ENVIRONMENTAL MANAGEMENT PLAN

Construction and Commissioning of Groundwater Remediation System

Quix Service Station, 161 Hume Highway, Lansvale, NSW

Mobil Site No. NJ3565

FINAL REPORT

Prepared for

Mobil Australia Pty Ltd

17 Forrester Street
Kingsgrove, NSW

27 March 2006

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URS

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1.1 Environmental Management Plans

An environmental management plan (EMP) is a site specific plan developed to ensure that all contractors and sub contractors comply with the environmental conditions of approval for the project and that the environmental risks are properly managed.

The EMP should as a minimum address:

- the environmental risks involved in the project;
- plans to manage the environmental risk;
- the responsible party to manage the environmental risk;
- the responsible party to ensure the EMP is followed; and
- what to do and who to contact if there is an incident.

This EMP has been prepared by URS Australia Pty Ltd (URS) for works related to the construction and commissioning of a groundwater remediation system (GRS) at the Quix Service Station, 161 Hume Highway, Lansvale, NSW.

1.2 Objectives of EMP

The objectives of the EMP are to:

- ensure that the works are carried out in accordance with the voluntary remediation agreement (VRA) under Section 26 of the Contaminated Land Management Act (CLM Act) submitted by Mobil Australia Pty Ltd (Mobil) to the Department of Environment and Conservation (DEC);
- ensure that the works are carried out in accordance with appropriate environmental statutory requirements;
- ensure that the works are carried out in accordance with the EMP;
- to minimise any likely adverse environmental impact of the development;
- ensure that all personnel engaged in the works comply with the terms and conditions of the EMP;
- ensure that no change is made to the EMP without the approval of the Project Manager;
- respond to changes in environmental conditions in consultation with the Project Manager; and
- ensure that corrective actions are completed in a timely manner.

1.3 Site Description

The table below provides a summary of the site identification details from the Remedial Action Plan (URS, April 2003).

Item	Description
SITE NAME	QUIX Service Station Lansvale.
SITE NUMBER	NJ3565.
SITE LOCATION	161 Hume Highway, Lansvale, NSW.
REAL PROPERTY DESCRIPTION	Lot 204 in Deposited Plan 732440
SITE AREA	1 894 m^2.
SITE ZONING	4(c) Industrial Special.
CURRENT OWNERSHIP	Modern Motels Pty Ltd (leased by Mobil Oil Australia Pty Ltd.).
PROPOSED SITE USE	Ongoing commercial/industrial.
LOCAL GOVERNMENT AREA	Fairfield City Council
CURRENT SITE USE	Service Station

Refer **Figure 1** for site location.

1.4 Project Background

1.4.1 General

The purpose of the project is to design, construct and commission a groundwater remediation system (GRS) to remove phase separated hydrocarbons (PSH) in groundwater and mitigate the potential off-site migration of dissolved phase groundwater contamination through hydraulic control of the plume. The following is a summary of the detailed design (URS, November 2005).

The proposed remediation system is a total fluids pump and treatment system designed to recover PSH (to the extent practicable) and dissolved phase hydrocarbons from the sand aquifer beneath the site in the vicinity of the USTs located in the southwest corner of the site (**See Figure 2**). The benefit of this

approach is that it will provide hydraulic control of the plume, while also allowing effective recovery of both PSH and dissolved phase contaminants. An enhanced bioremediation system (introduction of oxygen to enhance biological degradation of hydrocarbons by aerobic metabolism) will also be installed along the east and north east edge of the site where a dissolved phase groundwater contaminant plume resides in low permeability clay.

The main processes of the GRS are broken down into the following sections:

1.4.2 Groundwater Extraction

The total fluids pumping system will consist of four (4) 90 mm submersible pneumatic groundwater extraction pumps, installed in the existing 100 mm extraction wells RW01 through RW04 (**Figure 2**). The submersible pneumatic pumps will be top loading pumps such that PSH is able to be collected and removed from the watertable interface. The pneumatic extraction pumps will be operated via a compressor connected to individual air filter/regulators for each pump. A cycle counter will be connected to each air filter/regulator so that flow rates and quantities can be recorded.

1.4.3 Groundwater Treatment

The GRS treatment facility layout is shown in **Figure 3**.

All fluids extracted from the extraction wells will be pumped to a holding tank (T-1) where the PSH component of the total fluids will be allowed to separate. The total fluids will then flow via gravity feed to an oil/water separator. The separator will include corrugated plates to coalesce floating organic compounds. All separated oils will be directed towards a product collection tank. The vapours from the product tank will be vented to an activated carbon drum for treatment prior to discharge to the atmosphere. All water from the oil/water separator will be transferred via gravity flow towards holding tank T-2.

A pneumatically powered diaphragm pump (transfer pump) will transfer water from the holding tank T-2 through a bag filter containing a straining basket equipped with a 25-micron polyester felt filter bag. The filtered water will be directed to the air stripper where volatile organic compounds (VOCs) will be removed from the groundwater. Water enters through the top of the air stripper inlet port. The water is then allowed to flow over a weir and through a series of sieve/aeration trays as it descends to a sump at the bottom of the unit. Air (provided via a blower) is forced up through the sieve holes in each tray, generating a large gas/liquid contact surface area which allows transfer of contaminants from the water into the rising air, which is exhausted at the top of the unit. A demister pad prevents the release of water droplets in the exhaust. Water from the sump of the air stripper will be directed towards liquid-phase granular activated carbon (LGAC) drums. Vapour generated from the air stripper will be directed towards a knockout vessel to condense the water content of the vapour. The vapour enters the knockout vessel tangentially which directs the vapour to the wall of the knockout vessel, creating a vortex action. The water content of the vapour condenses and is collected at the base of the vessel for periodic

discharge. The vapour is then directed towards vapour-phase GAC (VGAC) drums where additional hydrocarbon vapours are removed prior to discharge into the atmosphere.

The enhanced bioremediation system will address potential off-site migration of the dissolved phase hydrocarbon impacts along the east and north side of the site. The enhanced bioremediation system will involve delivering oxygen to monitoring wells PW1, PW2, PW4, PW5, LMW13, LMW14 and LMW17 via a proprietary technology called in-situ Submerged Oxygen Curtain (iSOC®) that when suspended in existing monitoring wells infuses high levels of oxygen into the groundwater. The iSOC® unit transfers gases directly to groundwater in a treatment well without sparging. The introduced oxygen will enhance the biologically mediated degradation of hydrocarbons by aerobic metabolism.

2.1 Site Establishment

Site establishment will include construction of a temporary fence around proposed GRS and connection of temporary electrical and water supplies.

During site establishment the designated car parking areas, vehicle access and vehicle loading and unloading areas will be defined.

2.2 Earthworks

Earthworks will comprise:

- Removal of bitumen/concrete surface in preparation for excavation of trenches;
- Excavation of trenches and fill material to a depth to be determined;
- Backfilling with clean fill;
- Compaction of backfill;
- Reinstatement of bitumen/concrete surface after installation of infrastructure;
- Removal of bitumen surface in preparation for construction of concrete equipment pads; and
- Excavation of fill material in preparation for construction of treatment facility sump.

2.3 Construction of Groundwater Remediation System

The following steps will be involved in the construction of the GRS:

- Installation of utility vaults;
- Laying of pipework within excavated trenches from the designated wells to the treatment facility;
- Construction of concrete pads for tanks and pumps;
- Construction of treatment facility sump for the collection of any overflows and/or leaks;
- Installation of submersible pneumatic groundwater extraction pumps in designated wells;
- Installation of the enhanced bioremediation system in designated wells;
- Installation of tanks, pumps, oil/water separator, bag filter, air stripper, knockout vessel within the treatment facility compound;
- Installation of the GAC drums, air compressor and oxygen storage cabinet;

- Installation of pipework and valves to connect all equipment within the treatment facility;
- Installation of instrumentation;
- Installation of electrical conduits, cables and control panel; and
- Construction of bunding and permanent fence enclosure.

2.4 Pre-Commissioning Safety and Integrity Testing

Prior to commissioning, a series of safety and integrity checks will be performed including:

- detailed checks of all installed equipment to ensure integrity (i.e. no leakage, no exposed wiring);
- hydraulic testing of all tanks, pipes, valves, pumps etc.;
- visual inspection of all critical equipment (instrumentation which activates a system shutdown) and signed off by a Mobil Representative;
- hydraulic/electrical testing of all switches, controls and alarm conditions; and
- operation of the emergency shutdown procedure.

2.5 Commissioning

Once the pre-commissioning testing has been successfully completed, the GRS will be commissioned. Commissioning will involve running the treatment plant under partial and full loads making any necessary adjustments to the operating system.

Discharge samples will be collected at regular intervals during the commissioning period to monitor concentrations and treatment efficiencies.

2.6 Post-Commissioning Demobilisation and Fencing

Demobilisation following commissioning of the system will involve removal of all temporary facilities from site and construction of a permanent perimeter fence (with an access gate) around the GRS.

2.7 System Operation and Monitoring

System startup procedures, system performance monitoring, commissioning activities and ongoing system operation and maintenance procedures will be outlined in the following report:

- System Startup Procedures and Commissioning Report; and

- Operations and Maintenance Manual.

2.8 Final Decommissioning

Once the remediation goals outlined in the VRA have been achieved, the GRS will be decommissioned. The following steps will be involved in the final decommissioning:

- Disconnection and cleaning of the oil/water separator, particulate filter, air stripper and knockout vessel. All cleaning water will be directed towards the treatment facility sump where it will be pumped to holding tank T-1;
- Disconnection of all treatment system piping;
- Removal of any remaining liquids in the holdings tanks T-1 and T-2 and offsite disposal;
- Removal of any PSH in the product collection tank and offsite disposal;
- Cleaning of holding tanks T-1, T-2 and the product collection tank;
- Removal of the vapour collection drum, LGAC and VGAC drums for offsite disposal;
- Removal of all instrumentation, valves etc.;
- Removal of all equipment;
- Removal of all equipment pads and the treatment facility sump pump;
- Backfilling the treatment facility sump pump and surface reinstatement; and
- Dismantling of the GRS perimeter fence and associated bunding and surface reinstatement.

All solid and liquid waste removed from the site will be transported and disposed of by an independent waste disposal contractor. All equipment will be transported to a facility to be nominated by Mobil.

2.9 Working Hours

The working hours are as follows:

- Monday to Friday, 7:00 am to 6:00 pm; and
- Saturday, 8:00 am to 1:00 pm.

There will be no work on Sundays or Public Holidays.

3.1 General

This section provides details of the environmental aspects and impacts associated with the work, including:

- Voluntary Remediation Proposal; and
- Environmental risks.

3.2 Voluntary Remediation Proposal

A copy of the Voluntary Remediation Proposal is included in **Appendix A**.

3.3 Environmental Risks

This section identifies activities, process and facilities which require control strategies to ensure environmental protection and compliance with the VRA.

To identify risk, consideration has been given to circumstances which may trigger or exacerbate risks, eg. intense rain or storm events, prolonged above average rain, drought, flood and inundations, wind, earthquake, fire, equipment breakdown, human error and accidents.

Table 1 presents an Environmental Risk Identification Matrix. The left side of the matrix lists all of the potential environmental impacts of the works while the top of the matrix provides a breakdown of work activities. Identified risks are marked with a Y.

Table 1 Environmental Risk Identification Matrix

Issue	Site Establishment	Earthworks	Construction of Groundwater Remediation System	Pre-Commissioning Safety and Integrity Checks	Commissioning Groundwater Remediation System	Demobilisation and Fencing
Air pollution (dust, other)	N	Y	Y	Y	Y	Y
Erosion	N	Y	Y	N	N	Y
Surface Water Pollution	N	Y	Y	N	N	Y
Release of Contaminated Groundwater	N	N	N	Y	Y	N
Release of Contaminated Soil	N	Y	Y	N	N	N
Noise	Y	Y	Y	Y	Y	Y
Vibration	N	Y	Y	N	N	Y
Electrical Hazards	Y	Y	Y	Y	Y	Y
Hot Works	Y	Y	Y	Y	Y	Y
Visual Amenity	Y	Y	Y	Y	Y	Y
Fire	N	Y	Y	Y	Y	Y

This following table provides documentation of the control measures to be taken to manage aspects and impacts identified in the environmental risk identification matrix.

Table 2 – Environmental Control Measures

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
Air Quality • venting of off gases • pipe leaks • excavation works • vehicular traffic • erosion (refer Erosion below)	• all loads entering and leaving the site will be securely covered	Daily	Visual Assessment
	• water sprays may be used across the site to suppress dust if required	As required	Complaints Register
	• all stockpiles of materials left on the site for more than 24 hours will be covered	As required	
	• bulk earthworks will be scheduled to avoid particularly dry or windy weather conditions	As required	
	• where dusty conditions occur at the site, site works will cease until the dust source is removed or weather conditions are more suitable.	As required	
	• if complaints are received at the site, dust monitoring will be undertaken and the results and any additionally recommended mitigation measures required will be implemented	As required	
	• traffic associated with earthworks will be required to clean track/wheels to prevent tracking of mud and generation of dust as it is leaving the site	As required	
	• no material will be burnt on site	As required	
	• all pipework laid in trenches will be sloped towards the utility vaults. The utility vaults will be inspected as part of regular GRS monitoring activities for signs of pipe leakage	Regular GRS monitoring	Visual Assessment

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
	• offgases from the GAC drums will be monitored regularly to ensure vapour concentrations of volatile organic compounds (VOCs) do not exceed 20mg/m^3 VOCs (as n-propane equivalent). Odours will also be observed using olfactory measurements	Regular GRS monitoring	PID and olfactory measurements
	• air monitoring will be performed throughout the excavation works using a Lower Explosion Limit (LEL) meter and a field portable photoionisation detector (PID)	Daily during excavation works	LEL/PID monitoring at the source and at the downwind site boundary
Erosion • excavation	• area of excavation to be kept as small as possible	As required	
	• excavated material will be placed into skip and/or drums to minimise soil stockpiles	As required	
	• erosion control measures will be installed in accordance with NSW Department of Housing's *Managing Urban Stormwater: Soils and Construction (1998)* guide	As required	
Surface Water • spills • erosion • adjoining properties	• storm water drains will be sand bagged off to prevent any waste material from entering them during the construction phase of works	Daily	Visual Assessment
	• potential spills from improper pipe connection and commissioning activities will be minimised by the isolation of all pipes and equipment prior to work being commenced	As required	

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
	• provision of secondary containment for work areas where a potential for spills exists, including bunding, drain covers or stormwater cut off valves	As required	
	• provision of spill absorption material and spill kits coincident with size of potential spill	As required	
	• limiting quantities of chemicals and hazardous materials held on site (refer Hazardous Materials below)	As required	
	• following construction of the GRS, rainwater which falls on the roof of the treatment facility will be directed towards the existing stormwater drain located adjacent to the treatment facility compound.	As required	
	• overflow/spills of PSH/groundwater from the GRS will be contained by the treatment facility bunding and pumped to the holding tank T-1.	Regular GRS system monitoring	Remote system monitoring and visual assessment
Groundwater	• groundwater generated from the construction and commissioning of the GRS will be temporarily stored in holding tank T-1 and will be either treated by the GRS or removed by a licensed waste disposal contractor prior to system operation.	Pre-commissioning	
Contaminated Soil • excavation of contaminated soil	• if contaminated soil is encountered during excavation work it shall be segregated and placed in skips or drums to minimise contaminated soil stockpiles in preparation for offsite disposal in accordance with regulatory requirements.	During excavation activities	Visual Assessment and Laboratory Analysis

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
	• deodorants will be used to minimise odour if waste material is encountered to minimise short term nuisance odours	As required	
Waste • Waste generated during excavation works • Waste generated during GRS commissioning and operation (PSH, dissolved phase groundwater, spent bag filters)	• the purchase and use of products with minimal packaging waste and methodologies for waste minimisation on the site where possible	As required	Assessments/Inspections
	• the removal of packaging waste from the site where appropriate	As required	
	• separation of waste materials into their respective waste stream skips at convenient locations on the site	As required	
	• receptacles to store all waste generated onsite will be provided. The receptacle will be emptied regularly	As required	
	• use of proprietary waste collection and storage systems and the use of appropriately licensed waste management companies for the removal and disposal of waste materials from the site	As required	
	• collection of waste materials by a licensed waste contractor for recycling as a first option, or disposal as a second option at a frequency which ensures that waste materials are not allowed to build up to an unacceptable level on the site	As required	
	• PSH collected in the Product Recovery Tank will be periodically removed and disposed of offsite by an appropriately licensed liquid waste transporter.	As required	Regular GRS monitoring and remote monitoring
	• Particulate bag filters will be periodically changed and disposed of offsite in accordance with regulatory requirements	As required	Regular GRS monitoring

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
Noise • excavation • compaction • concreting • traffic • system operation	• works on the site will only be carried out between 7.00 am to 6.00 pm Monday and Friday and 8.00 am to 1.00 pm Saturday. No work is to be undertaken on Sundays or Public Holidays.	Continuous	Complaints
	• all heavy vehicles working on site and visiting the site (compressors and other associated plant utilised as part of the construction work) will be fitted with appropriate silencing devices.	As required	If complaints are received relating to noise at the site, noise levels will be assessed at the nearest receptor by attended monitoring over a 24-hour period. If the trigger levels are exceeded, further mitigation measures will be implemented
	• activities that generate high noise levels will be scheduled to short term duration wherever possible and to times of the day which would be least intrusive	As required	Complaints register
	• all GRS equipment which generates noise (i.e. air compressor, pumps, blowers) will be fitted with appropriate silencing devices or housed within noise abatement enclosures.	Regular GRS monitoring	Complaints register
Vibration • Compaction	• activities that generate vibration will be scheduled to short term duration wherever possible and to times of the day which would be least intrusive	As required	Complaints register
Visual amenity • Stray Light	• Lighting of the construction site will be directed so as not to cause nuisance to owners or occupiers of the site and adjoining premises or motorists on adjoining or nearby roads	As required	Complaints register
Electrical Hazards (Hot works)	• hot work permits will be obtained on a daily basis, as per Mobil Specifications.	Daily	Visual Assessment/Inspections

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
	• all electrical wiring installation works will be performed by an AIP trained licensed electrician.	As required	Certification Inspected
	• details of the work permit system, procedures and forms will be included in the Health and Safety Plan.	As required	
Fire	• no fires will be permitted on the site	Continuous	
	• anti-flash screens will be used when welding	As required	
	• hot work areas are to be kept clear of flammable materials	As required	
Traffic	• no vehicles are to arrive at the site outside the site working hours	Continuous	Complaints Register
	• a traffic management plan will be prepared to minimise disruption to traffic associated with site operations.	Daily	Assessments/Inspections
	• a designated on-site parking area will be provided on the site for the duration of the proposed works	As required	
Hazardous Substances	• A register of all hazardous materials used and stored on site will be kept onsite. MSDS for all these materials will also be kept onsite.	As required	
	• The GRS treatment facility will be bunded to prevent spillage to local stormwater drains and will be designed in accordance with AS 3780 and the requirements of the EPA Environment Protection Manual Technical Bulletin "Bunding and Spill Management"	As required	

Environmental Aspect and Impact	Control Measure(s)	Timing	Monitoring
	• Handling of potentially contaminated groundwater, chemicals and hazardous materials will be undertaken as per Site Specific Health and Safety Plan. Handling and storage of chemicals and hazardous substances will also be carried out in accordance with the manufacturer's Material Safety Data Sheet.	As required	
	• The plant will be secured by a locked security fence and will not be accessible to the public	As required	

5.1 General

This section outlines the environmental responsibilities of contractors and subcontractors.

The construction works will have an EMP management team, who will meet on an a regular basis to discuss environmental and associated community issues at the site. The EMP management team will include the Project Manager, Construction Manager, and On Site Supervisor.

The environmental responsibilities are detailed in the following sections.

5.2 Project Manager

The environmental responsibilities of the Project Manager include:

- management of the proposed works in accordance with all statutory requirements, best practice guidelines and the requirements of the EMP;
- suspension of Contracts, where there have been significant breaches of statutory regulations or the EMP;
- resumption of works after corrective actions have been completed satisfactorily;
- attend EMP team meetings.

5.3 Construction Manager

The Construction Manager's environmental responsibilities include:

- coordination of the implementation and any revisions to the EMP to ensure the safety and protection of personnel, the community, plant, equipment and the environment;
- facilitating the monitoring schedule required during the works;
- liaison with authorities and local community as necessary;
- facilitate the site induction and training programme;
- ensure that all licenses, clearances, permits and approvals are in place in the appropriate manner;
- co-ordinate and attend the EMP team meetings;
- co-ordinate the review and update of the EMP;
- temporary suspension of site work if the environment or health and safety of personnel or the community is at risk; and

- temporary suspension of individuals from the site where disregard for the EMP has been identified.

5.4 On Site Supervisor

The on-site supervisor has the following responsibilities:

- on-site implementation of the EMP including tool box talks;
- conduct health and safety/environmental inspections (refer Safety/Environmental Checklist **Appendix B**)
- day to day management of the requirements of the EMP and ensuring that the checking, monitoring and inspection of appropriate mitigation measures for contract and sub-contract personnel is undertaken;
- notification of EMP team and the appropriate external bodies (such as emergency services, regulatory authorities) in the event of an environmental incident;
- investigations into complaints received at the site;
- attend the EMP team meetings; and
- keeping the Project Manager and Construction Manager informed of changes or issues associated with environmental management of the works.

6.1 Implementation

All works shall be implemented in accordance with this EMP for the full duration of the project, from site establishment through demobilisation. However, the EMP may be revised as required throughout the course of the project to better align the management of the works with changing site and project conditions.

6.2 Training

All personnel working on the site will receive an introduction to the site, explaining the environmental hazards, sensitivities and emergency procedures for the site.

On-site supervisory personnel will be appropriately trained in specific emergency training, which includes the management and response to environmental incidents, which could occur at the site.

When a need is identified, arrangements shall be made for the appropriate training via induction and/or awareness training/toolbox meetings.

6.3 Records

The following environmental records will be maintained:

- management plans and review records;
- incident reports and details of follow up;
- inspection, maintenance and calibration records;
- training records; and
- complaint records including response to complaints and how the complaint was resolved.

6.4 Monitoring

Monitoring will be conducted as indicated in **Section 5** of the EMP to ensure environmental control measures achieve the purpose for which they are intended.

6.5 Corrective Action

Where a non compliance with the EMP is detected, it shall be documented and a corrective action will be determined and implemented.

The corrective action measures undertaken shall be inspected to determine their effectiveness in resolving the issue.

6.6 Complaints Management

A log will be retained on the site for any complaints received at the site. Each complaint will be investigated and remedial measures adopted as appropriate. Any complaints received at the site will be discussed at the EMP team meetings.

References

SECTION 7

Notice of Voluntary Remediation Proposal for Mobil Australia Pty Ltd, Quix Service Station, 161 Hume Highway, Lansvale, NSW. Dated August 2005

NSW Department of Public Works and Services (June 2000), *Occupational Health Safety and Rehabilitation Management Systems Guidelines 3rd edition.*

URS Australia Pty Ltd (April 2003), *Remediation Action Plan, QUIX Service Station, 161 Hume Highway, Lansvale, NSW (NJ3565).*

URS Australia Pty Ltd (March 2005), *Remediation Action Plan Addendum, QUIX Service Station (Mobil Site No. NJ3565), 161 Hume Highway, Lansvale, NSW.*

URS Australia Pty Ltd (November 2005), *Groundwater Remediation System – Detailed Design, QUIX Service Station, 161 Hume Highway, Lansvale, NSW (NJ3565).*

Limitations and Third Party Use

Limitations

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

a) This Plan was prepared for Mobil in accordance with normal prudent practice and by reference to applicable EPA and industry standards, guidelines and assessment criteria in existence at the date of issue of this Plan, and any previous site investigation and assessment reports referred to in this Plan.

b) This Plan should be read in full and no excerpts are to be taken as representative of the whole Plan. No responsibility is accepted by URS for use of any part of this Plan in any other context.

c) This Plan is based solely on the scope of work agreed between URS and Mobil and described in Section 1.2 ("Scope of Works") of this Plan.

d) This Plan was prepared between 2 December 2005 and 24 March 2006 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.

e) Where this Plan 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 Plan.

f) Only the chemicals specifically referred to in this Plan have been considered. URS makes no statement or representation as to the existence (or otherwise) of any chemicals other than those specifically referred to.

g) This Plan has been prepared to address on-site contamination issues only (within the context of and limited to the Scope of Work).

h) Subsurface conditions can vary across a particular site and cannot be exhaustively defined by the investigations carried out prior to this Plan. It is unlikely therefore that the results and estimations expressed or used to compile this Plan will represent the extremes of conditions at any location removed from the specific points of sampling.

i) 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.

j) 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.

k) The ongoing use of the site may require the owner/user to manage site conditions, such as contamination and other conditions, including but not limited to conditions referred to in this Plan.

Third Party Use

In this Plan 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 Plan;

(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 Plan a reference to the "**Interested Party**" means:

2. Where as at the date of this Plan 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

3. Where as at the date of this Plan 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

4. Where this Plan is to be submitted to a public or regulatory authority pursuant to a requirement under applicable planning or environmental controls, the authority, or

5. Where this Plan is to be submitted to an independent environmental auditor, the auditor.

URS acknowledges that an Interested Party may be given a copy of this Plan.

URS consents to provision of this Plan 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 Plan;

(b) the Interested Party acknowledges that:

(i) in carrying out its investigations included in this Plan, URS has acted on instructions provided by or on behalf of Mobil or an Affiliate;

(ii) except as may be expressly stated in this Plan, 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;

(iii) the information, comments, conclusions and opinions contained in this Plan, and the accuracy or completeness of any information included in this Plan, are subject to the limitations expressed elsewhere in this Plan; and

(iv) except as expressly stated in this Plan, URS makes no express or implied representations or warranties as to the professional advice included in this Plan (including as to the completeness or accuracy of the information contained in this Plan), 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 Plan 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 Plan or the services performed by URS to prepare the Plan, 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

Except as specifically stated in this section, this Plan may not be used by any third party.

URS has been retained to prepare this Plan as an independent contractor of Mobil or an Affiliate and not as an agent of either of them. Neither Mobil nor an Affiliate is to be taken as making under any circumstances whatsoever or on any account whatsoever, any statement, representation, warranty or endorsement as to the adequacy or otherwise of the Plan.

Appendix A

VOLUNTARY INVESTIGATION/REMEDIATION* PROPOSAL UNDER CONTAMINATED LAND MANAGEMENT ACT 1997

Part 1

Preliminary Details

1. Proponent's Details

(a) Name and contact details

If a registered company, company name: Mobil Oil Australia Pty Ltd
Trading as:
ACN/ABN: 004 052 984

If not a registered company, your full name(s):
Trading as:
ABN:

Phone: (03) 9270 3333
Fax:
Email:
Postal address: 12 Riverside Quay, Southbank, VIC
Postcode: 3006
EPA licence number (if applicable):

(b) Who the EPA should contact with technical enquiries about the proposal

Name: Bogusia Smolenski
Employer/Company: Mobil Oil Australia Pty Ltd
Position title: Remediation Consultant
Type of business:
Phone (business): (02) 9502 4844
Phone (after hours): 0418 162 538
Fax: (02) 9502 2105
Email: bsmolenski@itenviro.com.au

***please strike out as appropriate**

Draft Multiphase Extraction and Air Treatment Event, Quix Service Station (NJ3565), 161 Hume Highway, Lansvale, NSW. Prepared by URS and dated 25 July 2005.

Draft Pumping Test Interpretation and Implications for System Design. Quix Service Station (NJ3565), 161 Hume Highway, Lansvale. Prepared by URS and dated 10 August 2005.

c) the undertakings set out in Part 2 of this document; and
d) the performance schedule set out in Part 3 of this document.

Proponent's signature:

Date:

Full name: Matt Bergeron

Position title: Retail Sales Manager Australia

8. The proponent will, and acknowledges that the EPA may, make all documents and information relating to the activities available to the public free of charge.

9. The proponent will:

   i) prior to the implementation of the proposal provide for the EPA's approval a strategy for communicating about that implementation, particularly the actual remediation works, with members of the public who are likely to have a real interest in or be affected by that implementation and

   ii) implement the strategy as approved by the EPA.

Monitoring, Record Keeping & Reporting

10. At least until the EPA has notified the proponent that the EPA no longer considers that the contamination poses a significant risk of harm, record and retain all monitoring data and information and provide this record to the EPA at any reasonable time if so requested by the EPA and as specifically provided under the proposal.

    [Note: Specific details of monitoring and data reporting requirements, requirements for progress reports, etc are to be set out in the performance schedule in Part 3 of this document.]

11. The EPA will be informed in writing within 7 days of the proponent becoming aware of information or data indicating a material change in conditions at the site or in its surrounding environment which could adversely affect the prospects of successful investigation or remediation of the site or result in harm to the environment.

12. The EPA will be informed in writing within 7 days of the proponent becoming aware of any failure, either by the proponent or any other person, to comply with any component or aspect of the proposal.

13. The EPA will be informed in writing as soon as practicable of any notification by the proponent, its employees or its agents to an appropriate regulatory authority other than the EPA of any pollution incident at the site within the meaning of the *Protection of the Environment Operations Act 1997*.

    (See http://www.epa.nsw.gov.au/legal/dutytonotify.htm)

Performance Schedule

14. The performance schedule which is in Part 3 of this document will be adhered to.

Proponent's signature:

Date:

Full name: Matt Bergeron

Position title: Retail Sales Manager Australia

***please strike out as appropriate**

2. Principal Features Of The Proposal

Phase 1 – Preliminary Works

The principal features of Phase 1 include, but are not limited to:

a. Capital works

P1. Installation of 2 x 100mm diameter recovery/monitoring wells (RW01 and RW02-see attached Figure 1) in the vicinity of the UST area where PSH plume has been identified, to facilitate an aquifer pumping test and recovery of PSH and groundwater, as part of the future recovery system at the site.

P2. Undertake aquifer pumping test to verify aquifer conditions to aid in the design of the remediation system including the number and construction details of the recovery wells, their locations and extraction rates required for PSH recovery and plume migration control.

b. Remediation System Design

This will involve the following stages:

P3. Preliminary Design, including:

i. Overview of the proposed system design and capacities required for each of the system components;

ii. Development of proposed system schematic (layout, footprint, etc);

iii. Preliminary system design review.

P4. Detailed Design, including:

iv. Site visit to evaluate available infrastructure, system locations, discharge points, etc;

v. Detailed design outlining system operating parameters, treatment options, operational schedule;

vi. Design of all system instrumentation, controls and interlocks; and

vii. Review of system for compliance with Mobil's procedures and protocols.

c. PSH Recovery (MPVE)

P5. Continue PSH and groundwater extraction using a mobile extraction truck (MPVE) at:

(i) monitoring well MW2 near the UST area;

(ii) monitoring well MW6 near the fuel dispensers;

(iii) monitoring wells MW9 downgradient from the UST area; and

(iv) monitoring well MW15 near the UST area and fuel dispensers.

d. Post MPVE Groundwater Monitoring Event (GME)

P6. A groundwater monitoring event at the site and off-site (including all monitoring wells on-site and off-site) after completion of the extraction event to monitor groundwater and PSH plume behaviour, and to assess the effect of the extraction event.

3. Reporting Requirements And Timeframe For Submission Of Reports

Mobil will use its best endeavours to provide the following reports to the EPA, by the dates specified below:

Report	*Deadline*
R1. A summary of the Remediation System Design, incorporating results of the aquifer pumping test.	30 September 2005
R2. Multiphase Extraction Report in a letter format.	31 August 2005
R3. Validation Report following the completion of remediation works referred to in Phase 2.	Within 12 weeks of the works being completed – 31 March 2008
R4. Site Wide Groundwater Monitoring Reports at quarterly intervals to include results and discussion of: • monitoring of groundwater levels and groundwater sampling, both on the site and off the site; and • measurements of groundwater/PSH recovery, extraction and disposal; and	Combined monitoring reports referred to in P12, P13, P14 and P15, and R4 - within 10 weeks of each sampling date. Compiled results of the testing and monitoring referred to in P12 to P14 up to 31 March 2006 (first quarter) - by 15 May 2006.
R5. Post Remediation Groundwater Monitoring Report to include results and discussion of: • monitoring of groundwater levels and groundwater sampling, both on site and off site; • evaluation of groundwater flow direction; and • assessment of natural attenuation.	Compiled results of the testing and monitoring referred to in P15 - within 10 weeks of each sampling date.

Appendix B

Safety and Environmental Checklist

To be completed by a member of the Project Environmental Management Team on a weekly basis.

LOCATION: _____ DATE: _____

	Observation	Requires Action	Action Taken
STORED MATERIALS			
Material correctly stored			
Materials identified			
Waste contained			
TOOLS			
Correctly stored			
Lifting devices stored			
Jigs and tooling stored			
Electrical equipment tagged			
ENVIRONMENTAL REQUIREMENTS			
Oils and chemicals stored in the bunded areas			
Used waste parts and materials recycled where possible			
Information entered into the site Waste Removal Logbook complete			
Material Safety Data Sheets for all on-site chemicals			
PLANT EQUIPMENT			
Clean from oil/grease			
Leaks contained			
Off-line equipment labelled/tagged			

	Observation	Requires Action	Action Taken
ALL AREAS			
Confined spaces identified			
Gas hazards areas identified			
All walkways clear			
Cleanliness general			
Grates, hatches, covers in place			
Switch rooms access doors clear			
Switch rooms clean and tidy			
Switch boards access clear			
Spillage kits available			
MSDS accessible			
Records of inspection of safety equipment			
GENERAL SAFETY			
Fire extinguishers			
Safety equipment condition			
Hazards identified at the plant			
Excessive noise			
Roadway controls			
Safety boots worn			
Hearing protection worn			
Eye protection worn			
Safety hats worn			
Adequate lighting			
Compliance with Daily Safe Work Plans			
Personal hygiene			

3. Extra comments

Signature(s): _____ **Date:** _____