-2	0.001	mg/L	0.010	0.002	0.003	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	0.014	0.019	0.014	<0.001	<0.001
Cadmlum	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium .	7440-47-3	0.001	mg/L	0.006	<0.005	0.002	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	0.02	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	0.022	0.026	0.015	<0.005	<0.005
EG035F: Dissolved Mercury by FIMS						all she she she		
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EP074D: Fumigants				a da ang				
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compou	inds							
Dichlorodifiuoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyi chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	μg/L	<5	<5	<5	<5	<5
lodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5 '	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5 ,	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5

# Page : 9 of 13 Work Order : ES0907497 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



#### Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW06_21/05/09	MW07_21/05/09	QC100_21/05/09	QCR1_21/05/09	QCF1_21/05/09
	Cli	ent sampli	ng date / time	21-MAY-2009 15:00				
Compound	CAS Number	LOR	Unit	ES0907497-006	ES0907497-007	ES0907497-008	E\$0907497-009	ES0907497-010
EP074E: Halogenated Aliphatic Co	mpounds - Continued							
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
Hexachiorobutadiene	87-68-3	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Co	mpounds							
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	· <5
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	μg/L	<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	μg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	μg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	μg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compound	s							
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromati	ic Hydrocarbons							
Naphthalene	91-20-3	1.0	µg/L	1.2	4.2	1.8	3.6	2.3
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

# Page : 10 of 13 Work Order : ES0907497 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



### Analytical Results

Sub-Matrix: WATER		Clie	ent sample ID	MW06_21/05/09	MW07_21/05/09	QC100_21/05/09	QCR1_21/05/09	QCF1_21/05/09
	CI	Client sampling date / time			21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00	21-MAY-2009 15:00
Compound	CAS Number	LOR	Unit	ES0907497-006	ES0907497-007	ES0907497-008	ES0907497-009	ES0907497-010
EP075(SIM)B: Polynuclear Aromatic		linued	· · · · · · · · · · · · · · · · · · ·					
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	μg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	. μg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1,0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
EP080/071: Total Petroleum Hydroca	arbons							
C6 - C9 Fraction		20	µg/L	<20	· <20	<20	<20	<20
C10 - C14 Fraction		50	µg/L	<50	260	<50	160	100
C15 - C28 Fraction		100	µg/L	400	2400	200	100	200
C29 - C36 Fraction		50	µg/L	140	450	130	<50	<50
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<5	<5	<5	<5	<5
Ethylbenzene	100-41-4	2	μg/L	<2	10	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	95.2	104	106	99.7	97.5
Toluene-D8	2037-26-5	0.1	%	111	108	116	114	111
4-Bromofluorobenzene	460-00-4	0.1	%	114	117	113	111	116
EP075(SIM)S: Phenolic Compound S								••••••••••••••••••••••••••••••••••••••
Phenol-d6	13127-88-3	0.1	%	31.2	29.0	31.6	28.6	29.7
2-Chlorophenol-D4	93951-73-6	0.1	%	69.2	72.6	68.5	71.2	71.9
2.4.6-Tribromophenol	118-79-6	0.1	%	94.8	91.3	91.0	84.0	81.6
EP075(SIM)T: PAH Surrogates		:	· · · · · · · · · · · · · · · · · · ·			- 1027 - C		<b>A</b>
2-Fluorobiphenyl	321-60-8	0.1	%	86.2	74.7	80.0	79.0	78.6
Anthracene-d10	1719-06-8	0.1	%	80.4	72.7	78.8	75.3	76.9
4-Terphenyl-d14	1718-51-0	0.1	%	93.9	84.9	88.4	87.8	88.3

Page Work Order Client	: 11 of 13 : ES0907497 : MOBIL OIL AUSTRALIA PTY LTD	
Project	: 42424195	(ALS)

### Analytical Results

Sub-Matrix: WATER	Client sample ID		MW06_21/05/09	MW07_21/05/09	QC100_21/05/09	QCR1_21/05/09	QCF1_21/05/09	
	Ci	ient samplir	ng date / tíme	21-MAY-2009 15:00				
Compound	CAS Number	LOR	Unit	ES0907497-006	ES0907497-007	ES0907497-008	ES0907497-009	ES0907497-010
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	<sup>.</sup> 95.0	103	106	99.6	97.4
Toluene-D8	2037-26-5	0.1	%	107	105	110	100	103
4-Bromofluorobenzene	460-00-4	0.1	%	111	116	120	111	112

# Page : 12 of 13 Work Order : ES0907497 Client : MOBIL OIL AUSTRALIA PTY LTD Project : 42424195



### Analytical Results

Sub-Matrix: WATER		Cli	ent sample ID	QCTB_21/05/09		 	
	Cl	ient sampli	ing date / time	13-MAY-2009 15:00		 	
Compound	CAS Number	LOR	Unit	ES0907497-011		 	
EP080/071: Total Petroleum Hydroca	arbons				and the second second second second		
C6 - C9 Fraction		20	µg/L_	<20		 	
EP080: BTEX							
Benzene	71-43-2	1	µg/L	<1		 	
Toluene	108-88-3	2	µg/L	<5		 	
Ethylbenzene	100-41-4	2	µg/L	. <2		 	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2		 	
ortho-Xylene	95-47-6	2	µg/L	<2		 	
EP080S: TPH(V)/BTEX Surrogates							
1.2-Dichloroethane-D4	17060-07-0	0.1	%	102		 	
Toluene-D8	2037-26-5	0.1	%	108		 ·	
4-Bromofluorobenzene	460-00-4	0.1	%	102		 	

Page	: 13 of 13
Work Order	: ES0907497
Client	: MOBIL OIL AUSTRALIA PTY LTD
Project	: 42424195

### Surrogate Control Limits

Sub-Matrix: WATER	[	Recovery	Limits (%)
Compound	CAS Number	Low	High
EP074S: VOC Surrogates		<b>201</b> (1999)	
1.2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115
EP075(SIM)S: Phenolic Compound S	Surrogates		
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	.134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates		and a star	
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141
EP080S: TPH(V)/BTEX Surrogates		<b>Pain</b> Anna A	
1.2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	88	110
4-Bromofluorobenzene	460-00-4	86	115

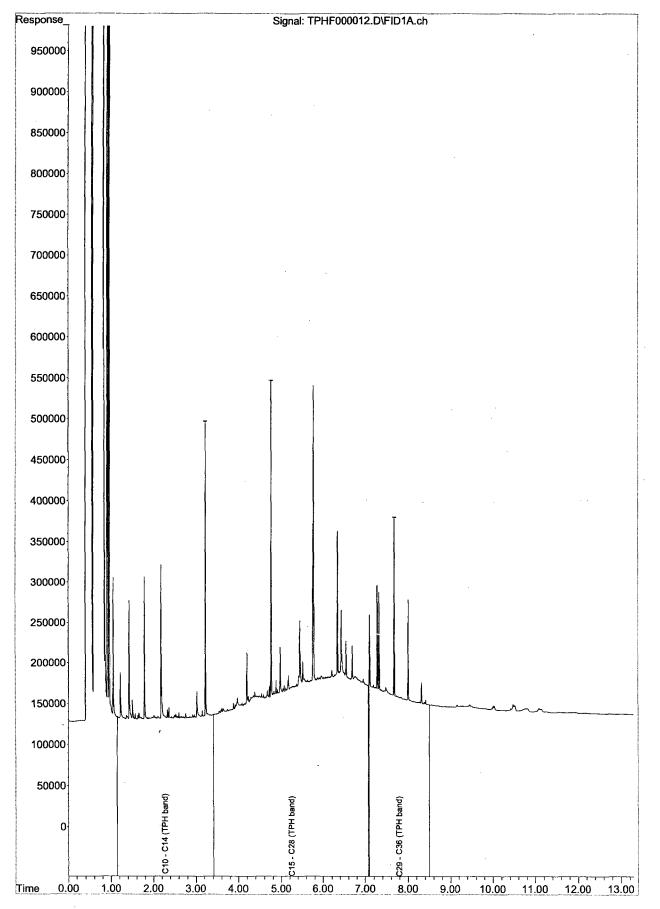
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 Data File
 : TPHF000012.D

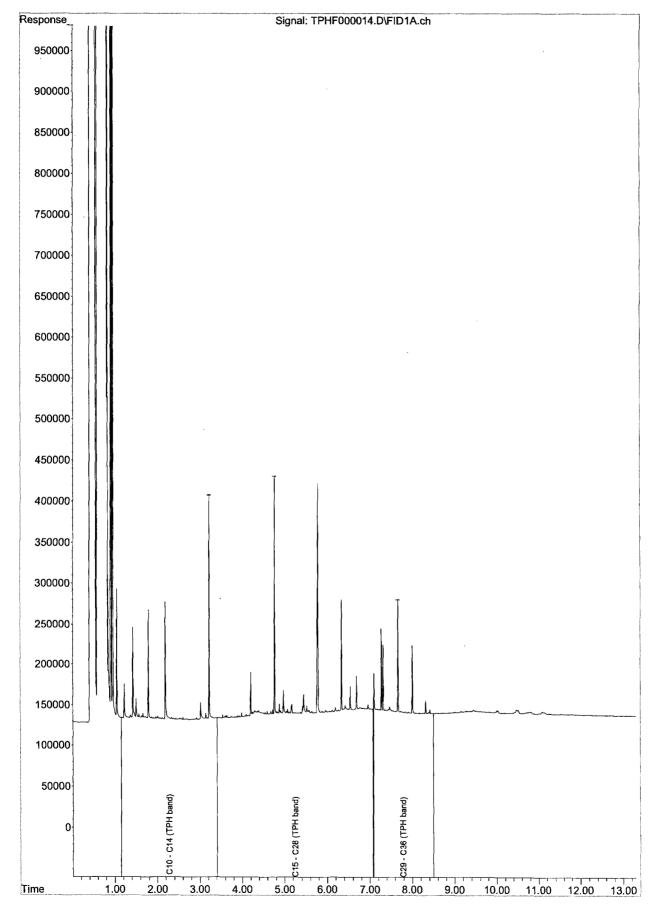
 Laboratory Number:
 ES0907497-001

 Sample ID
 : MW01\_21/05/09

 Date Acquired
 : 27-May-2009, 17:35:04



Data File : TPHF000014.D Laboratory Number: ES0907497-002 Sample ID : MW02\_21/05/09 Date Acquired : 27-May-2009, 18:12:56

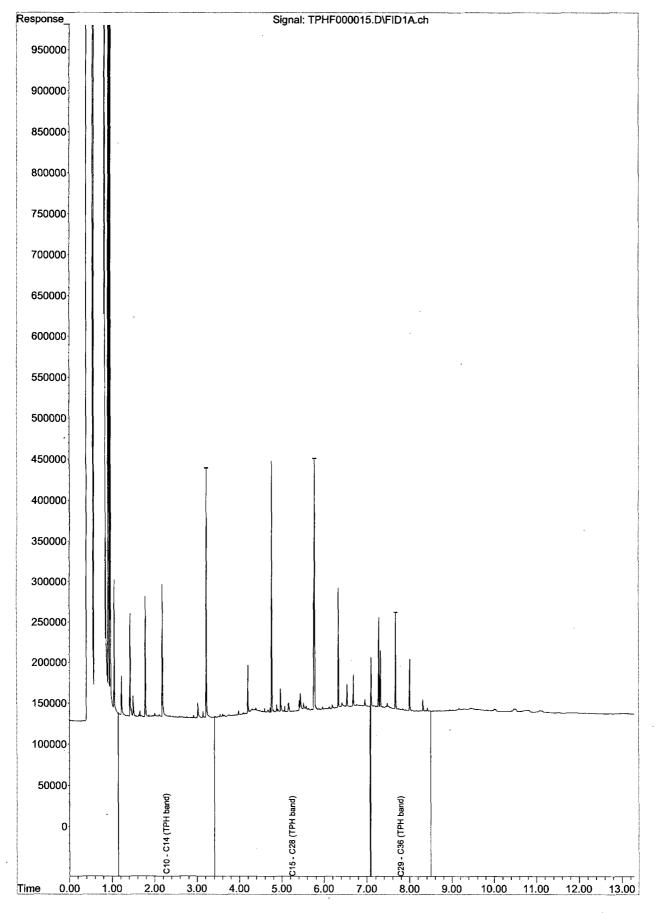


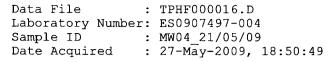
 Data File
 : TPHF000015.D

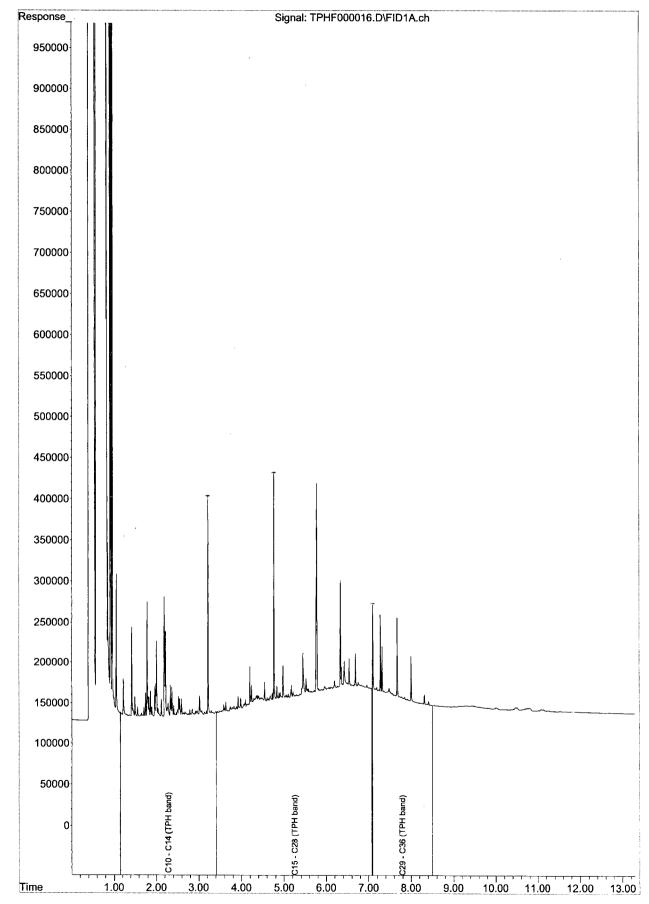
 Laboratory Number:
 ES0907497-003

 Sample ID
 : MW03\_21/05/09

 Date Acquired
 : 27-May-2009, 18:31:53

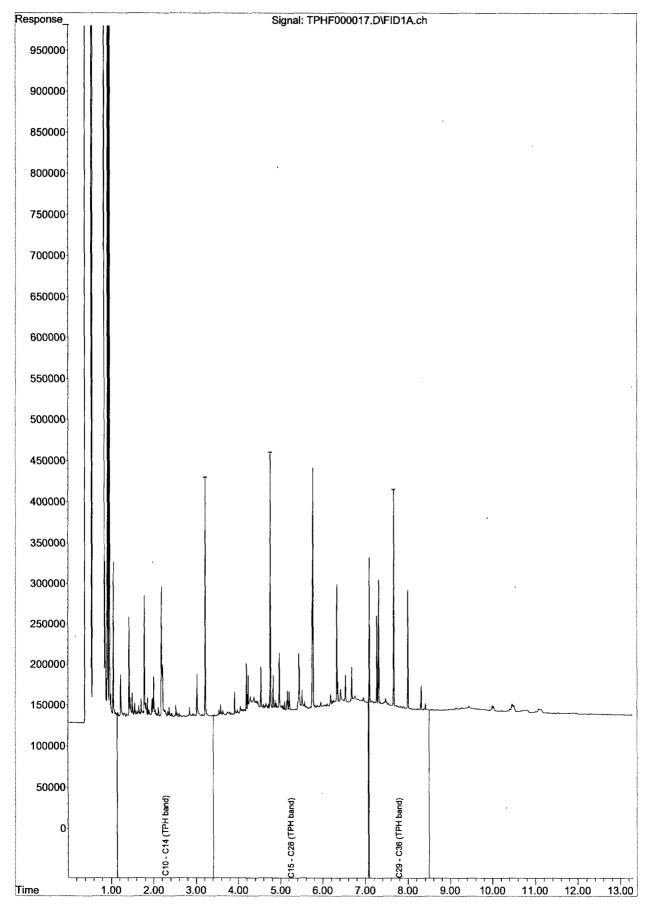




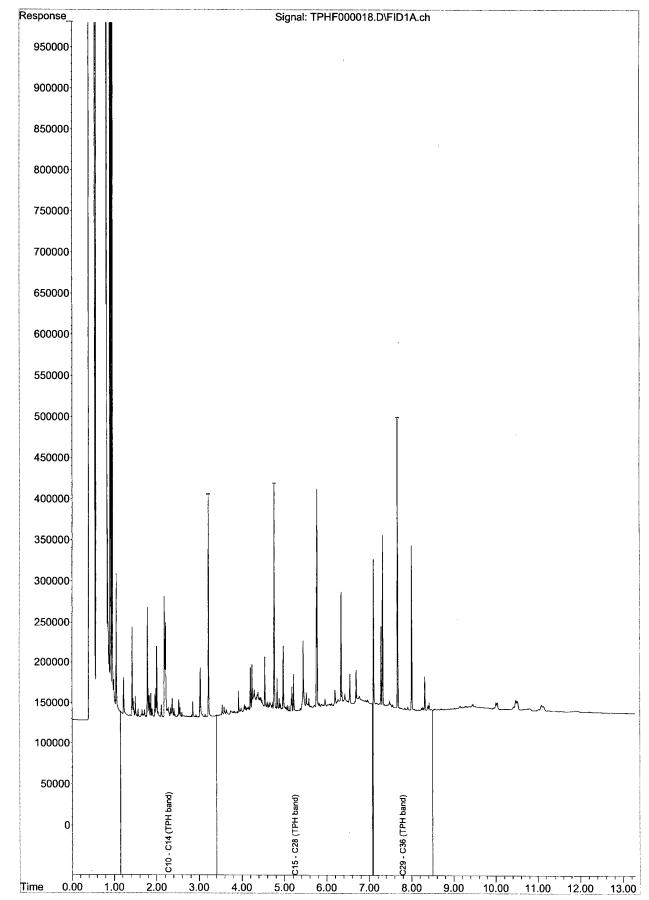


Data File : TPHF000017.D Laboratory Number: ES0907497-005 Sample ID : MW05\_21/05/09 Date Acquired : 27-May-2009, 19:09:57

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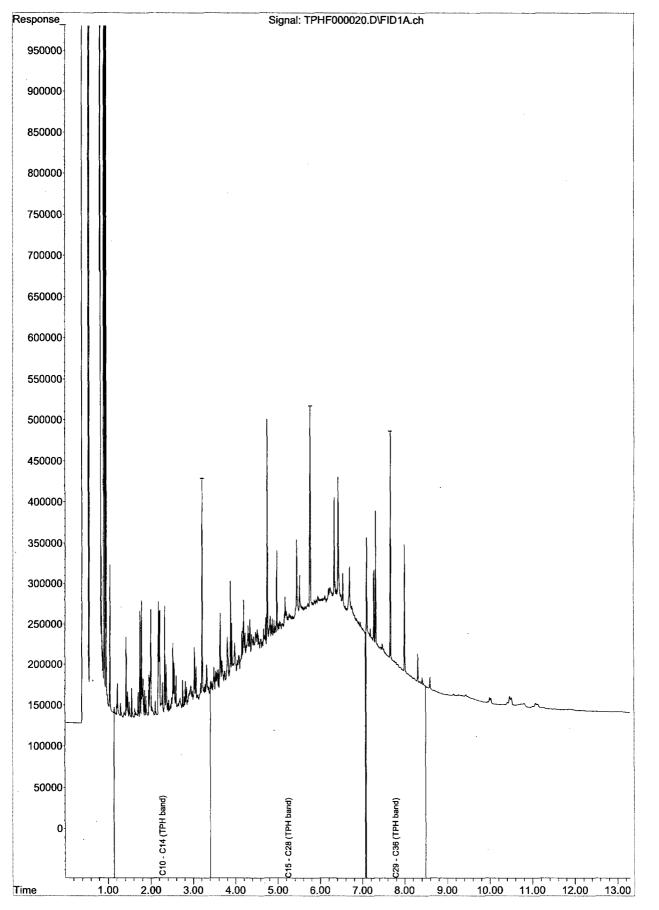


Data File : TPHF000018.D Laboratory Number: ES0907497-006 Sample ID : MW06\_21/05/09 Date Acquired : 27-May-2009, 19:28:51

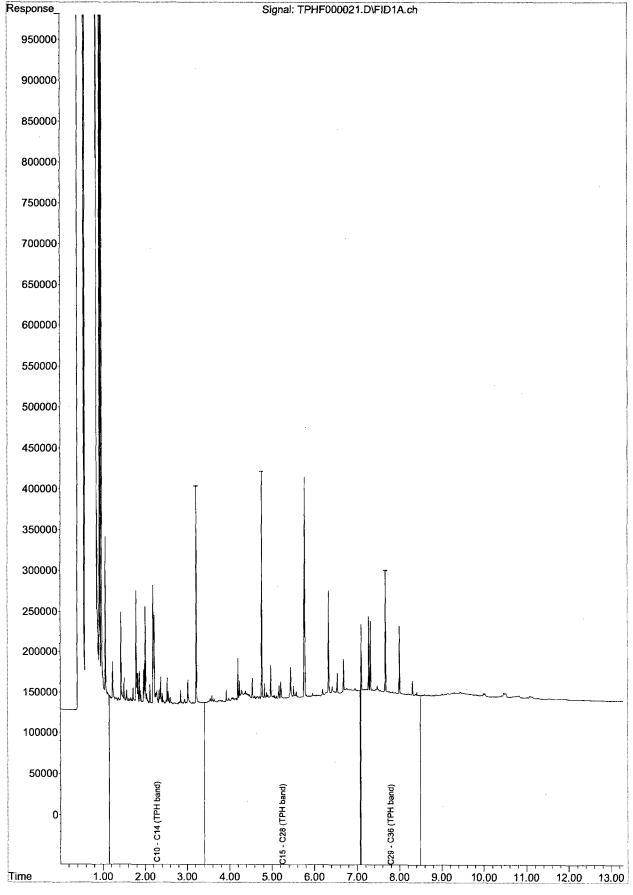


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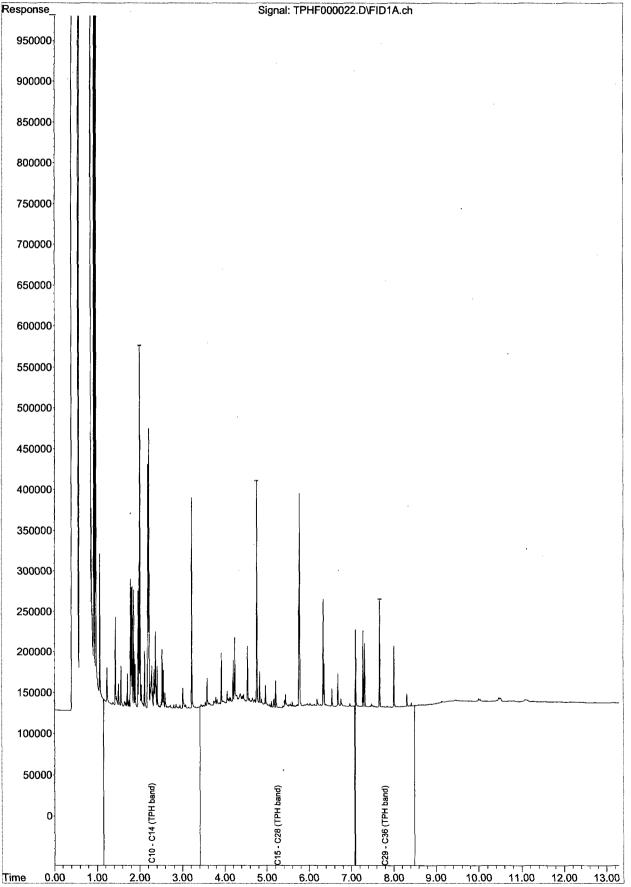
: TPHF000020.D Data File Laboratory Number: ES0907497-007 Sample ID : MW07 21/05/09 : 27-May-2009, 20:06:44 Date Acquired



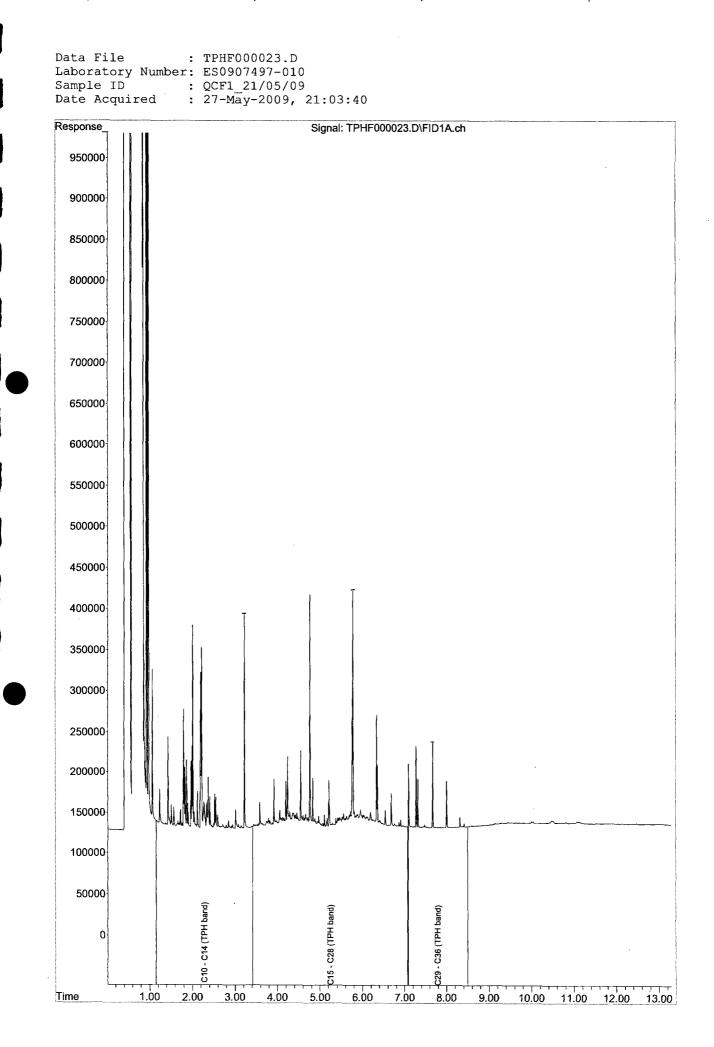
: TPHF000021.D Data File Laboratory Number: ES0907497-008 : QC100\_21/05/09 : 27-May-2009, 20:25:51 Sample ID Date Acquired



Data File :	TPHF000022.D
Laboratory Number:	ES0907497-009
Sample ID :	QCR1 21/05/09
Date Acquired :	27-May-2009, 20:44:46



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IRS PROJECT NO;	42424195	MOBIL WRF NO:		RF NO				RELING	QUISHEI	DBY:	12	200		DEOF	TO DV.	_		RELING	UISHED	BY:	RECEIV	ED BY:	
IRS PM:	Thomas Onus	MOBIL SITE :		Merimb		1063			11-	1.0		IE	11.	LIZ	e C	APIN	V*K				1		
IRS SAMPLERS :	Norm Ronis	MOBIL GRA PM:		David V	Venig			DATE:		109	TIME:			DATE	265	TIME:	1115	DATE:	TIM		DATE:	TIME:	
OMMENTS:	Norm Ronis 0408 603 018			·			(1)	Caution		ubstanc	y contair es	hazard	ous	** De F	CBs, C	yanide,	Fluoride	s & addit	ional me	tals (Sn	alytes + ( n, Be, Co	, Mo, S	Se)
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				Solid		[			Liquid	T	T			-	A	В	c (uZ	D. Wo	E	F	G	-	
LAB ID	SAMPLE ID	DATE dd/mm/yy (enter in tex format in computer)	MATRIX (Solid / Liquid)	Soll Jar (G) Unpr.	tomi vial (G) HCL	1L (G) Unpreserved	250ml (P) HNO3	:Somi (P) Unpr.	Somi (P) HCL	.0ml Vial (G) Unpres - no headspace	50ml (P) H <sub>2</sub> SO4	0mi Vial (G) H <sub>2</sub> SO4	Other:	Total Containers	rph, btex, pb	PAH, Speciated Phenots	/CH and Metals (As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Vn,	Metals (As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Vn, Zn, Sb, Co, Mo Se, Sn)	rOC, diss. methane, nitrate, sulphate, ferrous/ferric iron	OC & OP Pesticides	.andfill and State EPA Specific Waste Soll Classification see**)	OTHER -see comment	
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## Sample Receipt Advice



**ENVIRONMENTAL LABORATORIES** 

Customer Service - 1300 552 389

Client Name:	URS Australia Pty Ltd (Mobil)-Sydney	Date Received:	26 May 2009
Attention:	MR Norm Ronis	Due Date:	2 June 2009
Client Reference number:	42424195 Mobil Merimbula NO 1063	Turnaround:	Standard
	Mobil Merimbula NO 1063		

Laboratory Reference Number: 09ENME0016965 Your Laboratory Kim Jolly Contact: +61 3 9538 2277

you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

#### Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
enic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No
Custody Seals Intact (if used)	N/A

#### **Analysis Requested**

Analysis Requested	Method Code	Number Of Samples
BTEX & (C6-C9) in Water by P&T	1100	1
Dissolved Mercury in Water by FIMS	3400	1
Dissolved Metals in Water By ICP/MS	3100	1
PAH in Water by GC	2100	1
Individual Phenols in Water by GC	2800	1
TPH (C10 - C36) in Water by GC	2000	1
VHCs in Water by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a \$150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
- NOTE: Unless advised otherwise Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

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Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278



This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025 Accreditation Number: 1645

## 6) LabMark

### ENVIRONMENTAL LABORATORIES

### Certificate of Analysis

URS Australia Pty Ltd (Mobil)-Sydney Level 3,116 Miller Street NORTH SYDNEY NSW 2060 Australia

#### Attention: Norm Ronis

Project	09ENME0016965
Client Reference	42424195
	Mobil Merimbula NO 1063
Received Date	26/05/2009 11:15:00 AM

Customer Sample ID			QC200_21/0 5/09
Sample Matrix			WATER
Labmark Sample No.			1560224
Date Sampled			21/05/2009
<b>VOC</b> Test/Reference	PQL	Unit	
1300 VHCs in Water by P&T			
Pentafluorobenzene-Surrogate	1	%	89
Toluene-D8 - Surrogate	1	%	98
4-Bromofluorobenzene - Surrogate	1	%	106
Vinyl chloride	5	µg/L	<5.0
Chloroethane	5	µg/L	<5.0
Trichlorofluoromethane	5	µg/L	<5.0
1,1-Dichloroethene	5	µg/L	<5.0
Methylene Chloride	10	µg/L	<10.0
trans-1,2-Dichloroethene	5	µg/L	<5.0
1,1-Dichloroethane	30	μg/L	<30.0
cis-1,2-Dichloroethene	5	µg/L	<5.0
Bromochloromethane	5	µg/L	<5.0
Chloroform	10	µg/L	<10.0
1,2-Dichloroethane	5	µg/L	<5.0
1,1,1-Trichloroethane	5	µg/L	<5.0
Carbon Tetrachloride	5	µg/L	<5.0
Dibromomethane	5	µg/L	<5.0
1,2-Dichloropropane	5	µg/L	<5.0
Trichloroethene	5	µg/L	<5.0
Bromodichloromethane	5	µg/L	<5.0
cis-1,3-Dichloropropene	5	µg/L	<5.0
trans-1,3-Dichloropropene	5	μg/L.	<5.0
1,1,2-Trichloroethane	5	µg/L	<5.0
1,3-Dichloropropane	5	µg/L	<5.0
Dibromochloromethane	5	µg/L	<5.0
Tetrachloroethene	5	µg/L	<5.0
1,1,1,2-Tetrachloroethane	5	µg/L	<5.0
Chlorobenzene	5	µg/L	<5.0
Bromoform	5	µg/L	<5.0
1,1,2,2-Tetrachloroethane	5	µg/L	<5.0
2-Chlorotoluene	5	µg/L	<5.0
4-Chlorotoluene	5	µg/L	<5.0
Pentachloroethane	5	µg/L	<5.0
1,3-Dichlorobenzene	5	µg/L	<5.0

First Reported: 1 June 2009 Date Printed: 1 June 2009

## (6) LabMark

ENVIRONMENTAL LABORATORIES

Customer Sample ID			QC200_21/0 5/09	
Sample Matrix			WATER	
Labmark Sample No.			1560224	
Date Sampled			21/05/2009	
VOC				·
Test/Reference	PQL	Unit		
1,4-Dichlorobenzene	5	µg/L	<5.0	
1,2-Dichlorobenzene	5	µg/L	<5.0	
Hexachloroethane	5	µg/L	<5.0	
1,2,4-Trichlorobenzene	5	µg/L	<5.0	1
Hexachlorobutadiene	5	µg/L	<5.0	
1,2,3-Trichlorobenzene	5	µg/L	<5.0	
1100 BTEX & (C6-C9) in Water b 4-Bromofluorobenzene - Surrogate	y P&T -	%	90	1
Benzene	0.5	µg/L	<0.5	1
Toluene	1	µg/L	<1.0	
Ethylbenzene	1	µg/L	<1.0	(
Meta- & Para- Xylene	2	µg/L	<2.0	
Ortho-Xylene	1	µg/L	<1.0	•
Total Xylenes	3	µg/L	<3.0	1
C6-C9 Fraction	20	µg/L	<20.0	
SVOC				
Test/Reference	PQL	Unit		
2100 PAH in Water by GC Comments			Q10	
Acenaphthene	1	µg/L	<1	
Acenaphthylene	· 1	µg/L	<1	
Anthracene	1	µg/L	<1	
Benz(a)anthracene	1	µg/L	<1	•
Benzo(a)pyrene	1	µg/L	<1	
Benzo(b)&(k)fluoranthene	2	µg/L	<2	
Benzo(ghi)perylene	1	µg/L	<1	
Dibenz(ah)anthracene	1	µg/L	<1	
Chrysene	1	µg/L	<1	
Naphthalene	1	µg/L	<1	
Fluoranthene	1	µg/L	<1	
Fluorene	1	µg/L	<1	
Indeno(123-cd)pyrene	1	µg/L	<1	
Phenanthrene	1	µg/L	<1	
Pyrene	1	µg/L	<1	1
Sum of PAHs	1	µg/L	<1	
2-Fluorobiphenyl - Surrogate	-	%	73	
Anthracene-D10 - Surrogate	-	%	74	
p-Terphenyl-D14 - Surrogate	-	%	66	
2800 Individual Phenols in Wate		_		·
2,3,4,6-Tetrachlorophenol	10	hð\r	<10	
2,3,4-Trichlorophenol	10	µg/L	<10	
2,3,5,6-Tetrachlorophenol	10	µg/L	<10	
2,3,5-Trichlorophenol	10	µg/L	<10	
2,3,6-Trichlorophenol	10	µg/L	<10	
2,3-Dichlorophenol	20	µg/L	<20	
2,4&2,5-Dichlorophenol	40	µg/L	<40	
2,4,6-Trichlorophenol	10	µg/L	<10	
2,6-Dichlorophenol	10	µg/L	<10	
2-Chlorophenol	10	µg/L	<10	

First Reported: 1 June 2009 Date Printed: 1 June 2009 Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

Page 2 of 10 Final Report Number : 397821

## CO Les BAAcaries

Customer Sample ID			QC200_21/0 5/09	
Sample Matrix			WATER	
Labmark Sample No.			1560224	
Date Sampled			21/05/2009	
svoc				
Test/Reference	PQL	Unit		
2-Methylphenol	10	µg/L	<10	
3,4-Dichlorophenol	20	µg/L	<20	
3,5-Dichlorophenol	20	µg/L	<20	
3-Chlorophenol & 4-Chlorophenol	10	µg/L	<10	
3-Methylphenol & 4-Methylphenol	10	µg/L	<10	
4-Chloro-3-methylphenol	10	µg/L	<10	
Pentachlorophenol	30	µg/L	<30	
Phenol	10	µg/L	<10	
2,4,6-Tribromophenol-Surrogate	-	%	73	
2000 TPH (C10 - C36) in Water by	GC			
C10-C14 Fraction	40	µg/L	88	
C15-C28 Fraction	100	µg/L	303	
C29-C36 Fraction	100	µg/L	<100	
Metals				
Test/Reference	PQL	Unit		
3100 Dissolved Metals in Water B	y ICP/MS			
Arsenic	5	µg/L	<5	
Barium	5	µg/L	15	
Cadmium	5	µg/L	<5	
Chromium	5	µg/L	<5	
Copper	5	µg/L	<5	
Lead	5	µg/L	<5	
Nickel	5	µg/L	<5	
Vanadium	5	µg/L	<5	
Zinc	5	µg/L	12	
3400 Dissolved Mercury in Water	by FIMS		•	
Mercury	0.1	µg/L	<0.1	

#### Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
1100 BTEX & (C6-C9) in Water by P&T	Melbourne 1645	28/05/2009	29/05/2009
1300 VHCs in Water by P&T	Melbourne 1645	27/05/2009	29/05/2009
2000 TPH (C10 - C36) in Water by GC	Melbourne 1645	27/05/2009	28/05/2009
2100 PAH in Water by GC	Melbourne 1645	27/05/2009	29/05/2009
2800 Individual Phenols in Water by GC	Melbourne 1645	27/05/2009	29/05/2009
3100 Dissolved Metals in Water By ICP/MS	Melbourne 1645	26/05/2009	27/05/2009
3400 Dissolved Mercury in Water by FIMS	Melbourne 1645	26/05/2009	27/05/2009

#### Labmark Internal Quality Control Review

#### General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- 2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
- 3. Proficiency trial results are available on request.
- 4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
- 5. Results are uncorrected for matrix spike or surrogate recoveries.
- 6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
- 7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
- 8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
- 9. Samples were analysed on an as received basis.
- 10. This report replaces any interim results previously issued.

#### **Holding Times**

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitability qualified results may still be reported.

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

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

#### **Quality Control Results**

#### Laboratory: EN\_METALS

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1559700 [ Method Blank ]	-			Įł		1	
3400 Dissolved Mercury in Water by FIMS							
Mercury	µg/L	<sup></sup> <0.1			< 0.1	Pass	
1560512 [ Method Blank ]				· ·····		-	
3100 Dissolved Metals in Water By ICP/MS							
Arsenic	µg/L	<5			< 5	Pass	
Barium	µg/L	<5			< 5	Pass	
Cadmium	µg/L	<5			< 5	Pass	
Chromium	µg/L	<5			< 5	Pass	
Copper	µg/L	<5			< 5	Pass	
Lead	µg/L	<5			< 5	Pass	
Manganese	μg/L	<5			< 5	Pass	
Molybdenum	µg/L	<5			< 5	Pass	
Nickel	µg/L	<5			< 5	Pass	
Vanadium	µg/L.	<5			< 5	Pass	
Zinc	µg/L	<5			< 5	Pass	[
1559701 [ Laboratory Control Sample ]				•		•	
3400 Dissolved Mercury in Water by FIMS		·	Expected Value	Percent Recovery			
Мегсигу	μg/L	9.6	10.0	96	80-120 %	Pass	I

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## **() Lab**Mark

#### ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_METALS

Course Track Brook Deferring	11-34-	Denvilled			Acceptance	Pass	Qualifyin
Sample, Test, Result Reference	Units	Result 1			Limits	Limits	Codes
1560513 [ Laboratory Control Sample ]	•	•	•	•			
3100 Dissolved Metals in Water By ICP/MS			Expected Value	Percent Recovery			
Arsenic	μg/L	96	100.0	96	80-120 %	Pass	
Barium	µg/L	100	100.0	101	80-120 %	Pass	
Cadmium	µg/L	100	100.0	101	80-120 %	Pass	
Chromium	µg/L	100	100.0	100	80-120 %	Pass	
Copper	µg/L	93	100.0	93	80-120 %	Pass	
Lead	µg/L	110	100.0	106	80-120 %	Pass	
Manganese	µg/L	96	100.0	96	80-120 %	Pass	
Molybdenum	µg/L	99	100.0	99	80-120 %	Pass	
Nickel	µg/L	95	100.0	95	80-120 %	Pass	
Vanadium	µg/L	100	100.0	102	80-120 %	Pass	
Zinc	µg/L	94	100.0	94	80-120 %	Pass	
Laboratory: EN_SVOC				· · · · · · · · · · · · · · · · · · ·		•	
					Acceptance	Pass	Qualifyin
Sample, Test, Result Reference	Units	Result 1			Limits	Limits	Codes
1560661 [ Method Blank ]	· · · ·					• · · · ·	
2000 TPH (C10 - C36) in Water by GC							
C10-C14 Fraction	µg/L	<40			< 40	Pass	
C15-C28 Fraction	µg/L	<100			< 100	Pass	
C29-C36 Fraction	µg/L	<100			< 100	Pass	

.

## 6 LabMark

ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1560663 [ Method Blank ]						•	
2100 PAH in Water by GC							
Acenaphthene	µg/L	<1			< 1	Pass	
Acenaphthylene	µg/L	<1			< 1	Pass	
Anthracene	µg/L	<1			< 1	Pass	
Benz(a)anthracene	µg/L	<1			< 1	Pass	
Benzo(a)pyrene	µg/L	<1			<1	Pass	
Benzo(b)&(k)fluoranthene	µg/L	<2			< 2	Pass	
Benzo(ghi)perylene	µg/L	<1	<b>1</b>		< 1	Pass	
Chrysene	µg/L	<1			< 1	Pass	
Dibenz(ah)anthracene	µg/L	<1			< 1	Pass	
Fluoranthene	µg/L	<1	<u> </u>		< 1	Pass	
Fluorene	μg/L	<1			< 1	Pass	
Indeno(123-cd)pyrene	µg/L	<1	<b></b>		<1	Pass	
Naphthalene	μg/L	<1	1		< 1	Pass	
Phenanthrene	μg/L	<1			<1	Pass	
Pyrene	µg/L	<1			< 1	Pass	
Sum of PAHs	μg/L	<1			<1	Pass	
2-Fluorobiphenyi - Surrogate	%	91			70-130 %	Pass	
Anthracene-D10 - Surrogate	%	90	<b> </b>	·	70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	94			70-130 %	Pass	
2800 Individual Phenols in Water by GC						_	
2,3,4,6-Tetrachlorophenol	µg/L	<10			< 10	Pass	
2,3,4-Trichlorophenol	µg/L	<10	t		< 10	Pass	
2,3,5,6-Tetrachlorophenol	μg/L	<10			< 10	Pass	
2,3,5-Trichlorophenol	μg/L	<10			< 10	Pass	
2,3,6-Trichlorophenol		<10			< 10	Pass	
2,3-Dichlorophenol	µg/L.	<10			< 20	Pass	· · · · ·
2,4&2,5-Dichlorophenol	µg/L	<40			< 40	Pass	
2,4,6-Trichlorophenol	µg/L	<10			< 10	Pass	
2,6-Dichlorophenol	µg/L	<10			< 10	Pass	
	µg/L	<10		· · · · ·		Pass	
2-Chlorophenol	µg/L	<10		<b>↓</b>	< 10		<b> </b>
2-Methylphenol	µg/L	<10	+	<b></b>	< 10	Pass Pass	<u> </u>
3,4-Dichlorophenol	µg/L					_	
	µg/L	<20			- 20	Pass	
3-Chlorophenol & 4-Chlorophenol	µg/L_	<10			< 10	Pass	<b> </b>
3-Methylphenol & 4-Methylphenol	µg/L	<10			< 10	Pass	
4-Chloro-3-methylphenol	μg/L	<10	<del> </del>		< 10	Pass	ł
Pentachlorophenol	µg/L	<30	<b> </b>		< 30	Pass	
Phenol	μg/L	<10			< 10	Pass	L
2,4,6-Tribromophenol-Surrogate	%	75	<b></b>	ļ	50-130 %	Pass	<u> </u>
1560662 [Laboratory Control Sample]	l		1	r			ļ
2000 TPH (C10 - C36) in Water by GC	_		Expected Value	Percent Recovery			
C10-C14 Fraction	µg/L	160	200.0	80	70-130 %	Pass	Į
C15-C28 Fraction	µg/L	185	200.0	92	70-130 %	Pass	<b>.</b>
C29-C36 Fraction	µg/L	195	200.0	97	70-130 %	Pass	L

## (6) LabMark

ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance	Pass	Qualifying
		rtesur 1			Limits	Limits	Codes
1560664 [ Laboratory Control Sample ]							
2100 PAH in Water by GC			Expected Value	Percent Recovery			
Acenaphthene	µg/L	3.9	4.0	98	70-130 %	Pass	
Acenaphthylene	µg/L	3.9	4.0	97	70-130 %	Pass	
Anthracene	µg/L	3.7	4.0	93	70-130 %	Pass	
Benz(a)anthracene	µg/L	3.7	4.0	93	70-130 %	Pass	
Benzo(a)pyrene	µg/L	3.8	4.0	95	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	µg/L	7.3	8.0	92	70-130 %	Pass	
Benzo(ghi)perylene	µg/L	3.4	4.0	85	70-130 %	Pass	
Chrysene	µg/L	3.7	4.0	92	70-130 %	Pass	
Dibenz(ah)anthracene	µg/L	· 3.5	4.0	88	70-130 %	Pass	
Fluoranthene	µg/L	3.8	4.0	94	70-130 %	Pass	
Fluorene	µg/L	3.8	4.0	95	70-130 %	Pass	
Indeno(123-cd)pyrene	µg/L	3.7	4.0	93	70-130 %	Pass	
Naphthalene	µg/L	3.8	4.0	94	70-130 %	Pass	
Phenanthrene	µg/L	3.8	4.0	95	70-130 %	Pass	
Pyrene	µg/L	3.8	4.0	96	70-130 %	Pass	
Sum of PAHs	µg/L	60	64.0	93	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	89		I	70-130 %	Pass	1
Anthracene-D10 - Surrogate	%	90	1		70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	88	1	1	70-130 %	Pass	
Laboratory: EN_VOC		·• ···································	-	+			ŧ
Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

## () LabMark

ENVIRONMENTAL LABORATORIES

#### Laboratory: EN\_VOC

Sample, Test, Result Reference	Units	Result 1		Acceptance Limits	Pass Limits	Qualifyin Codes
561810 [ Method Blank ]	<b>;</b>			•	•	
300 VOCs in Water by P&T						
1,1,1,2-Tetrachloroethane	µg/L	<5.0		< 5	Pass	
1,1,1-Trichloroethane	µg/L	<5.0		< 5	Pass	
1,1,2,2-Tetrachloroethane	µg/L	<5.0		< 5	Pass	
1,1,2-Trichloroethane	µg/L	<5.0		< 5	Pass	
1,1-Dichloroethane	µg/L	<30.0		< 30	Pass	
1,1-Dichloroethene	µg/L	<5.0		< 5	Pass	
1,1-Dichloropropylene	µg/L	<5.0		< 5	Pass	
1,2,3-Trichlorobenzene	µg/L	<5.0		< 5	Pass	
1,2,3-Trichloropropane	µg/L	<5.0		< 5	Pass	
1,2,4-Trichlorobenzene	µg/L	<5.0		< 5	Pass	
1,2,4-Trimethylbenzene	µg/L	<5.0		< 5	Pass	
1,2-Dibromo-3-chloropropane	µg/L	<5.0		< 5	Pass	
1,2-Dibromoethane	μg/L	<5.0		< 5	Pass	· · · · · · · · · · · · · · · · · · ·
1,2-Dichiorobenzene	µg/L	<5.0		< 5	Pass	
1,2-Dichloroethane	µg/L	<5.0		< 5	Pass	
1,2-Dichloropropane	hð\r	<5.0		< 5	Pass	[
1,3,5-Trimethylbenzene	µg/L	<5.0		< 5	Pass	
1,3-Dichlorobenzene	µg/L	<5.0	·····	< 5	Pass	
1,3-Dichloropropane	µg/L	<5.0		< 5	Pass	
1,4-Dichlorobenzene	µg/L	<5.0		< 5	Pass	l
2,2-Dichloropropane	μg/L	<30.0		< 30	Pass	[
2-butanone	μg/L	<50.0	· · · · · · · · · · · · · · · · · · ·	< 50	Pass	1
2-Chlorotoluene	µg/L	<5.0	······	< 5	Pass	<b></b>
4-Chlorotoluene	µg/L	<5.0		< 5	Pass	
4-methyl-2-pentanone	µg/L	<50.0		< 50	Pass	
Benzene	µg/L	<0.5		< 0.5	Pass	
Bromobenzene	µg/L	<5.0		< 5	Pass	
Bromochloromethane	µg/L	<5.0		< 5	Pass	
Bromodichloromethane	μg/L	<5.0		< 5	Pass	
Bromoform	μg/L	<5.0			Pass	<u> </u>
Bromomethane	μg/L	<5.0		< 5	Pass	<u> </u>
Carbon Tetrachloride	μg/L	<5.0		< 5	Pass	
Chlorobenzene	µg/L	<5.0		< 5	Pass	
Chloroethane	µg/L	<5.0		< 5	Pass	
Chloromethane	μg/L	<5.0		< 5	Pass	
cis-1,2-Dichloroethene	µg/L	<5.0		< 5	Pass	<u> </u>
cis-1,3-Dichloropropene	µg/L	<5.0		< 5	Pass	
Dibromochloromethane	µg/L	<5.0		< 5	Pass	<u> </u>
Dibromomethane	µg/L	<5.0	<b>h</b>	< 5	Pass	<b> </b>
Dichlorodifluoromethane	µg/L	<5.0		< 5	Pass	
Ethylbenzene	μg/L	<1.0		<1	Pass	
Hexachlorobutadiene	μg/L	<5.0		< 5	Pass	<u>}</u>
Hexachloroethane	µg/L	<5.0		< 5	Pass	t
Isopropyibenzene	μg/L	<5.0	······	< 5	Pass	t
Meta- & Para- Xylene	µg/L	<2.0	·····	< 2	Pass	t
Methylene Chloride	µg/L	<10.0		< 10	Pass	
Naphthalene	μg/L	<5.0		< 5	Pass	1
n-Butylbenzene	μg/L	<5.0		< 5	Pass	1
n-Propylbenzene	μg/L	<5.0	·	< 5	Pass	1
Ortho-Xylene	µg/L	<1.0	<b></b>	<1	Pass	1
Pentachloroethane	μg/L	<5.0	······	< 5	Pass	
p-lsopropytoluene	µg/L	<5.0	· · · · · · · · · · · · · · · · · · ·	< 5	Pass	<b> </b>
sec-Butylbenzene	μg/L	<5.0	h	< 5	Pass	t
Styrene	μg/L	<5.0		< 5	Pass	
tert-Butylbenzene		<5.0		< 5	Pass	1
	µg/L µg/l	<5.0		< 5	Pass	<b> </b>
Tetrachloroethene	µg/L	{	· · · · · · · · · · · · · · · · · · ·			{
Toluene	µg/L	<1.0		<1	Pass	l
Total Xylenes	µg/L	<3.0	1 1	< 3	Pass	1

First Reported: 1 June 2009 Date Printed: 1 June 2009 Labmark 1868 Dandenong Rd Clayton VIC Australia 3168 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

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## 6 LabMark

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### ENVIRONMENTAL LABORATORIES

Laboratory: EN\_VOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifyii Codes
1561810 [ Method Blank ]				• •		4	
1300 VOCs in Water by P&T							
trans-1,3-Dichloropropene	µg/L	<5.0			< 5	Pass	
Trichloroethene	µg/L	<5.0			< 5	Pass	
Trichlorofluoromethane	µg/L	<5.0			< 5	Pass	
Vinyl chloride	µg/L_	<5.0			< 5	Pass	
1562888 [ Method Blank ]	•						
1100 MAH(BTEX & C6-C9) in Water P&T							
Benzene	µg/L	<0.5			< 0.5	Pass	
C6-C9 Fraction	µg/L	<20.0			< 20	Pass	
Ethylbenzene	µg/L	<1.0			< 1	Pass	
Meta- & Para- Xylene	µg/L	<2.0			< 2	Pass	
Ortho-Xylene	µg/L	<1.0	-		< 1	Pass	
Toluene	µg/L	<1.0			< 1	Pass	
Total Xylenes	µg/L	<3.0			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	80			70-130 %	Pass	
1561812 [ Laboratory Control Sample ]	•			•			
1300 VOCs in Water by P&T			Expected Value	Percent Recovery			Q13
1,1,1-Trichloroethane	μg/L	26	25.0	103	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	µg/L	28	25.0	112	70-130 %	Pass	
1,1,2-Trichloroethane	µg/L	28	25.0	111	70-130 %	Pass	
1,1-Dichloroethane	µg/L	<30.0	25.0	96	70-130 %	Pass	
1,1-Dichloroethene	µg/L	17	25.0	69	70-130 %	Fail	
1,2-Dichlorobenzene	μg/L	28	25.0	112	70-130 %	Pass	
1,2-Dichloroethane	μg/L	33	25.0	132	70-130 %	Fail	
1,2-Dichloropropane	µg/L	28	25.0	112	70-130 %	Pass	
1,3-Dichlorobenzene	µg/L	27	25.0	110	70-130 %	Pass	
1,4-Dichlorobenzene	μg/L	28	25.0	111	70-130 %	Pass	
Benzene	µg/L	28	25.0	110	70-130 %	Pass	
Bromodichloromethane	µg/L	25	25.0	99	70-130 %	Pass	
Bromoform	µg/L_	17	25.0	66	70-130 %	Fail	1
Carbon Tetrachloride	µg/L	22	25.0	88	70-130 %	Pass	<u> </u>
Chlorobenzene	µg/L	26	25.0	104	70-130 %	Pass	
Chloroform	μg/L	32	25.0	127	70-130 %	Pass	
cis-1,3-Dichloropropene	µg/L	24	25.0	95	70-130 %	Pass	1
Dibromochloromethane	µg/L	20	25.0	82	70-130 %	Pass	
Ethylbenzene	µg/L	27	25.0	110	70-130 %	Pass	1
Methylene Chloride	μg/L	23	25.0	91	70-130 %	Pass	
Tetrachloroethene	µg/L	32	25.0	128	70-130 %	Pass	
Toluene	µg/L	28	25.0	113	70-130 %	Pass	T
trans-1,2-Dichloroethene	µg/L	20	25.0	81	70-130 %	Pass	
trans-1,3-Dichloropropene	µg/L	23	25.0	93	70-130 %	Pass	
Trichloroethene	µg/L	26	25.0	104	70-130 %	Pass	
1562890 [ Laboratory Control Sample ]	]		•	-		•	
1100 MAH(BTEX & C6-C9) in Water P&T		· · · · ·	Expected Value	Percent Recovery			1
Benzene	µg/L	12	10.0	123	70-130 %	Pass	1
C6-C9 Fraction	µg/L	180	140.0	129	70-130 %	Pass	
Ethylbenzene	µg/L	11	10.0	105	70-130 %	Pass	
Meta- & Para- Xylene	µg/L	23	20.0	113	70-130 %	Pass	Γ
Ortho-Xylene	µg/L	11	10.0	106	70-130 %	Pass	
Toluene	µg/L	11	10.0	114	70-130 %	Pass	
Total Xylenes	µg/L	33	30.0	111	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	93		1	70-130 %	Pass	

### 6) LabMark

ENVIRONMENTAL LABORATORIES

#### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

#### **Qualifier Codes/Comments**

Code Description

Q10 The Surrogate recovery is outside of the recommended acceptance criteria. Insufficent sample remains to perform re-analysis.

Q13 Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

#### Authorised By

Alex Petridis Ruth Callander Mark Herbstreit Khoa Pham Olga Alieva Senior Analyst - SVOC Client Services Officer Senior Analyst - Metals Analyst - VOC Analyst - SVOC

Accreditation Number: 1645 Accreditation Number: 1645 Accreditation Number: 1645

#### Laboratory Manager

David Elliott

Laboratory Manager - Melbourne

Pavil Iltor .

#### Final Report

- Indicates Not Requested

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

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The samples were not collected by Laboratory staff.

#### Appendix I Laboratory Data Validation

URS

URS			DATA VALIDATION SUMMARY sses each analyte in terms of all the data validation e exceedances and outliers are reported in this form
Project Name:	Mobil Merimbula PP2	Project/Task Number:	42424195
Analytical Laboratory:	ALS	Batch/Ref. Number(s):	ES0907082
Date Sampled:	LabMark 13 - 14/5/09	Sample Type:	09ENME0016330 Soil
Sample Handling, Ruceipt	and Holding Times	Yes/No 💦 🕷	Commenta
COC completed adequate	elv?	No	Extra sample provided and not include on COC.
All requested analysis cor	nducted?	Yes	
			Sample temperature 1.3°C not comply to pretreatment / preservation
Samples received	intact and chilled?	standar	ds (AS, APHA, USEPA). QC400 were not received appropriately
		preserved bo	ttle for filtered metal analysis.
Samples analysed within a	ppropriate holding	ALS received Yes	1 2 jars labelled MW5_0.5-0.6
times per analytical metho	ods?	L	
# of Primary Samples 7 (12 on hold)	# of QAQC Samples	# of Duplicate Samples	# of Triplicate Samples
Blanks			
Method Blank (MB), Rin	sate Blank (RB), Trip Bl	ank (TB), Field Blank (FB)	
Type MB, TB, RB (QC300) and		Commen	ts
FB (QC400)	All blanks	s have acceptable results le	ss than the limits of reporting.
Laboratory Control Sam Analyte	iples (LCS)	Commen	te
	The LCS re	coveries in the ALS batch a	re within laboratory control limits.
	The LCS recovery of se	ome VOCs were greater tha the LabMark	in or less than the laboratory control limits batch.
	-		
Materix Colles (MS)	and Maria Maria and All		
Matrix Spike (MS) Analyte		Commen	ts
			ts
Analyte	Matri Spike	Commen ix spike recoveries are withi	n laboratory control limits.
Analyte	Matri	Commen ix spike recoveries are withi	ts n laboratory control limits.
Analyte Trip Spike /Control Trip Analyte n/a	Spike Katri	Commen ix spike recoveries are withi	ts n laboratory control limits. Comments
Analyte Trip Spike /Control Trip Analyte n/a Duplicates	Spike % R	Commen ix spike recoveries are withi	ts n laboratory control limits. Comments
Analyte Trip Spike /Control Trip Analyte n/a Dupficates	Spike % R	Commen ix spike recoveries are withi commen sample MW7_0.5-0.6 (24.1	ts n laboratory control limits. Comments ts %) was outside of the LOR based control
Analyte Trip Spike /Control Trip Analyte n/a Duplicates	Spike % R % R The RPD for zinc in	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate	ts n laboratory control limits. Comments Source of the LOR based control %), was outside of the LOR based control %).
Analyte Trip Spike /Control Trip Analyte n/a Duplicates	Spike % R % R The RPD for zinc in	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20	ts n laboratory control limits. Comments Solution (Solution) (Solu
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals	Spike % R % R The RPD for zinc in	Commen ix spike recoveries are within Commen sample MV7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol	ts n laboratory control limits. Comments ts %) was outside of the LOR based control %). ar PAH/Phenols and TPH due to insufficie ume.
Analyte Trip Spike /Control Trip Analyte n/a Dupficates Laboratory Duplicates Metals	Spike % R The RPD for zinc in Insufficient laboratory	Commen ix spike recoveries are within commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol	ts n laboratory control limits. Comments ts %) was outside of the LOR based control %). ar PAH/Phenols and TPH due to insufficie ume.
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates	Spike % R The RPD for zinc in Insufficient laboratory	Commen ix spike recoveries are within commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol	ts n laboratory control limits. Comments (5) %) was outside of the LOR based control %). er PAH/Phenols and TPH due to insufficient ume. (5)
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates	Spike % R The RPD for zinc in Insufficient laboratory	Commen ix spike recoveries are within commen sample MV7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs	ts n laboratory control limits. Comments ts %) was outside of the LOR based control %). ar PAH/Phenols and TPH due to insufficient ume. ts were within the control limits.
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates	Spike % R The RPD for zinc in Insufficient laboratory The intra	Commen ix spike recoveries are within commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen	ts n laboratory control limits. Comments ts %) was outside of the LOR based control %). ar PAH/Phenols and TPH due to insufficient ume. ts were within the control limits.
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates	Spike % R The RPD for zinc in Insufficient laboratory The intra	Commen ix spike recoveries are within commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen	ts n laboratory control limits. Comments (b) was outside of the LOR based control %), er PAH/Phenols and TPH due to insufficie ume. (b) were within the control limits.
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C	Spike % R The RPD for zinc in Insufficient laboratory The intra	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1) limits (0-20 duplicates reported for wate samples vol commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs	ts n laboratory control limits. Comments  Solution  Solution  Comments  Solution  Comm
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs	ts Comments Comments ts %) was outside of the LOR based control %). er PAH/PhenoIs and TPH due to insufficient ume. ts were within the control limits. ts were within the control limits.
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs	ts n laboratory control limits. Comments (5) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C Analyte VOC	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra The inte ompound Analyses The surrogate recov	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen ery of toluene-d8 in sample exceeded the upper con	ts Comments Comments (5) (5) (5) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C Analyte VOC	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra The inte ompound Analyses The surrogate recov	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen a-laboratory duplicate RPDs Commen ery of toluene-d8 in sample exceeded the upper con Overall Comments	ts n laboratory control limits. Comments Comments %) was outside of the LOR based control %). er PAH/Phenols and TPH due to insufficie ume. (s were within the control limits. (s were within the control limits. (s were within the control limits. (s %) %) %) % % % % % % % % % % % % % % %
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C Analyte VOC The analytical data validation h exceedance. The zinc laboratory duplicate F	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra The intre ompound Analyses The surrogate recov	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen commen sample sol Commen commen sample sol Commen sample sol Col	ts n laboratory control limits. Comments  ts %) was outside of the LOR based control %), ar PAH/Phenols and TPH due to insufficie urme.  ts were within the control limits.  ts MW7_1.0-1.2 (121%) and QC100 (119% trol limit (117%).
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C Analyte VOC The analytical data validation h exceedance. The zne laboratory duplicate F comfirmed the results by re-ext	Spike % R % R The RPD for zinc in Insufficient laboratory The infra The infra The infra The inte ompound Analyses The surrogate recov as highlighted a number of faik PD indicates there is some var raction and reanalyses.	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen a-laboratory duplicate RPDs Commen ery of toluene-d8 in sample exceeded the upper cor Overall Comments ures of QA/QC. These include labor tability in metals analytical, likely of	ts Comments
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Surrogate Monitoring C Analyte VOC The analytical data validation h exceedance. The zinc laboratory duplicate R comfirmed the results by re-ext The surrogate recovery exceed results.	Spike % R % R The RPD for zinc in Insufficient laboratory The intra The intra The intra The intra a highlighted a number of fails PD indicates there is some variation and reanalyses. Iances are marginally outside of the international sectors of the international sect	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1) imits (0-20 duplicates reported for wate samples vol commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen samples vol Commen commen samples vol commen samples vol commen commen samples vol commen samples vol c	ts Comments
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Surrogate Moniforing C Analyte VOC The analytical data validation h exceedance. The surce laboratory duplicate F comfirmed the results by re-ext The surrogate recovery exceed results. A sub-sample from the sVOC t The fequency of laboratory dup	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra The intra The intra The surrogate recov as highlighted a number of fails PD indicates there is some var raction and reanalyses. Iances are marginally outside on bottle was filtered and used for	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1) imits (0-20 duplicates reported for wate samples vol commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen ery of toluene-d8 in sample exceeded the upper con Overall Comments ures of QA/QC. These include labor tability in metals analytical, likely of the control limits in MW7_1.0-1.2 metals analysis for QC300 and QC	ts n laboratory control limits. Comments Comments %) was outside of the LOR based control %), ar PAH/Phenols and TPH due to insufficie ume. (s were within the control limits. (s were within t
Analyte Trip Spike /Control Trip Analyte n/a Dupficates Laboratory Dupikates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Moniforing C Analyte VOC The analyteal data validation h exceedance. The zinc laboratory dupicate R comfirmed the results by re-ext The surrogate recovery exceed results. A sub-sample from the sVOC t	Spike % R The RPD for zinc in Insufficient laboratory The intra The intra The intra The intra Compound Analyses The surrogate recov as highlighted a number of fail PD indicates there is some var raction and reanalyses. Iances are marginally outside of worthe was filtered and used for vicate samples for PAH/phenol	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1 limits (0-20 duplicates reported for wate samples vol Commen a-laboratory duplicate RPDs Commen a-laboratory duplicate RPDs Commen commen exceeded the upper con Overall Comments ures of QA/QC. These include labor tability in metals analytical, likely of if the control limits in MW7_1.0-1.2 metals analysis for QC300 and QC is and TPH C10-C36 was less that	ts Comments Comments Comments Comments S S S Comments S Comments S S S S S S S S S S S S S S S S S S S
Analyte Trip Spike /Control Trip Analyte n/a Duplicates Laboratory Duplicates Metals Intra-Laboratory Duplicates Inter-Laboratory Duplicates Surrogate Monitoring C Analyte VOC The analytical data validation h exceedance. The zinc laboratory duplicate F comfirmed the results by re-ext The surrogate recovery exceet results. A sub-sample from the sVOC t The fequency of laboratory dup rovided to the laboratory dup rovided to t	Spike % R The RPD for zinc in Insufficient laboratory The infra The infra The infra The inte Ompound Analyses The surrogate recov as highlighted a number of faik PD indicates there is some var raction and reanalyses, lances are marginally outside o vottle was filtered and used for vicate samples for PAH/phenol wicate samples for PAH/phenol wicate samples for PAH/phenol MWS_0.5-0.6 were distinguin the the other was labelled ALS	Commen ix spike recoveries are within Commen sample MW7_0.5-0.6 (24.1) imits (0-20 duplicates reported for wate samples vol commen a-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen r-laboratory duplicate RPDs Commen samples vol Commen commen samples vol commen samples vol commen s	ts n laboratory control limits. Comments Comments %) was outside of the LOR based control %), ar PAH/Phenols and TPH due to insufficie ume. (s were within the control limits. (s were withet t

Performed By: Date:

Tom Onus 11-Jun-09

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Reviewed By: Date: Amanda Lee 15-Jun-09

URS Australia Pty Ltd

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## Duplicate and Triplicate RPD Results Mobil Service Station Merimbula (NO1063)

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ociation	'		r	LAAF		PPP Deserver "	
Location Sample ID	1		MW5_0.5-0.6	MW5 QC100_13/05/09	QC200	RPD Pase/Fail Duplicate Duplicate	RPD Pass/Fa Triplicate Triplicat
ample Date ample Type			13/05/2009 PS	13/05/2009 FD	13/05/2009 FT		
	_		_	<u>г</u> го	1 FI	ł	
Analyte Total Petroleum Hydrocarbons	Units	LOR					1
C6 - C9 Fraction	mg/kg	10	<10	<10	4	·	
C10 - C14 Fraction C15 - C28 Fraction	mg/kg mg/kg		<50	<50 <100	<10 20		
C29 - C36 Fraction Total TPH C10-C36	mg/kg	100	<100 ND	<100 ND	<20	• •	
BTEX	l mg/kg	calc			20		
Benzene Toluene	mg/kg		<0.2	<0.2	<0.2	• • • •	· · ·
Ethylbenzene	mg/kg		<0.5	<0.5	ব ব	· · ·	
meta- & para-Xylene ortho-Xylene	mg/kg	0.5	<0.5	<0.5	<2	· · ·	
Total xylene	mg/kg		<0.5 ND	<0,5 ND	ন হ		
Metals Lead			9				
Moisture Content	mg/kg	_5		6	8,3	20 Pass	4.0 Pass
Moisture Content (dried @ 103°C) Polynuclear Aromatic Hydrocarb	<b>%</b>	1	12,1	12.1	21	0 Pass	26.9 Pass
Naphthalene	mg/kg	0,5	<0,5	<0.5	<0.5	· · ·	
Acenaphthylene Acenaphthene	mg/kg	0.5	<0.5 <0.5	<0.5 <0.5	<0.5	• . •	
Ruorene	mg/kg mg/kg	0.5	<0.5	<0.5	<0.5 <0.5		
henanthrene	mg/kg	0.5	<0.5	<0.5	<0.5		
Anthracene Tuoranthene	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<0.5		
Pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	· ·	· .
Benz(a)anthracene Chrysene	mg/kg mg/kg	0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		
Benzo(b)fluoranthene	mg/kg	0.5	<0.5	<0.5	<1		
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5			· · · · · · · · · · · · · · · · · · ·
Benzo(a)pyrene indeno(1.2.3.cd)pyrene	mg/kg mg/kg	0.5	<0.5	<0.5 <0,5	<0.5 <0.5		
Dibenz(a.h)amhracene	mg/kg	0.5	<0.5	<0.5	<0.5		
Benzo(g.h.i)perylene Total PAHs	mg/kg mg/kg	0.5 calc	<0.5 ND	<0,5 ND	<0.5 ND		
Phenolic Compounds							
Phenol 2-Chlorophenol	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<0.5 <0,5		
-Methylphenol	mg/kg	0.5	<0.5	<0.5	<0.5		
- & 4-Methylphenol -Nitrophenol	mg/kg	1	<1.0	<1.0	<1.0	•	
2-Nitrophenol 24-Dimethylphenol	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5			
4-Dichlorophenol	mg/kg	0.5	<0.5	<0.5		-	
.6-Dichlorophenol -Chloro-3-Methylphenol	mg/kg mg/kg	0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5		· · · · · · · · · · · · · · · · · · ·
4.6-Trichlorophenol	mg/kg		<0.5	<0.5	<0.5		
4.5-Trichlorophenol Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<1.0	·	· · ·
Aetais	mg/kg	2	<2,0	<2.0	<1.0	- 1 -	
Arsenic	mg/kg	5	<	<5	<2		
Barium Cadmium	mg/kg mg/kg	10	10	10	10	0 Pass	0 Pass
Chromium	mg/kg	2	-2	~2	<2	· · ·	
Copper	mg/kg mg/kg	5	<5	<5 6	<2 8.3	20 Pass	4.0 Pass
Mercury	marka	0.1	<0.1	<0.1	0.01	20 Fass	4.0 Pass
Vickel Venadium	mg/kg	2	2 <5	<2 <5	20		· · ·
Sinc	mg/kg mg/kg	5	26	19	25	15.6 Pass	2.0 Pass
umigants 2.2-Dichloropropane	Inche	0.5	<0.5	<0.5			
.2-Dichloropropane	mg/kg mg/kg	0.5	<0.5	<0.5	4		
a-1.3-Dichloropropylene	mg/kg	0.5	<0.5	<0.5	<1	· ·	· ·
ans-1.3-Dichloropropylene .2-Dibromoethane (EDB)	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	ব ব		
alogenated Aliphatic Compoun	ds						
Nchlorodifluoromethane	mg/kg mg/kg	5	<5	<5			
inyt chloride	mg/kg	5	<5	<5			
Bromomethane Chloroethane	mg/kg	5		<5 <5	<u>-</u> ব		
richlorofluoromethane	mg/kg mg/kg	5	<5	<5	শ		
.1-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	· · ·	· · · · ·
ans-1.2-Dichloroethene	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<1		
.1-Dichloroethane is-1.2-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1		
1.1-Trichloroethane	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<u>ব</u>		
1-Dichloropropylene	mg/kg	0.5	<0.5	<0.5	-	•	· ·
arbon Tetrachloride .2-Dichloroethane	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<u>र</u> र		
richioroethene	mg/kg	0,5	<0,5	<0.5	ব		
ibromomethane .1.2-Trichjoroethane	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	ব ব		
.3-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1		
etrachioroethene .1.1.2-Tetrachioroethane	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	ন ব		
ans-1.4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0,5			
s-1.4-Dichloro-2-butene .1.2.2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5			
2.3-Trichloropropane	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<1 -		
entachloroethane	mg/kg	0.5	<0.5	<0.5	<1		
2-Dibromo-3-chloropropane lexachlorobutaciene	mg/kg mg/kg	0.5	<0.5 <0.5	<0.5 <0.5	<u>'</u> – ব		
alogenated Aromatic Compoun	ds					······································	
hiorobenzene	mg/kg	0.5	<0.5	<0.5	<1		
Sromobenzene -Chlorotoluene	mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	-		
-Chlorotoluene	mg/kg	0.5	<0.5	<0,5	<		
.3-Dichlorobenzene .4-Dichlorobenzene	mg/kg mg/kg	0.5	<0.5 <0.5	<0.5 <0.5	ব ব		
.2-Dichlorobenzene	mg/kg	0.5	<0.5	⊲0.5	<1		
.2.4-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	• •	· ·
2.3-Trichlorobenzene rihalomethanes	mg/kg	0.5	<0.5	⊲0.5	<1		· · ·
	<b>T ·</b>	0.5	<0.5	<0.5	<1		
hloroform	mg/kg						
Chloroform Bromodichloromethane Dibromochloromethane	mg/kg mg/kg mg/kg	0.5	<0.5	<0.5 <0.5	<u>्</u> र		

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Legend mg/tg = mäigrams per kilogram LOR = limit of reporting — e not analysed ND = not detected calc = calculated

## RPD ppm = parts per million Pas PS = primary sample Pas FD = field duplicate Pas FT = field functionate Pas - = no RPD calculated as results below the LOR Pas

RPDs are acceptable If: Pass RPD <= 30% Pass-1 RPD >= 30%, Analyis rosult < 10 times LOR Pass-2 RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

URS			n assesses each analyte in terms of all the data validat nly the exceedances and outliers are reported in this fo
Project Name:	Mobil Merimbula PP2	Project/Task Number:	42424195
Analytical Laboratory:	ALS	Batch/Ref. Number(s):	ES0907497
	LabMark	.,	09ENME0016965
Date Sampled:	21/05/2009	Sample Type:	Liquid
Sample Handling, Receipt COC completed adequate		Yes/No Yes	Gomments
All requested analysis cor		Yes	
Samples received intact a		Yes	Sample temperature 5.8°C
Samples analysed within a imes per analytical metho			
#of Primary Samples 7	3	# of Duplicate Sample	A of Triplicate Samples
3lanka 👘 👘			
Method Blank (MB), Rtn Type	sate Blank (RB), Trip Bla	ank (TB), Field Blank (Fi Comm	
AB, TB (QCTB), RB QCR1) and FB (QCF1)		PH C15-C28 and naphtha	lene were detected in the RB and FB. No ere made in the MB or TB.
aboratory Control Sam Analyte	ples (LCS)	Comm	ents
		of vinyl chloride (136%)	exceeded the upper control limit (129%).
			as less than the lower control limits (70.2%). bMark batch exceeded the control limits.
Analyte		Comm	nents thin laboratory control limits.
	Soika		
Analyte	% R		Comments
n/a			
Duplicates	La Sulla State State	La Contraction Contraction	and the second strength of the second
aboratory Ouplicates		Com	
	The la	aboratory duplicate RPDs	were within the control limits.
ntra-Laboratory	to Bray to a		
Duplicates	The intra		nents of the control limits.
inter-Laboratory			
Duplicates	The inte	r-laboratory duplicate RP	ients Ds were within the control limits.
Surrogate Monitoring C	ompound Analyses	on the Million State	
Analyte		Comn	nents pmofluorobenzene exceeded the upper cont
VOC and TPH/BTEX	-	•	ely) in and number of samples.
We date to	· An address States	Overall Comments	
The analytical data validation h surrogate recovery exceedance		res of QA/QC. These include F	B and RB detections, LCS recovery exceedances and
-	s were marginally outside of the	=	o affect the analytical results. ely to affect the analytical results.
	ances are marginally outside of licate samples for PAH/phenols		ay to anout the analytical results.
The LOR for toluene was raised	d due to ambient background co	•	
The LOR for chromium was rais		17 waa aaaf	
The results for TPH C10-C36 ir The analytical results are consi	n all samples and BTEX in MWC dered suitable for reporting.	were confirmed by re-analyse	es.
Performed By:	Tom Onus	Reviewed By:	Amanda Lee
Date:	11-Jun-09	Date:	15-Jun-09

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## Duplicate and Triplicate RPD Results Mobil Service Station Merimbula (NO1063)

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Sample ID Sample Date							T	
Sample Date	ł		MW05 21/05/2009	QC100 21/05/2009	QC200 21/05/2009	RPD Duplicate	Pass/Fail Duplicate	RPD Triplicate
ample Type	1		PS	FD	FT	<b>Hereicher</b>		L
Analyte	Units	LOR	1					
Total Petroleum Hydrocarbons	Tomas	LOK	L	<u> </u>		<b></b>		
C6 - C9 Frection	µg/L	20 50	<20	<20 <50	<20		· · ·	
C10 - C14 Fraction C15 - C28 Fraction	μ9/L μ9/L	100	<50 200	200	88 303	0	Pass	20.5
C29 - C36 Fraction	µg/L	50	140	130	<100	3.7	Pass	-
Fotal TPH C10-C36 STEX	µg/L	calc	340	330	391	1.5	Pass	7,0
Senzene	µg/L	1	<1	<1	<0.5	-		
Foluene Ethylbenzene	(µg/L µg/L	2	45 12	44	<u>ব</u>		-	
neta- & para-Xylene	µg∕L	2	2	<2	<2	-		
ortho-Xylene	µg/L	2 calc	<2 ND	V ND	<1 ND			
Metals	1991L	Carc		NU			└───┫	<u> </u>
ead	mg/L	0.001	<0.001	<0.001	<0.005	· · ·	· 1	-
Polynuclear Aromatic Hydrocarl Naphthalene	pons µg/L	1	2.6	1.8	<1.0		r .	<u> </u>
Acenaphthylene	µg/L	1	<1.0	<1.0	<1.0		- ·	
Acenaphthene Fluorene	µg/L µg/L	1	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<u> </u>	<u> </u>	
henanthrane	µg/L	1	<1.0	<1.0	<1.0		•	
Iuoranthene	ug/L	1	<1.0	<1.0 <1.0	<1.0			
yrene	μg/L μg/L	1	<1.0	<1.0	<1.0			
Benz(a)anthracene	µg/L	1	<1.0	<1.0	<1.0	-		
Chrysene Senzo(b)fluoranthene	μ <u>α/L</u> μg/L	1	<1.0 <1.0	<1.0 <1,0	<1.0	⊢÷-	+ + - +	
enzo(k)fluoranthene	µg/L	1	<1.0	<1.0	<2.0			
enzo(a)pyrene	µg/L	0.5	<0.5 <1.0	<0.5 <1.0	<1.0 <1.0		<u> </u>	
ndeno(1.2.3.cd)pyrene Dibenz(a.h)anthracene	րց/լ հ	1	<1.0	<1.0	<1.0	<u> </u>		
Senzo(g.h.i)perylene	µg/L	1	<1.0	<1.0	<1.0			<u> </u>
fotal PAHs Phenolic Compounds	µg/L	calc	2.6	1.8	ND	18.2	Pass	
henol	μ <b>g/</b> L	1	<1.0	<1.0	<10			
-Chlorophenol -Methylphenol	hðyr Í hðyr	1	<1.0 <1.0	<1.0 <1.0	<10 <10			
- & 4-Methylphenol	199/L	2	<2.0	<2.0	<10			
-Nitrophenol	µg⁄L	1	<1.0	<1.0	_	_ · _	<u> </u>	· ·
.4-Dimethylphenol .4-Dichlorophenol	μg/L μg/L	++	<1.0 <1,0	<1.0 <1.0		<u> </u>		<u>⊢</u> : -
6-Dichlorophenol	Lhð/r	1	<1.0	<1.0	<10	· · · ·		
-Chloro-3-Methylphenol .4.6-Trichlorophenol	µg/L µg/L	1	<1.0	<1.0 <1.0	<10	<u> </u>	<u>   </u>	
4.5-Trichlorophenol	µg/L	1	<1.0	<1.0	-			
entachiorophenol	µg/L	2	<2.0	<2.0	<30		·	
Aetais	mg/L	0.001	0,003	0.003	<0,005	0.0	Pass	
arium	mg/L	0.001	0.015	0,014	0.015	3.4	Pass	0.0
Cadmium Chromium	mg/L mg/L	0.0001	<0.0001	<0.0001	<0.005	0.0	Pass	<u></u>
Copper	mg/L	0.001	<0.001	<0.001	<0.005		-	
ead	mg/L	0.001	<0.001	<0.0D1	<0.005			
Mercury	mg/L mg/L	0.0001	<0.0001 <0.001	<0.0001	<0.0001 <0.005	<u> </u>	<u> </u>	<u> </u>
/anadium	mg/L	0.01	<0.01	<0.01	<0.005	-	•	-
unigants	mg/L	0.005	0.012	0.015	0.012	11.1	Pass	0,0
2.2-Dichloropropane	µg/L	5	<5	<5				-
.2-Dichloropropane is-1.3-Dichloropropylene	µg/L µg/L	5	<5 <5	<5	<5	F÷-	:	
rans-1.3-Dichloropropylene	L have	5	<5	<5	<5			-
alogenated Aliphatic Compour	ndı	60	-50	-50				
ichlorodifluoromethane hloromethane	<u>ралг</u>	50 50	<50 <50	<50 <50			+	
inyl chloride	µg/L	50	<50	<50	<5	-	-	-
romomethane	μg/L μg/L	50 50	<50	<50 <50			<u> </u>	
richlorofluoromethane	199/L 199/L	50	<50	<50	<5			
.1-Dichloroethene					~	-	-	
	µg/1.	5	<5	<5	<5			
ans-1.2-Dichloroetherre	μg/L μg/L μg/L	5 5 5	<5 <5 <5	<5 <5 <5	<5 — <5		- - -	
adomethane ans-1.2-Dichloroethene .1-Dichloroethane	науг havr havr	5	<5 <5	<5 <5 <5 <5		<u>.</u>	- 1	
ans-1.2-Dichloroethene 1-Dichloroethane 5-1.2-Dichloroethane 5-1.2-Dichloroethene 1.1-Trichloroethane	науг Науг Науг Науг	5	<5	<5 <5 <5	<5 — <5			
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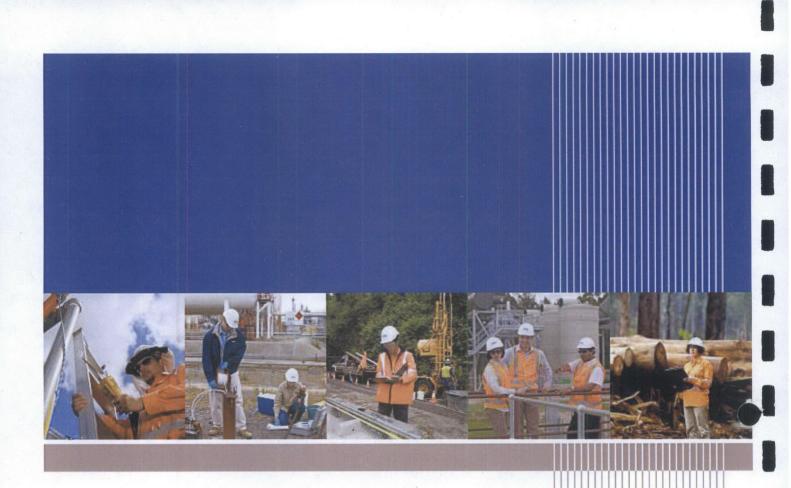
Legend mojl = mälligrams per läte PS = primary sample yojl = micrograms per läte PD = frakt duglicate LOR = Limit of Reporting FT = frakt briefaals calle = caktadied concentration thanefors no ND = Not Detected -= no RPD caktuated as results below the LOR

 RPDs are acceptable if:

 Pass
 RPD <= 30%,</td>

 Pass-1
 RPD > 30%, Analysis result < 10 times LOR</td>

 Pass-2
 RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR</td>





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