

Date Printed: 09/08/2019
Report Criteria: Category: DHIMNRU , LGA: Brisbane City Council , Record Type: BP , N/Activity Priority: N

<u>Lot</u>	<u>Plan</u>	<u>Site Id</u>	<u>Site Name</u>	<u>Cat</u>	<u>Site Address</u>	<u>Par-Lot/Plan</u>	<u>Lvl</u>	<u>N/Activity</u>
s.73								
1	RP154325	896	FORMER SERVICE STATION-INDOOR	M	280 MOGGILL ROAD INDOOR00PILLY 4068		1612	34

s.73								
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Enquiries Greg O'Brien
Telephone (07) 33305709
Your reference
Our reference BNE7447

Department of
Environment and Resource
Management

30 March 2010

COPY

Mr Robin Wagland
MACH 1 Environmental
PO Box 320
Ferny Hills Qld 4055

Dear Mr Wagland,

APPOINTMENT AS THIRD PARTY REVIEWER: DENMAC FORD, 280 MOGGILL ROAD INDOOROPILLY, L1 RP154325

Department of Environment and Resource Management (DERM) advises that, following panel review under the TPR Terms of Reference (TOR), your application dated 10 February 2010 is accepted to act as TPR for the above site.

This approval is conditional on the following.

1. The acceptance applies to the subject site only and to site investigation and validation work conducted and certified by a person whose qualifications and experience are acceptable to DERM under the above provisions.
2. The requirements of the Terms of Reference, *Use of a third party reviewer (TPR) for assessment and management of site contamination*, (TOR) 15 February 2008 must be complied with in relation to all site activities undertaken.
3. The DERM is to be advised in writing within 5 days of final execution of all contractual documents associated with your engagement by the site owner and other relevant parties.

This acceptance does not infer that your services as TPR will be accepted for any other site. Applications for other sites will be assessed according to the TOR. Should you require any additional information, please contact the undersigned or the DERM project officer for any relevant site.

Yours sincerely,

s.73

Greg O'Brien
Chief Scientific Advisor, Environmental Operations

10 February 2010

Michael Malouf

Calile Malouf Group
Level 5, 141 Queen Street
Brisbane,
QLD 4000

Via email: michael@malouf.com.au

Document Ref: 10-001-006 TPR Proposal

See Robin email 11/3/10

L1 RP 154325 BNE30396

Dear Michael,

Re: Proposal to Provide Third Party Reviewer Services, Denmac Ford, Indooroopilly Development Site, Brisbane, Queensland

MACH1 Environmental Pty Ltd (MACH1) would like to thank you for your request to provide a proposal for Robin Wagland to act as Third Party Reviewer (TPR) for the proposed development site at the Denmac Ford site, 280 Moggill Road, Indooroopilly. MACH1 is an environmental consultancy firm specialising in contaminated land management and Robin Wagland is Principal.

At this stage, it is understood that Butler Partners (BP) will be the Contaminated Land Consultant for the remediation of the site, to allow the removal of the site from the Department of Environment and Resource Management (DERM) Environmental Management Register (EMR).

The work will involve completion of a TPR application, a site visit and review of the reports. The BP work will then be approved in the form of a TPR Certification report.

1 Background Information

Currently, the following information is understood regarding the site:

- The site is due to be notified for listing on the Department of Environment and Resource Management (DERM) Environmental Management Register (EMR) due to the former presence of fuel storage infrastructure and currently hazardous contaminants within the shallow fill material on the site.
- The site is proposed to be redeveloped for commercial/residential purposes with the requirement for removal of the site from the EMR.

- Previous site investigation works have been completed by BP and have noted metals contamination in the shallow fill. It is assumed the previous reports for this work will be available and will be reviewed by the TPR. It is understood this comprises of two reports, the Stage 1 Investigation March 2007 and Additional Investigation April 2007.
- There is a desire to remove the site from the EMR.
- Additional investigation work is expected in the near future to finalise a future plan for the site.

2 MACH1 Environmental Key Differentiators

MACH1 and the staff have the key differentiators to undertake a successful role as TPR for the site including:

- Robin Wagland the proposed TPR has over twenty years experience of contaminated land and remediation both across Australia and internationally.
- Robin Wagland has been appointed for over 80 sites as TPR in Queensland and has nearly five years experience as a DERM approved TPR.
- Robin Wagland in addition to being an approved TPR is also an approved Federal Government Assessor, Department of Defence Technical Reviewer (Auditor) and Certified Environmental Practitioner.
- MACH1 has a team of individuals with extensive experience in TPR work to support the TPR.
- Robin has previously worked well on a number of projects as TPR with BP.
- MACH1 is available immediately and has the resources to be responsive to any required fast turnarounds.

3 MACH1 Environmental Capabilities

MACH1 is a Brisbane based consultancy firm specialising in contaminated land investigation, remediation and TPR services. The principal of MACH1, Robin Wagland, has over 20 years of experience in the environmental consultancy and contaminated land fields and is one of only a limited number of Queensland based TPRs. Robin is supported by a team of consultants and administrative staff covering a wide range of specialist skills and experience. MACH1 provides a high quality focused consultancy services to meet your environmental requirements.

Assisting Robin in the work outlined in this proposal will be Brock Newbery (Senior Environmental Consultant) and Annie Newbery (Environmental Consultant) as well as administrative staff.

4 TPR's Scope of Works and Table of Costs

The TPR role is to act on behalf of DERM to provide a review of all work undertaken by the consultants. Upon final review and approval of the work the TPR provides a Certification Report to allow DERM to approve the final documentation within five working days. The TPR role is to be undertaken in accordance with the DERM Terms of Reference (TOR) attached as **Appendix A** for your information.

Based on the TOR, the following outlines the assumed scope of works and associated estimated costs for the project:

- A TPR application to DERM for approval;
- A brief review of the previous BP investigation reports to allow and understanding of the current site conditions;
- A site visit during the early stages to verify the site conditions;
- A review and approval of the BP Stage 2, Remediation and Validation report; and
- Preparation of a TPR report to certify the site work.

At this stage the scope of work has been based on the information provided by yourself and BP in our discussions today, however, should the assumed scope of works change during the remainder of the project, it is likely there will be the requirement for a variations in scope of TPR services. To this extent a schedule of rates has also been provided for key personnel.

To assist in the budget process we have provided a table of costs estimates for the work (**Table 1**).

Table 1: Table of Costs Estimate (excluding GST) for required TPR Tasks

Task	Total Hours required for Task	Unit Costings (excluding GST)
TPR DERM Application	3	sch4p4(7)(1)(b) Commercial
Site Visit to verify work completed (incl travel)	4	
Brief review of previous BP Stage 1 and Additional Investigation Reports (assume <30 pages main text)	6	
Review of BP Stage 2, Remediation and Validation Report (assume <30 pages main text and one set of comments)	12	
TPR Certification Report	10	
Project Management	6	
Expenses (Travel to site visit including car hire)	Lump	
Report Production	Lump	
Administration	6	
Total (Excluding GST)		

Given that the consultants scope of works has not been finalised, the following table provides an indication of time to undertake additional TPR tasks that may be required that are not listed in **Table 1**. The TPR will only invoice the number of hours taken, therefore, if less hours are required, less will be charged. **Table 2** provides an indicative range.

Table 2: Estimate of Additional TPR Tasks if required (Ex GST)

Task	Estimated Hours required for Task	Estimated Cost based on Average Hours (Excl. GST)
Additional site visit (incl travel from Brisbane)	4	sch4p4(7)(1)(b) Commercial va
Review of additional consultants reports such as remediation and validation (assuming <30 pages of text)	10- 14	
Review of SMP (assume <5 pages)	3-5	
Review of Remediation Plan/RAP (assume < 10 pages)	6-10	
Review of Disposal Permit Application	6-8	
Site Visit Expenses (including car hire)	Lump	

For any changes in scope or additional requests for advise, MACH1 is happy to provide a schedule of rates as outlined below in **Table 3**.

Table 3: Schedule of Rates Table (excluding GST) for TPR Team

Team Member	Role	Unit Costs per hour (excluding GST)
Robin Wagland	TPR	sch4p4(7)(1)(b) Commercial
Brock Newbery	Project Manager/Senior Consultant	
Annie Newbery	Quality Assurance/Consultant	
Administration		
Expenses		Cost + 10%

Timing

The TPR is immediately available to apply for the TPR role and will subsequently review the consultants previous reports in five days. Further the TPR would be available to attend site within the first week of commissioning.

TPR quick responses can be provided within a day or two and depending on the advanced notice provided future report reviews can be completed within less than five days. The TPR Certification Report can be produced within a further five working days after receipt of any final report. The TPR will review work completed at the site and once these have been certified and approved by the TPR they will be processed by the DERM within 5 - 15 business days of receipt (depending upon workload at the time).

Commissioning MACH1 Environmental

We have attached an authorisation form to this proposal. If you wish to appoint Robin Wagland in the role of TPR, please complete the form and fax back (**Attachment B**). The proposal is also subject to MACH1 Standard Terms and Conditions (attached for your information in **Appendix C**).

We trust that the information provided in this proposal meets your requirements; however, should you wish to discuss any aspects or need any additional details, please do not hesitate to contact us further.

We trust that the information provided in this proposal meets your requirements; however, should you wish to discuss any aspects or need any additional details, please do not hesitate to contact us further.

Yours sincerely,

s.73



Robin Wagland

Principal

Attachment A
TPR Terms of Reference

Published on DES Disclosure Log
RTI Act 2009

Operational Policy

Technical Operations, Contaminated Land

Third Party Reviewer Terms of Reference

The purpose of this document is to set out the framework for the administration of the Third Party Reviewer process and the Terms of Reference for Third Party Reviewers for contaminated land assessment and management.

Use of Third Party Reviewer for Contaminated Land

Background

The assessment and management of contaminated land involves the application of skills in a range of disciplines related to human health and environmental risks. In order to improve the safe management of these risks and to provide the public with the assurance that affected land has been made suitable for the intended use, the Environmental Protection Agency (EPA) has introduced a system of third party review (TPR) of contaminated site work. This process has been developed in accordance with the *National Environment Protection (Assessment of Site Contamination) Measure, 1999* that is applicable in the Queensland jurisdiction according to the requirements of the *National Environment Protection Council Act 1994*, in particular Schedule B10, *Guideline on Competencies and Acceptance of Environmental Auditors and Related Professionals*. Third party audit of contaminated land work is commonly used in most Australian jurisdictions and the TPR process has been developed to be consistent with these systems while allowing for the decentralised nature of Queensland.

The TPR process requires that contaminated site assessment and cleanup as conducted by competent practitioners under the requirements of the *Environmental Protection Act 1994* (EP Act) is reviewed and certified by independent experienced professionals accepted by the EPA, known as third party reviewers (TPRs).

The purpose of the TPR system is to improve the quality control and standard of work performed and to provide potential benefits to users by streamlining statutory timeframes under the EP Act. The system allows for grading of accepted TPRs to operate within limits depending on their level of competency and the degree of contamination and risk posed by a particular site. TPR grading should assist in managing the cost of the use of a TPR.

Operation of the TPR process

The TPR system is site specific and may be used voluntarily by any person seeking statutory decisions from the EPA relating to contaminated land. The EPA encourages landowners and developers to use the TPR system in line with the voluntary processes in the EP Act for submission of site investigation and validation reports. The EPA will process TPR certified reports for removal of land from the Environmental Management Register (EMR) within 5 business days of receipt and deal expeditiously with enquiries and policy requests made under the process.

When considered relevant and appropriate to manage sites with a medium to high level of human health and/or environmental risk or sites involving a high level of contamination complexity, the EPA may require that a TPR be used:

- under its concurrence role for contaminated land in the Integrated Planning Act 1997; or
- as a condition of a statutory Site Management Plan (SMP); or
- as a requirement of a Notice under the EP Act.

The EPA will maintain a list of currently accepted TPRs.

Requirements for Third Party Reviewers

The TPR process has the following requirements.

1.0 Competency.

A person applying to be a TPR must:

- demonstrate to the EPA that they have competency in contaminated land assessment and management according to the criteria and processes in Attachment A; and
- certify that he or she is not a member of, nor has a financial interest or any involvement which would lead to a conflict of interest in, the contaminated land practitioner group conducting the investigation and/or management activity or the owner or developer of the site.

2.0 Application.

The EPA will assess requests for a person to be the TPR for a particular site using the processes in Attachment A. The applicant must ensure that all the required information in Section 3 Attachment A and detailed information regarding the contamination of the subject land are provided to the EPA prior to panel assessment. In considering requests, the EPA will review the level of complexity of the site contamination. The EPA will advise applicants in writing of the results of the application and panel assessment process including any conditions that may apply to acceptance.

Separate requests must be formally made to the EPA for the acceptance of a TPR for each site. A person who is accepted for a particular site may not be accepted for a site with contamination, geology or hydrogeology characteristics of greater complexity. However the EPA may waive additional assessments in subsequent applications when it is satisfied that the applicant has appropriate competencies relevant to the site contamination to be appraised.

3.0 Engagement and pre-remediation.

Unless otherwise approved by the EPA, the TPR is to be engaged by the site owner/developer and accepted by the EPA prior to the development of a final remediation action plan (RAP). It is preferable that the TPR is involved at as early a stage as possible in project development. The TPR must:

- notify the EPA as soon as practicable after any risk of serious environmental harm associated with the site has been identified;
- consult with the EPA regarding the detail of the RAP confirming the RAP's adequacy in writing (including workplace health and safety issues related to contamination and environmental protection issues related to the remediation); and
- review any draft SMP which includes site remediation conditions and consult with the EPA on the adequacy of the conditions.

EPA agreement of the RAP and SMP conditions must be obtained prior to the commencement of works unless otherwise approved. The EPA will deal expeditiously with information provided in this process.

The EPA may consent to the engagement of the TPR in circumstances where remediation work is commenced or is near completion if it is satisfied, following submissions from the TPR, that the RAP is sufficient to address site contamination and there is an adequate process to review and certify assessment and remediation work previously completed.

4.0 Practice.

4.1 General processes

The TPR will carry out independent site inspections and monitor site work and conformity with the RAP:

- at critical project milestones;
- through unsolicited visits; and
- as required through attendance at regular project review meetings.

The TPR must:

- liaise with the contaminated land practitioner group conducting the investigation and/or management activity at regular intervals;
- review applications for disposal permits and advise the EPA in writing of permit acceptability at the time of application;
- seek the consent of the EPA to variations of the RAP and advise the EPA of unexpected contamination or health and environmental concerns which arise during site remediation;
- advise the EPA of unexpected environmental nuisance (e.g. odour, noise or dust) during site remediation;
- conduct such sampling as deemed necessary, including collection of duplicate validation and/or treatability samples to independently confirm that the objectives of the RAP are being met; and
- advise the EPA of non compliance with the "general environmental duty", the RAP, any issued disposal permit or of any malpractice related to the requirements of the *Environmental Protection Act 1994*.

The TPR may consult the EPA to clarify environmental policy interpretations for specific sites.

4.2 Low risk sites

In circumstances where a site assessment reviewed by a TPR has confirmed that the contamination poses a low level of human health or environmental risk and has a low level of complexity¹, the TPR may determine that review of certified investigation and validation reports and limited on site inspection and assessment is sufficient to provide the certification required in Section 6 below.

5.0 Provision of information and site access.

The contaminated land practitioner group must provide the TPR with all requested technical and scientific data relating to the site investigation and remediation within reasonable timeframes.

The TPR must notify the EPA in writing within 2 working days in the event that their services terminate prior to final certification.

The site owner/developer must provide access to the site by the TPR at all reasonable times.

6.0 Certification and submission of reports.

At the completion of site work, the TPR must review investigation and validation reports and associated risk assessments prepared by the contaminated land practitioner group conducting the investigation and/or management activity. The TPR must also refer to records made of site inspections, associated matters and EPA correspondence on policy matters, and then prepare a summary report of site activities.

The site investigation and validation report preparer must prepare statutory declarations and certify completed work as required in sections 383 and 395 of the *Environmental Protection Act 1994*.

The TPR must prepare a statutory declaration with the summary report that certifies:

- a. that the health and environmental risks associated with the contamination have been addressed; and
- b. the site is suitable for unrestricted low density residential 2 use and uses permitted in the planning scheme for the area; and
- c. that he or she has considered any site specific advice provided by EPA; and
- d. the site may be removed from the Environmental Management Register (EMR) or the Contaminated Land Register (CLR) 3,4

or

- e. that the site has been assessed and or remediated to a standard such that the contamination may be safely managed under the conditions of an attached draft SMP and listed on the EMR as a managed site.

The contaminated land practitioner group must submit to the EPA site investigation and validation reports, associated statutory declarations certifying completed work and draft SMPs in the normal manner. **The summary report and certification by the TPR must accompany the submitted reports and draft SMPs.**

In the event that the TPR is unable to certify completed site work, the EPA must be notified in writing of the reasons as soon as practicable after the review of reports is complete. The EPA may not proceed to remove a site from the EMR/CLR or approve a draft SMP without the relevant certification. Certifications with conditions other than those agreed by the EPA, will not be acted on by the EPA (e.g. declarations that the site may be removed from the EMR or managed after the completion of specific additional site work).

The EPA will deal expeditiously with report submissions that are appropriately certified. Statutory decisions relating to certifications to remove land from the EMR/CLR will be made within 5 business days of receipt.

Random detailed audits of reports submitted under this process will be conducted by the EPA. The EPA will withdraw acceptance of any TPR in the event of proven malpractice, incompetence or negligence. A site that is subsequently found to be contaminated land, as defined in the *Environmental Protection Act 1994*, will be listed on the EMR. The EPA will take action under Section 480 of the EP Act against any person who gives false, misleading or incomplete documents to the EPA.

Note 1. An example low risk site is one with a single contaminant type with minor exceedances of Health or Environmental Investigation Levels

Note 2. The EPA considers the most sensitive land use is low density residential and uses this as the benchmark for decisions regarding the removal of land from the EMR.

Third Party Reviewer Terms of Reference

Note 3. Land containing residual groundwater contamination, remaining after removal or remediation of the source of the contamination during site remediation, which poses a low health or environmental risk (e.g. no measurable adverse effect on water quality of the receiving environment) and has been determined to be improving in quality over time, may not be considered to constitute contaminated land. The TPR will refer to the EPA for policy advice regarding residual groundwater contamination on a site-specific basis.

Note 4. In cases where some minor residual contamination remains on site, the TPR has assessed the site risks to be low and that the contamination does not require management, the site may be removed from the EMR subject to site specific advice from the EPA.

Attachment A

Competency Criteria for Third Party Reviewers

These criteria are based on and are consistent with Schedule B10 of the *National Environment Protection (Assessment of Site Contamination) Measure* made by the National Environment Protection Council in November 1999.

1 Introduction

The assessment of contaminated sites is a specialised professional area involving a number of disciplines. Practitioners must have a range of competencies and be able to recognise the need for supporting professional advice beyond their expertise when assessing contamination and its effects on land use and human health and the environment. The extent to which these competencies are applied varies with the complexity of contamination issues on individual sites.

2 Purpose

The purpose of this document is to:

- Describe the competencies which are essential to contaminated site assessment and investigation; and
- Provide a framework for acceptance by the EPA of contaminated land professionals who are required to certify site assessment and remediation work.

3 Application for Acceptance

Professionals applying for acceptance of their qualifications and experience as TPR in certification of contaminated site assessment work must supply the following information to the EPA.

1. Curriculum Vitae
2. A detailed statement of the applicant's experience and expertise in the following where applicable.
 - 1) Contaminated land assessment and management.
 - 2) Soil sampling design and methodology.
 - 3) Assessment and management of major environmental issues involving discharge/disposal of industrial waste onto land or into the air or aquatic environments.
 - 4) Other environmental sampling design and methodology e.g. industrial wastewater, regulated waste or air sampling programs.
 - 5) Groundwater sampling design and methodology.
 - 6) Assessments of impacts on groundwater from contaminated sites.
 - 7) Interpretation of chemical analytical data.
 - 8) Quality control/assurance procedures.
 - 9) Industrial processing, chemical use and waste disposal practices.
 - 10) Environmental chemistry.
 - 11) Soil science.

- 12) Hydrogeology.
 - 13) Human toxicology.
 - 14) Environmental toxicology.
 - 15) Environmental impact assessment associated with land, water and air pollution.
 - 16) Contaminant transport and assessment of exposure pathways and risk.
 - 17) Remedial technologies and geotechnology.
 - 18) Risk communication in relation to contaminated land issues including demonstration of a high level of oral communication skills.
 - 19) Health and safety issues associated with field work for contamination land.
 - 20) Other relevant specialised competencies.
3. A statement demonstrating the applicant's understanding of the relevant provisions of the following.
 - 1) *Environmental Protection Act 1994*.
 - 2) *Integrated Planning Act 1997* and associated Regulations.
 - 3) draft *Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998*.
 - 4) *National Environmental Protection (Assessment of Site Contamination) Measure 1999*.
 - 5) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC / NHMRC 1992)*.
 - 6) Knowledge of policy, regulations and procedures which apply to environmental protection in the Queensland jurisdiction.
 4. Nomination of people or companies who will provide support to the applicant in the areas of (2) above in which the applicant is not an expert and information which demonstrates the applicant's experience in forming appropriate multidisciplinary teams for complex assessments.
 5. A copy of the professional liability insurance policy held by the applicant or on the applicant's behalf by the company employing the applicant, which demonstrates coverage to a value of \$5,000,000 or a higher amount which is sufficient to cover the risk associated with the contamination of a particular site.
 6. An example of a relevant report or study on contaminated site management and/or remediation previously undertaken by the applicant. The sample report should have been substantially prepared by the applicant and demonstrate a high level of written communication skills. The report should clearly support the statements made by the applicant under item (2) above. The role of the applicant in conducting the study (consultancy) and in preparing the report must be clearly indicated.
 7. Summary information about additional reports and studies undertaken may be presented indicating the title of the project, the role of the applicant and the purpose of the project.
 8. Nomination of two referees not directly associated with the applicant or the company employing the applicant who can confirm the applicant's experience in (2) above.

4 Assessment Criteria

This section details appropriate criteria which will be considered by the EPA in the assessment of applicants seeking acceptance for certification of contaminated site work.

4.1 Basis of Application

The applicant should be able to demonstrate extensive experience and a high level of expertise in the following core competencies:

- Contaminated site assessment and management.
- Soil sampling design and methodology.
- Interpretation of chemical data.
- Assessment of contaminant exposure pathways and risk.

In addition, the applicant should demonstrate an equivalent level of competence in at least one of the following areas and reasonable proficiency in the remaining areas:

- Groundwater sampling design and methodology.
- Assessment of impacts on groundwater and receptors from contaminated sites.
- Health risk assessment.
- Quality control/assurance procedures.

4.2 Legislative Understanding

The applicant must demonstrate an understanding of relevant legislation, regulations and guidelines relating to site contamination in the Queensland jurisdiction.

4.3 National Framework

The applicant should be able to demonstrate an understanding of the *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (ANZECC / NHMRC 1992) and the *National Environment Protection (Assessment of Site Contamination) Measure* and have a reasonable knowledge of the technical guidelines which apply in Australian jurisdictions.

4.4 Experience and Expertise

The applicant should be able to demonstrate expertise in, or identify access to relevant expertise in:

- Environmental chemistry.
- Soil science.
- Hydrogeology.
- Human toxicology.
- Environmental toxicology.
- Contaminant transport and assessment of exposure pathways and risk.
- Remedial technologies and geotechnology.

The applicant should demonstrate a sound ability to form and manage a multidisciplinary team for complex site assessment which contains the appropriate balance of expertise.

4.5 Professional Societies

The applicant must be a member of a prescribed organisation as listed in Schedule 8A of the *Environmental Protection Regulation 1998*.

4.6 Professional Experience

Applicants would be expected to have greater than five years direct experience in the assessment and management of contaminated sites of a wide range of complexity and additional related environmental experience for acceptance as professionals involved in preparation and certification of assessments of complex contaminated sites.

Applicants with less than 5 years contaminated land experience but with 10 or more years of relevant and related environmental experience including assessment and management of environmental issues involving complex sampling design and chemical or hydrogeological data collection and interpretation may be considered for certification of less complex contaminated sites e.g. fuel storage installations with no groundwater impacts, cattle dip or abrasive blasting sites with a limited zone of contamination and known contaminants.

4.7 Principles of Audits

The applicant should be able to demonstrate a thorough understanding of the principles of, and methods for, conducting environmental audits.

4.8 Literature

The applicant should be able to demonstrate up-to-date knowledge of relevant scientific, technical developments and regulatory literature relating to new legislation and court proceedings and decisions relating to contaminated sites.

5 Acceptance Processes and General Conditions

The EPA may consider establishment of a panel to assess applications. The panel will comprise of not less than three professionals including a suitably qualified chairperson. Panel members would be experienced in contaminated land assessment and management.

Apart from core competencies and other assessment criteria outlined in Section 4, the panel will consider all the relevant professional and environmental experience of each applicant. Following a panel assessment, the EPA may waive further panel assessments in subsequent applications when it is satisfied that the applicant has appropriate competencies relevant to the site contamination to be appraised.

The EPA will conduct independent audits and peer reviews of assessment work. In the event of proven malpractice by accepted persons, the EPA will revoke the acceptance of the third party reviewer.

Third Party Reviewer Terms of Reference

Disclaimer:

While this document has been prepared with care, it contains general information and does not profess to offer legal, professional or commercial advice. The Queensland Government accepts no liability for any external decisions or actions taken on the basis of this document. Persons external to the Environmental Protection Agency should satisfy themselves independently and by consulting their own professional advisors before embarking on any proposed course of action.

Approved by

SIGNED

Signature

15 Feb 2008

Date

Ian Wilson
Director, Technical Operations
Environmental Protection Agency

Enquiries:
Ecoaccess Customer Service Unit
Ph. 1300 368 326
Fax. (07) 3115 9600

Attachment B
Commissioning Form

Published on DES Disclosure Log
RTI Act 2009

For convenience, please fax back to 33510351 or scan and email to
info@mach1environmental.com.au

LETTER OF COMMISSION

I/we the undersigned agree to engage the services of Robin Wagland of MACH1 Environmental Pty Ltd to act as Third Party Reviewer (TPR) for the Indooroopilly site. This will be on the basis set out in our proposal number 10-001-006 dated 10/02/2010.

Contact details of person authorised to pay invoices.

Name: _____ Position: _____

Company: _____

ABN: _____

Address: _____

Phone: _____ Fax: _____

Email: _____

Signed this _____ day of _____ for and on
behalf of the Client by its duly authorised representative.

Signature

Name (Printed)

Title

Attachment C

MACH1 Standard Terms and Conditions

Published on DES Disclosure Log
RTI Act 2009

EMR

Lot:	1	Plan:	RP154325
Category:	MANAGED		
LGA:	Brisbane City Council		
Site Name:	FORMER SERVICE STATION-INDOOROOPIILLY		
Street:	280 MOGGILL ROAD		
Suburb:	INDOOROOPIILLY	Post Code:	4068
Owner:	CALILE MALOUF INVESTMENTS PTY LTD		
Address:	AS TTE & DJ FRAME HOLDINGS PTY LTD		
	AS TTE & M A LOVE HOLDINGS PTY LTD AS TTE		
	LEVEL 5, 141 QUEEN STREET		
	BRISBANE QLD		
Post Code:	4000		

Rec Type:	BP	ID:	896
Region:		Hist. ID:	140-34919
AMA/AN:			
Notified By:	DATA CONV	Notif. Rec'd:	
Entry Date:	27/06/1998	Last Altered Date:	18/06/2010
File:	BNE31862		
Officer:	BARRY		
Parcel Status:	D	Area:	7655 m2

External References

Hazardous Contaminants

Notifiable Activities

SERVICE STATIONS

Comments

Create Date	User ID	Corr No	Officer Name	Date Final	How Finalized
09/11/2007	LEWISAN				
STAGE 1 ENVIRONMENTAL SITE ASSESSMENT AND ADDITIONAL ENVIRONMENTAL SITE ASSESSEMENT REC'D 15/10/07 FOR COMMERCIAL/RETAIL DEVELOPMENT CNR KEATING STREET AND MOGGILL ROAD INDOOROOPIILLY - PROJECT NUMBER 06253A.					
18/06/2010	BAKERA				
UPDATED SITE AND OWNER DETAILS AS PER QVAS. SITE RECATEGORISED TO MANAGED					
18/06/2010	BAKERA				
REGENERATED NOTICE					
25/06/2010	TUARAD				
IPA APPLICATION (IPCL02115710) REC'D 13/05/2010 FROM CALLILE MALOUF INVESTMENTS FOR A MATERIAL CHANGE OF USE TO BE CARRIED OUT AT LOT 1 ON RP154325. CONCURRENCE AGENCY RESPONSE ISSUED 22/06/2010 STATES THAT CONDITIONS MUST ATTACH TO ANY DEVELOPMENT APPLICATION.					

Lot:	99	Plan:	SP244095
Category:			
LGA:	Brisbane City Council		
Site Name:			
Street:			
Suburb:		Post Code:	
Owner:			
Address:			
Post Code:			

Rec Type:	NP	ID:	96154
Region:		Hist. ID:	
AMA/AN:			
Notified By:		Notif. Rec'd:	
Entry Date:	26/07/2011	Last Altered Date:	
File:			
Officer:			
Parcel Status:	C	Area:	m2

External References

Hazardous Contaminants

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 1 PLAN : RP154325 FILE REF : BNE31862 PRINTED: 14/10/2019

DATE OF EFFECT : 17/06/2010

1.0 SUMMARY OF CONTAMINATION

The subject site is defined as Lot 1 on RP154325 and is located at 280 Moggill Road, Indooroopilly. The site has historically been used as a car yard and service station.

The following maximum concentrations have been found in soil samples to a depth of 2.2m:

Contaminant	Maximum Concentration (mg/kg)
Lead	1,780
Zinc	2,650
Cadmium	12

This Site Management Plan (SMP) includes a Remediation Action Plan (RAP) to delineate and manage the identified contamination at the site, including off-site disposal of contaminated materials during site excavation works associated with the construction of a proposed basement car park.

2.0 OBJECTIVES OF THE SITE MANAGEMENT PLAN

The objective of the SMP is to manage the on-site contamination to protect human health and the environment.

3.0 ACHIEVEMENT AND MAINTENANCE OF OBJECTIVES

3.1 Responsibility. The owner of the site (as defined in the *Environmental Protection Act 1994 [EP Act]*) is required to ensure that this SMP and any variations to the SMP approved or required by the administering authority are complied with. The obligations and conditions set out in this SMP bind the owner, from time to time, of the land.

3.2 Third Party Reviewer. A Third Party Reviewer (TPR) approved by the Administering Authority and operating in accordance with the Administering Authority's Terms of Reference for TPR (February 2008) must be appointed for the duration of the site assessment and remediation.

3.3 Site Use. Providing the conditions of this approved SMP are complied with, the site is currently suitable for commercial / industrial land use. Following implementation of the attached RAP, it is proposed that the site will be suitable for any land use. The new use of the site must not commence until a Suitability Statement has been issued by the Administering Authority.

3.4 Provision of SMP to Appropriate Persons. The site owner must provide all persons involved in

building design and planning and all contractors and lessees conducting building and/or excavation works with a copy of the SMP prior to the commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

3.5 Surface Capping and Protective Barriers. Prior to redevelopment of the site, the existing capping layer consisting of a concrete slab, bitumen/asphalt paving on 150mm compacted roadbase, or compacted low permeability soil to a minimum depth of 0.5m is to be maintained over the two areas defined on Figure 1 (the Former Service Station Area and the Fill Area) to maintain a barrier between the contamination and site users. The capping layer is to be maintained in sound condition at all times.

3.6 Underground Services. Where underground service trenches are constructed in contaminated areas, the trenches must be surrounded by a minimum of 0.3m of uncontaminated fill for minor services (<100 mm in diameter), and 0.5m of uncontaminated fill for services greater than 100 mm in diameter.

3.7 Soil Excavation and Removal. Any soil excavated on the site must be assessed for contaminants of concern to determine if the material is contaminated and to identify appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from any excavation must be managed by a suitably qualified and experienced person in accordance with Section 381 of the EP Act. Contaminated soil must not be removed off-site without a disposal permit in accordance with Section 424 of the EP Act.

3.8 Unexpected Contamination. If, during any site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected are observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within two (2) business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

3.9 General Environmental Protection. All earthworks are to comply with general environmental protection measures to avoid unwanted migration and deposition of soil. These measures include the control of dust, noise, stormwater runoff, sediment, erosion, spillage from haulage trucks and odour releases involving the handling or movement of contaminated material.

3.10 Workplace Health and Safety. A Workplace Health and Safety Plan (WH&S plan), which conforms to the requirements of the *Workplace Health and Safety Act 1995* is to be developed for any site excavation works in contaminated areas. The WH&S plan must specifically address contaminants of concern as identified in Section 1.0 of this SMP and provide appropriate safety measures for site workers and the general public.

4.0 MONITORING AND REPORTING

A biennial inspection is to be undertaken to ensure that capping and protective barriers remain in sound condition at all times in accordance with Section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, validation testing, disposal permits and site management plan compliance for review by the administering authority from time to time.

The biennial period is to commence from the effective date of this plan.

This Site Management Plan (SMP) has been developed to manage site contamination risks present at the issue date. Subsequent uses of the site may result in the need to review the plan.

This SMP makes reference to plan attachments that are available from the Administering Authority if required.

This SMP makes reference to an appendix titled Remediation Action Plan (RAP) that is available the Administering Authority if required.

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APPENDIX 1

Remediation Action Plan

Lot 1 on RP154325

1.0 INTRODUCTION

This remediation Action Plan (RAP) has been prepared for the above land parcel located at 280 Moggill Road, Indooroopilly. The property occupies the traffic island at the intersection of Moggill Road, Coonan Street and Keating Street, Indooroopilly. The site is approximately triangular in shape with road frontages to Moggill Road (western boundary), Coonan Street (eastern boundary) and Keating Street (southern boundary) as shown on attached Figure 1. The proposed redevelopment will include substantial basement car parking to 9m below road level and will require the land to be suitable for any land use.

Historical filling of the site has resulted in soil contamination being placed across some parts of the site. This RAP has been prepared in accordance with the Queensland Department of Environment and Resource Management's (DERM's) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, 1998* and accepted industry standards to provide a technical framework for the remediation and management of contaminated soil on the site.

The northern corner of the site was used as a service station from the late 1950s to the mid 1970s (as shown on Figure 1). Since the mid 1970s the site has been used as a car sales yard. It is understood that the underground fuel tanks, bowzers and product supply lines were removed at the time of decommissioning the service station. The majority of the site has been excavated into or constructed on top of rock with the exception of an area in the south western corner of the site (see Figure 1) where the site surface was leveled by the placement of fill from unknown sources. This fill has been found to contain concentrations of metals in excess of accepted clean fill criteria.

1.1 Site Overview

The site is bounded by roads with commercial properties beyond to the south, east and west with residential properties to the north. The site occupies an area of approximately 7,655m².

1.2 Purpose of the RAP

The purpose of the RAP is to provide the framework for remediation and redevelopment works within the areas identified as contaminated in order to manage potential risks to human health and the environment.

1.3 Objectives

The objectives of the RAP are:

- to provide a strategy to manage contamination on the site in a manner that protects human health and the environment and which ensures that the site is suitable for future medium/high density residential land use;

- to ensure Regulatory Compliance during remediation works including appropriate removal of soils;
- to complete the program expediently; and
- to comply with the principles of reducing waste to landfill supported by the Queensland State Government.

1.4 Regulatory Compliance

This RAP has been prepared in accordance with the requirements of the DERM *Draft Guidelines for the Assessment and Management of Contaminated Sites in Queensland, 1998* and those of the Third Party Reviewer (TPR) appointed for the site.

1.5 Site Management Plan

This RAP is an attachment to a Site Management Plan (SMP) for Lot 1 on RP154325 governing the proposed management and remediation of site contamination on the site in accordance with Section 402 of the *Environmental Protection Act, 1994*. The SMP outlines the overall management objectives and strategies as well as the ongoing management and monitoring requirements should the works described in this RAP not be completed.

1.6 Third Party Reviewer (TPR)

A DERM approved TPR for the project has been commissioned for the site. The TPR's role is to approve the proposed remediation and management strategies, monitor site works for compliance with DERM requirements and ultimately sign-off that the remediation and management objectives have been met and that the site is suitable for any land use following completion of the works.

2.0 BACKGROUND

2.1 Topography

The current site ground level at the site slopes from the south eastern corner (approximately 30m above Australian Height Datum [m AHD]) and the north eastern corner (approximately 31m AHD) towards the south western corner (approximately 26m AHD) at a variable gradient modified by the site surface levels established for the existing car yard.

2.2 Geology

Reference to the Geological Survey of Queensland's 1:31,680 Series City of Brisbane Sheet, indicates that the site is located in an area mapped as underlain by Bunya Phyllite, which comprises phyllite with minor phyllonite.

2.3 Hydrogeology

A study of the hydrogeology of the site has not been conducted, however, groundwater flow beneath the site is anticipated to be to the south, toward the Brisbane River located approximately 800m away. No assessment of groundwater was undertaken as part of Butler Partners' investigations, however, it is anticipated that depth to groundwater below the site is likely to be in the order of 25m to 30m.

2.4 Previous Investigations

This work follows investigative work undertaken by Butler Partners Pty Ltd, which has been reported in the following:

Stage 1 Environmental Site Assessment
Commercial / Retail Development
Cnr Keating Street and Moggill Road, Indooroopilly
Dated March 2007

Additional Environmental Site Assessment
Commercial / Retail Development
Cnr Keating Street and Moggill Road, Indooroopilly
Dated April 2007
Response to Information Request of 14 November 2007
Commercial Development
Cnr Keating Road and Moggill Road, Indooroopilly
Dated 30 April 2010

2.5 Current Impact

Results from investigations of the site have indicated that the various soil contaminants requiring remediation or management are confined within the fill materials. All contaminants detected above the relevant criteria are not typically considered to be mobile nor present a vapour risk to human health.

Based on information currently available, the specific contaminants requiring management are as follows:

- Lead;
- Zinc; and
- Cadmium;

The distribution of these contaminants is shown on Figure 2.

Impact to groundwater underlying the site is considered unlikely due to its occurrence at depths significantly greater than the base of the fill materials (possibly of the order of 25m to 30m below site surface level).

This RAP provides details of the proposed methods to address contamination across the site.

3.0 ENVIRONMENTAL GUIDELINES

The purpose of this RAP is to provide guidelines for the redevelopment works to be undertaken. It is intended that the site be redeveloped in a manner such that it will be suitable for the proposed mixed use land uses. The remediation criteria are based on the Queensland DERM's *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, May 1998* (The Guidelines) and *Draft Investigation Thresholds for Underground Storage Tanks – January 1999* and the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council).

3.1 Clean Fill Criteria

The clean fill criteria for the redevelopment works are as follows:

Heavy Metals

Lead	300mg/kg
Zinc	400mg/kg
Cadmium	3mg/kg

Organic Contaminants

TPH

C ₆ -C ₉	100mg/kg
C ₁₀ -C ₁₄	100mg/kg
C ₁₅ -C ₂₈	1,000mg/kg
C ₂₉ -C ₃₆	1,000mg/kg
Benzene	1mg/kg
BTEX	7mg/kg
Total PAH	20mg/kg
Benzo(a)pyrene	1mg/kg

3.2 Imported Fill

Imported fill may be required if the excavated soil is not suitable or if filling quantities exceed excavated quantities, for backfilling behind basement walls and landscaping purposes. This material must meet the clean criteria identified in the Environmental Guideline Section and the frequency of sampling will depend on the source of the imported fill. If fill is sourced from a licensed quarry, no sampling will be required.

4.0 REDEVELOPMENT STRATEGIES

4.1 Redevelopment Goals

The redevelopment goal is to manage contamination by removal off-site, such that at the completion of redevelopment works, the site will be suitable for any land use, as provided in Section 1.3 of this RAP and in accordance with the SMP.

4.2 Extent of Contamination

Based on previous investigation results, contamination is likely to be limited to fill within the area of the site shown on Figure 1. However, additional investigation is required in the former service station area during demolition and early earthworks on the site. These additional investigations are described in Section 5.2 below.

4.3 Suitably Qualified Persons to Conduct/Supervise Works

A person qualified in accordance with S.381 and S.395 of the EP Act must conduct all investigations, supervise all remediation works and compile report/s required to remediate the site.

4.4 Strategies Applied

Considering the majority of the site area is to be excavated to form a basement carpark, it is likely that excavation and removal of contaminated material will be the primary remediation strategy adopted for the site. Soil will be removed utilising existing data.

No contaminated soil will be removed from site without a Disposal Permit issued pursuant to Section 424 of the Environmental Protection Act 1994.

5.0 REMEDIATION PROGRAM

5.1 Overview

Excavation of contaminated soil within redevelopment areas will occur concurrently with bulk earthworks associated with the redevelopment works. A Disposal Permit will be obtained prior to any off-site removal of contaminated soil. Excavated contaminated soil will be loaded into trucks, covered and disposed to an approved landfill in accordance with the conditions of the approved Disposal Permit.

All remediation and validation works (including excavation and disposal of contaminated material) must be supervised by a person suitably qualified in accordance with Section 381 of the EP Act.

5.2 Further Assessment

Further assessment is required in the area of the former service station (shown on Figure 1) to identify and locate former infrastructure areas e.g. underground fuel storage tank pits, trenches for product transfer lines and the footings of bowsers. This will be undertaken following the demolition of above ground structures and the removal of concrete slabs and underlying sub-grade fill. Once this is complete the soils across the area will be stripped back and stockpiled separately. It is anticipated that the outline of the former excavations will be visible at shallow depth, once they can be clearly identified, any fill used to backfill them will be excavated, segregated and stockpiled for sampling. The base and walls of these excavations will be inspected and depending upon whether they are in rock or in soil, they will be photographed and sampled (where soil is present). The rate of sampling will be in accordance with DERM's *Draft Investigation Thresholds for Underground Storage Tanks – January 1999*. All collected samples will be field screened for Volatile Organic Compounds (VOCs) with a Photoionisation Detector (PID) and selected samples dispatched to the laboratory for a selection of TPH, BTEX, Lead and PAH analysis.

Depending upon the results of the inspection and/or sampling of the excavations, additional material may need to be removed off-site to landfill under a DERM issued Disposal Permit for disposal or treatment..

The stockpiled backfill material will be sampled at a rate of at least 1 sample per 50m³ or as agreed with the TPR. Samples will be analysed for at least heavy metals, TPH, BTEX and PAH. Depending upon the results of these analyses, this material may need to be removed off-site to landfill under a DERM issued Disposal Permit.

6.0 WORK PROCEDURES

This section of the RAP provides an overview of the procedures to be undertaken during redevelopment works.

Tracking and Documentation

Movement of materials both on-site and off site will be tracked as follows:

- a manifest will be maintained for every truckload of contaminated soil removed from site; the landfill will provide a weighbridge print-out for the received contaminated soil;
- weighbridge print outs will be compared with the manifest of contaminated soil removed from site; and
- a manifest will be maintained for every truckload of contaminated soil relocated on-site (NOTE: these details will be included in the Validation report for the site).

7.0 OPERATIONAL CONTROL

The contractor responsible for the remediation works shall prepare a Construction Environmental Management Plan (CEMP). Specific issues to be addressed are discussed in the following sections.

7.1 Stormwater Management

Remediation works must comply with requirements for stormwater management as outlined in Schedule B(9) of the NEPM. This includes stockpiling excavated soil in a manner that shall prevent contamination from being transported off-site by stormwater. In general, this will be managed by bunding stockpiles, diverting stormwater away from disturbed areas, placement of silt fence around the site perimeter.

Management of the stormwater shall be undertaken in accordance with Brisbane City Council (BCC) Stormwater Management Codes entailing soil and sediment erosion issues and runoff consideration.

7.2 Soil and Sediment Control

Soil and sediment control will be managed in accordance with BCC Erosion and Sediment Control Standard which assesses land-disturbing activities against specific performance criteria. Key issues from the standard for the specific development include:

- the need to plan carefully for adequate erosion and sediment control by preparing a separate Erosion and Sediment Control (ESC) Plan setting out the required measures for the site over all stages of development/construction;
- the ESC Plan must address all key phases of construction, not just one point in time; and
- develop plans showing the layout and sequencing of controls including bulk earthworks.

Measures to limit the generation of sediment runoff from on-site soil stockpiles include:

- covering stockpiles to limit erosion (as well as odour and visual concerns); and
- surround stockpiles by an appropriate sediment fence to limit ability to become mobile.

The requirements for the management of sediment and soil described in Schedule B(9) of the NEPM (from which the above control measures are drawn) must be complied with during remedial works.

7.3 Groundwater

Groundwater is not expected to be encountered during the excavation works and/or for the placement of shallow services. Should trenches require de-watering due to stormwater run off entering the trenches or seepage from perched water, adequate water samples must be collected to characterise the water prior to off-site disposal. The characterisation of the water will determine the fate of either disposal stormwater in accordance with BCC water quality guidelines, to sewer (NOTE: any disposal to sewer will require an approved Trade Waste Permit from BCC) or disposal to a licensed facility as liquid waste.

7.4 Noise Control

The potential for noise and vibration impacts from the remediation works will result from the:

- preparation of the site;
- movement of construction vehicles as they traffic local roads;
- the operation of plant and activities on site, and
- traffic movements on public roads associated with the site.

In relation to noise emissions from the site, the sensitive receptors that may potentially be impacted by the site works include:

- the residential properties to the north west; and
- neighbouring light industrial and commercial facilities.

Remediation works will be performed in a manner to minimise unnecessary noise. All works will be carried out in accordance with BCC Regulatory limits for noise and vibration and the *Environmental Protection Regulation 1998*.

Noise mitigation measures which will be implemented at the site include:

- all remediation equipment used will comply with noise attenuation regulatory standards;
- monitoring of equipment regarded by the site superintendent as being excessively noisy. If equipment is found to be excessively noisy, the contractor will be instructed to modify the equipment or remove it from the site;
- temporary acoustic barriers may be erected where required to minimize specific noise problems;
- preparation of a noise management plan (included in the CEMP) prior to construction to ensure all staff understand noise control measures. The management plan includes periodic monitoring to ensure continued compliance with the site's development conditions and operating licence;
- a communications program will be developed to keep the community informed of activities;
- investigation and response to any complaints received; and
- construction activities will be conducted in accordance with AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

7.5 Dust Control

Emissions resulting from the remedial works will consist primarily of particulate emissions generated by excavation and soil disturbance activities. Monitoring of the level of airborne particulates as well as good on-site management practices and controls will greatly minimise off-site impacts.

Compliance targets for dust levels will be selected based upon occupational health and safety levels, an assessment of risks for boundary receptors and review of local Air Quality Planning Scheme Policy. Compliance with Schedule B(9) of the NEPM, must be achieved, which is in addition to BCC and DERM requirements.

7.6 Odour Control

The remedial works are not considered likely to generate significant offensive odours to off site receptors.

In the event that offensive odours at the excavation face will be left exposed for periods greater than 24 hours, a non-odorous cover material shall be placed over the exposed odour producing area. This cover material may comprise other fill material recovered at the site, mulch or other appropriate cover or odour masking material.

To minimise offensive odours resulting from odorous stockpiles, stockpiles should be covered with mulch or other appropriate cover to ameliorate the spread of odours. Measures such as moisture conditioning, misting sprays, odorants and masking agents may also be used to manage stockpile odours, should the need arise.

7.7 Public Consultation

Community consultation with regard to the proposed remediation process is not considered to be a primary concern due to the current nature and location of the site. However, in accordance with normal construction practice, a public complaints system should be established including the provision of a contact number on boundary fences and a register of complaints maintained on site.

Should significant issues be raised through the public complaints system, community consultation should be implemented to address these issues.

The potential issues of community concern that may arise during the remediation at the site may include:

- increased traffic;
- noise;
- air quality and dust generation; and
- general concerns arising from the observed use of personnel protective equipment by remediation workers.

Appropriate measures to address the public consultation may include an information sheet distributed to local premises, community information sessions and/or appropriate signage. We note these processes may be required for development elements other than remediation.

7.8 Public Complaints System

Public complaints will be dealt with through direct contact with the complainant. All complaints will be acted on immediately with investigations into the cause of the concern and prompt action taken to rectify the problem.

8.0 VALIDATION PROGRAM

8.1 Validation Soil Sampling

Validation of clean materials located below the impacted fill material will be required on a 10 metre grid, or at 5 metre centres along linear excavations, such as service trenches and walls. Where more than one soil strata or geological unit is present, each material will be validated. Areas of exposed rock will be validated by visual assessment and photographic evidence undertaken on a 20m x 20m grid. Note: Validation sampling requirements may be amended with TPR approval.

Validation samples will be analysed for analytes based on the contaminant of concern and will comprise a selection of metals (Arsenic, Cadmium, Chromium, Copper, Mercury, Lead, Nickel and Zinc). PAH, TPH, BTEX, organochlorine pesticides and asbestos may also be analysed as appropriate in addition to analytes commensurate with identified contamination located within specific areas, if other than those listed.

Any imported fill will also be sampled to demonstrate compliance with the clean fill criteria. The source of all imported materials will be documented and assessed. Imported fill will be required to be sampled at a rate of 1 sample per 50m³ to confirm compliance with the clean fill criteria or at a rate agreed with the TPR. However, if imported fill is a quarry product or can be verified to be from a clean source, then sampling may not be required.

8.2 Sample Dispatch and Documentation

Samples will be placed in appropriately pre-treated sample jars, placed in an insulated container on ice and submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis. Sample movements will be documented using appropriate Chain of Custody forms.

8.3 Backfilling

Where required, areas from which material has been removed will be backfilled with clean fill following successful validation of the areas. Backfill material will be compacted to meet the engineering requirements of ongoing and future use of the area.

8.4 Quality Assurance Program

Quality assurance sampling will be conducted as outlined in AS4482.1-2005, namely

- collection and analysis of one blind replicate sample per twenty primary samples analysed (submitted to primary analysing laboratory under an individual sample name not identifiable with the primary sample);
- collection and analysis of one split sample per twenty primary samples analysed (submitted to secondary analysing laboratory under the same sample name as the primary sample);

- one rinsate sample per day will be collected to ensure there is no cross-contamination of substances from the sampling equipment used; and
- one trip blank per Esky if BTEX compounds are analysed.

Further quality control techniques that will be used include submission of a chain of custody documentation to track sample movements.

9.0 DECONTAMINATION PROCEDURES

Decontamination procedures for sampling equipment, personnel and the general site must be in accordance with the Australian Standard AS 4482.1-2005 and the NEPM guidelines (Schedule B(9)).

10.0 HEALTH AND SAFETY

A Workplace Health and Safety Plan (WH&S plan), which conforms to the requirements of the *Workplace Health and Safety Act 1995* will be developed for any site sampling or excavation works in potentially or known contaminated areas. The WH&S plan will specifically address contaminants of concern identified during investigation works on the

11.0 REPORTING REQUIREMENTS

A validation report must be prepared by a person qualified in accordance with S.5.3 of this RAP, and submitted to the TPR for certification prior to the DERM Contaminated Land Unit (CLU). This must occur within 45 days of the completion of remediation and validation works. The report must be prepared and submitted in accordance with the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998*, the NEPM and the EP Act.

The report must document remediation and validation program activities including the results of any further excavation and/or validation required by the results of the initial validation analysis, an evaluation of the results against the remedial goals and an investigation demonstrating compliance with the conditions of this RAP.

The report must also include the results of the QA/QC program, and copies of documentation validating the appropriate handling, disposal and treatment of contaminated soil and water in accordance with DERM requirements. The validation report must be submitted to the DERM for review in accordance with the EP Act and the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998*.

If impact remains on the site, then an amended SMP for the site must be prepared and submitted with the validation report.

If requested by the DERM, progress reporting must be finalised and submitted to the DERM within one business day.

12.0 STATEMENT OF SUITABILITY

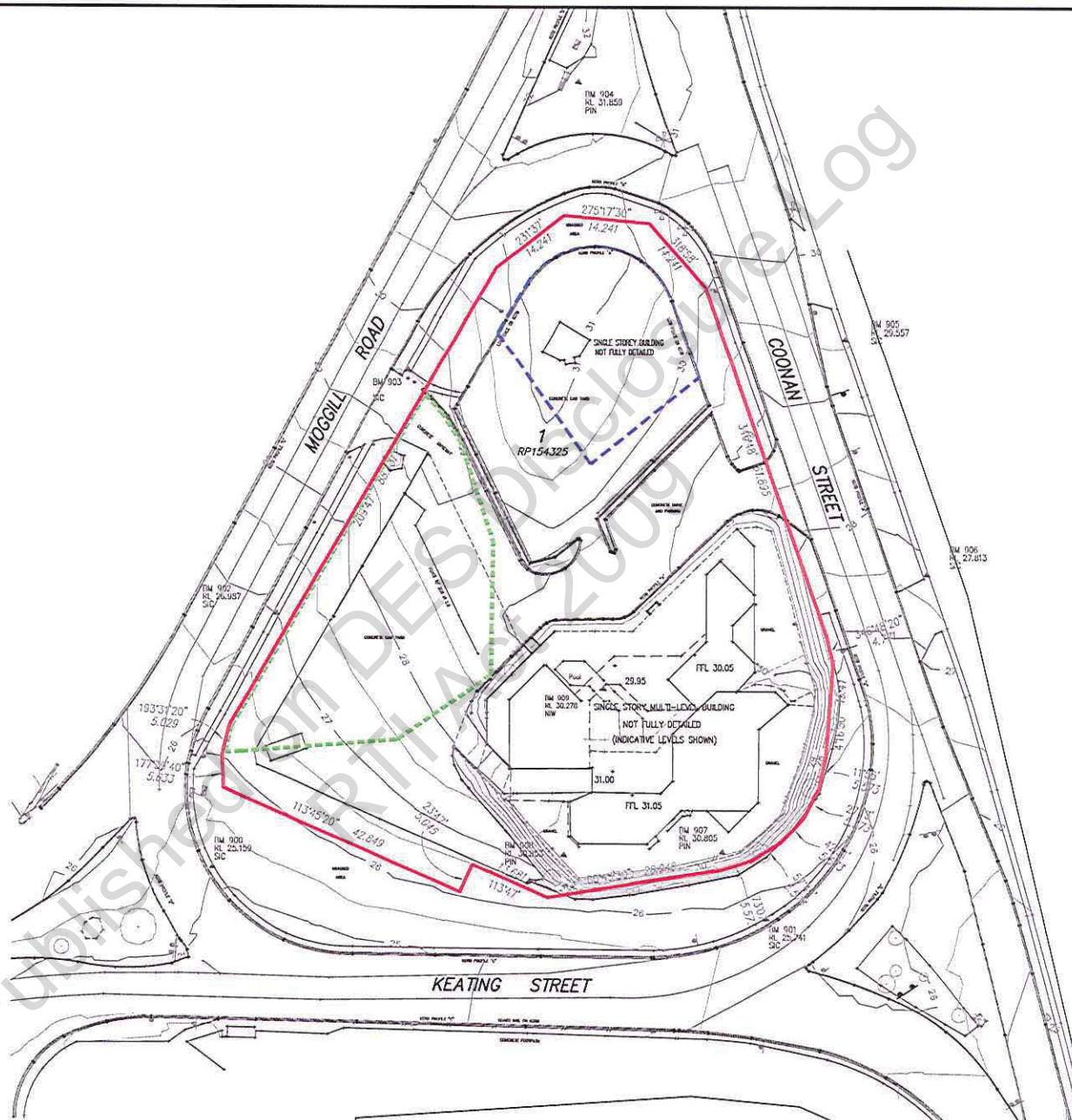
Prior to commencement of the land use proposed by the material change of use, a Statement of Suitability must be obtained from the DERM. The Statement of Suitability must specify

that the site is will remain on the EMR and is suitable for the intended use(s) with an approved SMP or the site can be removed from the EMR, as required.

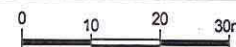
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LEGEND

- Site Boundary
- Service Station Area
- Fill Area



SITE MANAGEMENT PLAN / REMEDIAL ACTION PLAN CORNER KEATING STREET AND MOGGILL ROAD, INDOOROOPILLY SITE AREAS REQUIRING MANAGEMENT / REMEDIATION

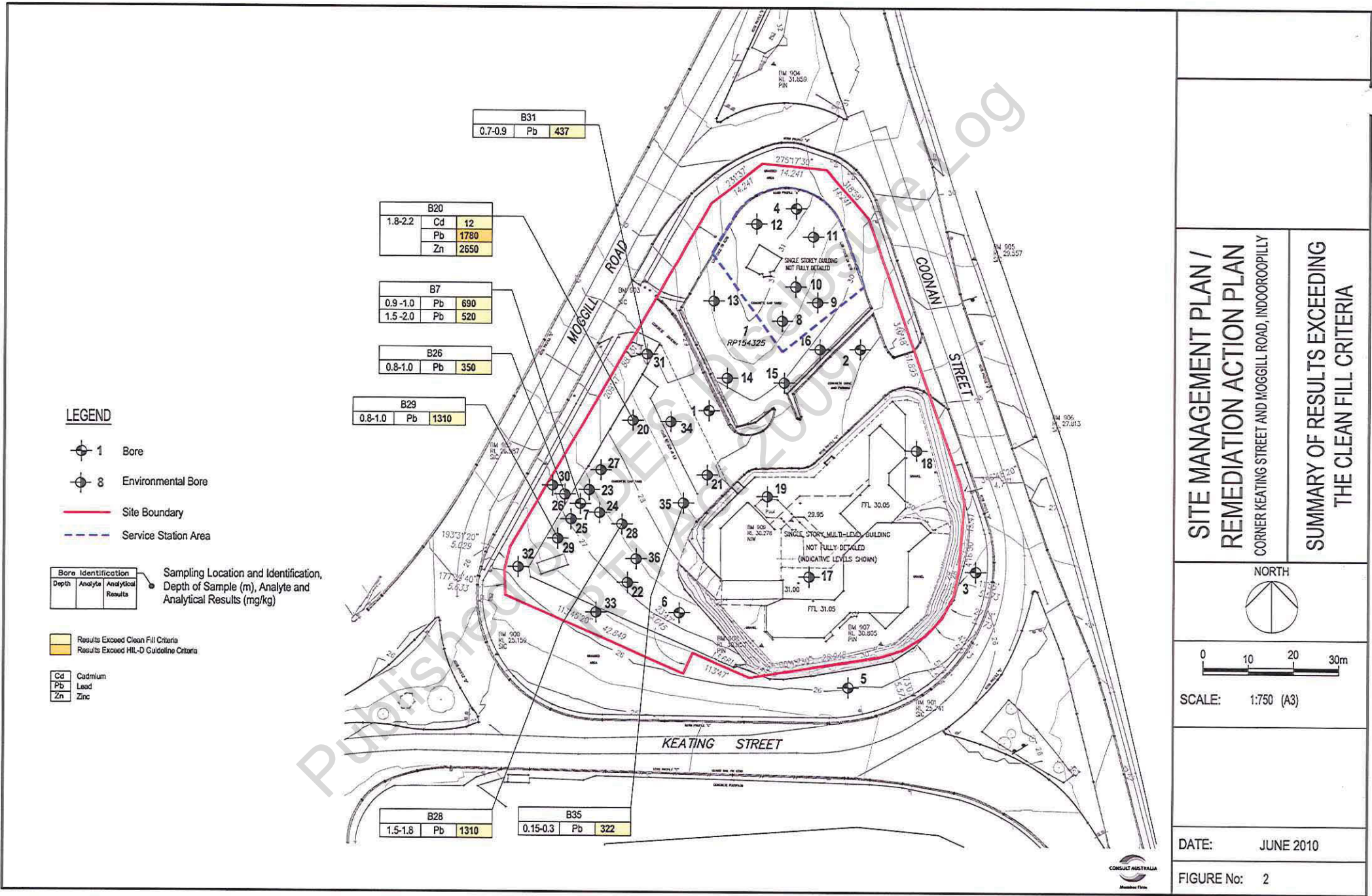


SCALE: 1:750 (A3)

DATE: JUNE 2010

FIGURE No: 1





18/6/2010

Dear Registry,

Please remove Lot 1 RP154325 off the EMR.

TPR:

Robin Wagland
MACH1 Environmental Pty Ltd
PO Box 320
FERNY HILLS QLD 4055

Owner:

Calile Malouf Investments Pty Ltd
Level 5, 141 Queen Street,
BRISBANE QLD 4000

Applicant:

sch4p4(6) Personal inf

Butler Partners Pty Ltd
PO Box 2267
FORTITUDE VALLEY QLD 4006

Studies:

\line

Site Management Plan and Remediation Action Plan for Lot 1 on RP154325 at 280 Moggill Road, Indooroopilly, Third Party Reviewer Letter, prepared by MACH 1 Environmental Pty Ltd, dated 11 June 2010.

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Response to Information Request of 14 November 2007, Commercial Development, Additional Environmental Site Assessment, Commercial / Retail Development, Cnr Keating Street and Moggill Road, Indooroopilly, prepared by Butler Partners Pty Ltd, dated 30 April 2010 (Project No 006-253B)

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Additional Environmental Site Assessment, Commercial / Retail Development, Cnr Keating Street and Moggill Road, Indooroopilly, prepared by Butler Partners Pty Ltd, dated April 2007 (Project No. 06253A)

\line\line

Stage 1 Environmental Site Assessment, Commercial / Retail Development, Cnr Keating Street and Moggill Road, Indooroopilly, prepared by Butler Partners Pty Ltd, dated March 2007 (Project No. 06253A)

\line\line

Suitable Use:

\line

Suitable for industrial/commercial use including premises such as shops, offices and industrial buildings (but excluding uses where regular soil access by children is possible).

Thanks

Kim Barry

This document can be found at H:/Contaminated
Land/Studies/BNE31862/Studies.doc

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3.2 Site Use. Providing the conditions of this approved SMP are complied with, the site is currently suitable for commercial / industrial land use. Following implementation of the attached RAP, it is proposed that the site will be suitable for any land use. The new use of the site must not commence until a Suitability Statement has been issued by the Administering Authority.

3.3 Provision of SMP to Appropriate Persons. The site owner must provide all persons involved in building design and planning and all contractors and lessees conducting building and/or excavation works with a copy of the SMP prior to the commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

3.4 Surface Capping and Protective Barriers. Prior to redevelopment of the site, the existing capping layer consisting of a concrete slab, bitumen/asphalt paving on 150mm compacted roadbase, or compacted low permeability soil to a minimum depth of 0.5m is to be maintained over the two areas defined on Figure 1 (the Former Service Station Area and the Fill Area) to maintain a barrier between the contamination and site users. The capping layer is to be maintained in sound condition at all times.

3.5 Underground Services. Where underground service trenches are constructed in contaminated areas, the trenches must be surrounded by a minimum of 0.3m of uncontaminated fill for minor services (<100 mm in diameter), and 0.5m of uncontaminated fill for services greater than 100 mm in diameter.

3.6 Soil Excavation and Removal. Any soil excavated on the site must be assessed for contaminants of concern to determine if the material is contaminated and to identify appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from any excavation must be managed by a suitably qualified and experienced person in accordance with Section 381 of the EP Act. Contaminated soil must not be removed off-site without a disposal permit in accordance with Section 424 of the EP Act.

3.7 Unexpected Contamination. If, during any site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected are observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within two (2) business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

3.8 General Environmental Protection. All earthworks are to comply with general environmental protection measures to avoid unwanted migration and deposition of soil. These measures include the control of dust, noise, stormwater runoff, sediment, erosion, spillage from haulage trucks and odour releases involving the handling or movement of contaminated material.

3.9 Workplace Health and Safety. A Workplace Health and Safety Plan (WH&S plan), which conforms to the requirements of the *Workplace Health and Safety Act 1995* is to be developed for any site excavation works in contaminated areas. The WH&S plan must specifically address contaminants of concern as identified in Section 1.0 of this SMP and provide appropriate safety measures for site workers and the general public.

4.0 MONITORING AND REPORTING

A biennial inspection is to be undertaken to ensure that capping and protective barriers remain in sound condition at all times in accordance with Section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, validation testing, disposal permits and site management plan compliance for review by the administering authority from time to time.

The biennial period is to commence from the effective date of this plan.

This Site Management Plan (SMP) has been developed to manage site contamination risks present at the issue date. Subsequent uses of the site may result in the need to review the plan.

This SMP makes reference to plan attachments that are available from the Administering Authority if required.

This SMP makes reference to an appendix titled Remediation Action Plan (RAP) that is available the Administering Authority if required.

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APPENDIX 1

Remediation Action Plan

Lot 1 on RP154325

1.0 INTRODUCTION

This Remediation Action Plan (RAP) has been prepared for the above land parcel located at 280 Moggill Road, Indooroopilly. The property occupies the traffic island at the intersection of Moggill Road, Coonan Street and Keating Street, Indooroopilly. The site is approximately triangular in shape with road frontages to Moggill Road (western boundary), Coonan Street (eastern boundary) and Keating Street (southern boundary) as shown on attached Figure 1. The proposed redevelopment will include substantial basement car parking to 9m below road level and will require the land to be suitable for any land use.

Historical filling of the site has resulted in soil contamination being placed across some parts of the site. This RAP has been prepared in accordance with the Queensland Department of Environment and Resource Management's (DERM's) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, 1998* and accepted industry standards to provide a technical framework for the remediation and management of contaminated soil on the site.

The northern corner of the site was used as a service station from the late 1950s to the mid 1970s (as shown on Figure 1). Since the mid 1970s the site has been used as a car sales yard. It is understood that the underground fuel tanks, bowzers and product supply lines were removed at the time of decommissioning the service station. The majority of the site has been excavated into or constructed on top of rock with the exception of an area in the south western corner of the site (see Figure 1) where the site surface was leveled by the placement of fill from unknown sources. This fill has been found to contain concentrations of metals in excess of accepted clean fill criteria.

1.1 Site Overview

The site is bounded by roads with commercial properties beyond to the south, east and west with residential properties to the north. The site occupies an area of approximately 7,655m².

1.2 Purpose of the RAP

The purpose of the RAP is to provide the framework for remediation and redevelopment works within the areas identified as contaminated in order to manage potential risks to human health and the environment.

1.3 Objectives

The objectives of the RAP are:

- to provide a strategy to manage contamination on the site in a manner that protects human health and the environment and which ensures that the site is suitable for future medium/high density residential land use;
- to ensure Regulatory Compliance during remediation works including appropriate removal of soils;
- to complete the program expediently; and
- to comply with the principles of reducing waste to landfill supported by the Queensland State Government.

1.4 Regulatory Compliance

This RAP has been prepared in accordance with the requirements of the DERM *Draft Guidelines for the Assessment and Management of Contaminated Sites in Queensland, 1998* and those of the Third Party Reviewer (TPR) appointed for the site.

1.5 Site Management Plan

This RAP is an attachment to a Site Management Plan (SMP) for Lot 1 on RP154325 governing the proposed management and remediation of site contamination on the site in accordance with Section 402 of the *Environmental Protection Act, 1994*. The SMP outlines the overall management objectives and strategies as well as the ongoing management and monitoring requirements should the works described in this RAP not be completed.

1.6 Third Party Reviewer (TPR)

A DERM approved TPR for the project has been commissioned for the site. The TPR's role is to approve the proposed remediation and management strategies, monitor site works for compliance with DERM requirements and ultimately sign-off that the remediation and management objectives have been met and that the site is suitable for any land use following completion of the works.

2.0 BACKGROUND

2.1 Topography

The current site ground level at the site slopes from the south eastern corner (approximately 30m above Australian Height Datum [m AHD]) and the north eastern corner (approximately 31m AHD) towards the south western corner (approximately 26m AHD) at a variable gradient modified by the site surface levels established for the existing car yard.

2.2 Geology

Reference to the Geological Survey of Queensland's 1:31,680 Series City of Brisbane Sheet, indicates that the site is located in an area mapped as underlain by Bunya Phyllite, which comprises phyllite with minor phyllonite.

2.3 Hydrogeology

A study of the hydrogeology of the site has not been conducted, however, groundwater flow beneath the site is anticipated to be to the south, toward the Brisbane River located approximately 800m away. No assessment of groundwater was undertaken as part of Butler Partners' investigations, however, it is anticipated that depth to groundwater below the site is likely to be in the order of 25m to 30m.

2.4 Previous Investigations

This work follows investigative work undertaken by Butler Partners Pty Ltd, which has been reported in the following:

Stage 1 Environmental Site Assessment
Commercial / Retail Development
Cnr Keating Street and Moggill Road, Indooroopilly
Dated March 2007

Additional Environmental Site Assessment
Commercial / Retail Development
Cnr Keating Street and Moggill Road, Indooroopilly
Dated April 2007

Response to Information Request of 14 November 2007
Commercial Development
Cnr Keating Road and Moggill Road, Indooroopilly
Dated 30 April 2010

2.5 Current Impact

Results from investigations of the site have indicated that the various soil contaminants requiring remediation or management are confined within the fill materials. All contaminants detected above the relevant criteria are not typically considered to be mobile nor present a vapour risk to human health.

Based on information currently available, the specific contaminants requiring management are as follows:

- Lead;
- Zinc; and
- Cadmium;

The distribution of these contaminants is shown on Figure 2.

Impact to groundwater underlying the site is considered unlikely due to its occurrence at depths significantly greater than the base of the fill materials (possibly of the order of 25m to 30m below site surface level).

This RAP provides details of the proposed methods to address contamination across the site.

3.0 ENVIRONMENTAL GUIDELINES

The purpose of this RAP is to provide guidelines for the redevelopment works to be undertaken. It is intended that the site be redeveloped in a manner such that it will be suitable for the proposed mixed use land uses. The remediation criteria are based on the Queensland DERM's *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland, May 1998* (The Guidelines) and *Draft Investigation Thresholds for Underground Storage Tanks – January 1999* and the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council).

3.1 Clean Fill Criteria

The clean fill criteria for the redevelopment works are as follows:

Heavy Metals

Lead	300mg/kg
Zinc	400mg/kg
Cadmium	3mg/kg

Organic Contaminants

TPH

C ₆ -C ₉	100mg/kg
C ₁₀ -C ₁₄	100mg/kg
C ₁₅ -C ₂₈	1,000mg/kg
C ₂₉ -C ₃₆	1,000mg/kg
Benzene	1mg/kg
BTEX	7mg/kg
Total PAH	20mg/kg
Benzo(a)pyrene	1mg/kg

3.2 Imported Fill

Imported fill may be required if the excavated soil is not suitable or if filling quantities exceed excavated quantities, for backfilling behind basement walls and landscaping purposes. This material must meet the clean criteria identified in the Environmental Guideline Section and the frequency of sampling will depend on the source of the imported fill. If fill is sourced from a licensed quarry, no sampling will be required.

4.0 REDEVELOPMENT STRATEGIES

4.1 Redevelopment Goals

The redevelopment goal is to manage contamination by removal off-site, such that at the completion of redevelopment works, the site will be suitable for any land use, as provided in Section 1.3 of this RAP and in accordance with the SMP.

4.2 Extent of Contamination

Based on previous investigation results, contamination is likely to be limited to fill within the area of the site shown on Figure 1. However, additional investigation is required in the former service station area during demolition and early earthworks on the site. These additional investigations are described in Section 5.2 below.

4.3 Suitably Qualified Persons to Conduct/Supervise Works

A person qualified in accordance with S.381 and S.395 of the EP Act must conduct all investigations, supervise all remediation works and compile report/s required to remediate the site.

4.4 Strategies Applied

Considering the majority of the site area is to be excavated to form a basement carpark, it is likely that excavation and removal of contaminated material will be the primary remediation strategy adopted for the site. Soil will be removed utilising existing data.

No contaminated soil will be removed from site without a Disposal Permit issued pursuant to Section 424 of the Environmental Protection Act 1994.

5.0 REMEDIATION PROGRAM

5.1 Overview

Excavation of contaminated soil within redevelopment areas will occur concurrently with bulk earthworks associated with the redevelopment works. A Disposal Permit will be obtained prior to any off-site removal of contaminated soil. Excavated contaminated soil will be loaded into trucks, covered and disposed to an approved landfill in accordance with the conditions of the approved Disposal Permit.

All remediation and validation works (including excavation and disposal of contaminated material) must be supervised by a person suitably qualified in accordance with Section 381 of the EP Act.

5.2 Further Assessment

Further assessment is required in the area of the former service station (shown on Figure 1) to identify and locate former infrastructure areas e.g. underground fuel storage tank pits, trenches for product transfer lines and the footings of bowsers. This will be undertaken following the demolition of above ground structures and the removal of concrete slabs and underlying sub-grade fill. Once this is complete the soils across the area will be stripped back and stockpile separately. It is anticipated that the outline of the former excavations will be visible at shallow depth, once they can be clearly identified, any fill used to backfill them will be excavated, segregated and stockpiled for sampling. The base and walls of these excavations will be inspected and depending upon whether they are in rock or in soil, they will be photographed and sampled (where soil is present). The rate of sampling will be in accordance with DERM's *Draft Investigation Thresholds for Underground Storage Tanks – January 1999*. All collected samples will be field screened for Volatile

Organic Compounds (VOCs) with a Photoionisation Detector (PID) and selected samples dispatched to the laboratory for a selection of TPH, BTEX, Lead and PAH analysis.

Depending upon the results of the inspection and/or sampling of the excavations, additional material may need to be removed off-site to landfill under a DERM issued Disposal Permit for disposal or treatment.

The stockpiled backfill material will be sampled at a rate of at least 1 sample per 50m³ or as agreed with the TPR. Samples will be analysed for at least heavy metals, TPH, BTEX and PAH. Depending upon the results of these analyses, this material may need to be removed off-site to landfill under a DERM issued Disposal Permit.

6.0 WORK PROCEDURES

This section of the RAP provides an overview of the procedures to be undertaken during redevelopment works.

Tracking and Documentation

Movement of materials both on-site and off site will be tracked as follows:

- a manifest will be maintained for every truckload of contaminated soil removed from site;
- the landfill will provide a weighbridge print-out for the received contaminated soil;
- weighbridge print outs will be compared with the manifest of contaminated soil removed from site; and
- a manifest will be maintained for every truckload of contaminated soil relocated on-site (NOTE: these details will be included in the Validation report for the site).

7.0 OPERATIONAL CONTROL

The contractor responsible for the remediation works shall prepare a Construction Environmental Management Plan (CEMP). Specific issues to be addressed are discussed in the following sections.

7.1 Stormwater Management

Remediation works must comply with requirements for stormwater management as outlined in Schedule B(9) of the NEPM. This includes stockpiling excavated soil in a manner that shall prevent contamination from being transported off-site by stormwater. In general, this will be managed by bunding stockpiles, diverting stormwater away from disturbed areas, placement of silt fence around the site perimeter.

Management of the stormwater shall be undertaken in accordance with Brisbane City Council (BCC) Stormwater Management Codes entailing soil and sediment erosion issues and runoff consideration.

7.2 Soil and Sediment Control

Soil and sediment control will be managed in accordance with BCC Erosion and Sediment Control Standard which assesses land-disturbing activities against specific performance criteria. Key issues from the standard for the specific development include:

- the need to plan carefully for adequate erosion and sediment control by preparing a separate Erosion and Sediment Control (ESC) Plan setting out the required measures for the site over all stages of development/construction;
- the ESC Plan must address all key phases of construction, not just one point in time; and
- develop plans showing the layout and sequencing of controls including bulk earthworks.

Measures to limit the generation of sediment runoff from on-site soil stockpiles include:

- covering stockpiles to limit erosion (as well as odour and visual concerns); and
- surround stockpiles by an appropriate sediment fence to limit ability to become mobile.

The requirements for the management of sediment and soil described in Schedule B(9) of the NEPM (from which the above control measures are drawn) must be complied with during remedial works.

7.3 Groundwater

Groundwater is not expected to be encountered during the excavation works and/or for the placement of shallow services. Should trenches require de-watering due to stormwater run off entering the trenches or seepage from perched water, adequate water samples must be collected to characterise the water prior to off-site disposal. The characterisation of the water will determine the fate of either disposal stormwater in accordance with BCC water quality guidelines, to sewer (NOTE: any disposal to sewer will require an approved Trade Waste Permit from BCC) or disposal to a licensed facility as liquid waste.

7.4 Noise Control

The potential for noise and vibration impacts from the remediation works will result from the:

- preparation of the site;
- movement of construction vehicles as they traffic local roads;
- the operation of plant and activities on site, and
- traffic movements on public roads associated with the site.

In relation to noise emissions from the site, the sensitive receptors that may potentially be impacted by the site works include:

- the residential properties to the north west; and
- neighbouring light industrial and commercial facilities.

Remediation works will be performed in a manner to minimise unnecessary noise. All works will be carried out in accordance with BCC Regulatory limits for noise and vibration and the *Environmental Protection Regulation 1998*.

Noise mitigation measures which will be implemented at the site include:

- all remediation equipment used will comply with noise attenuation regulatory standards;
- monitoring of equipment regarded by the site superintendent as being excessively noisy. If equipment is found to be excessively noisy, the contractor will be instructed to modify the equipment or remove it from the site;
- temporary acoustic barriers may be erected where required to minimize specific noise problems;
- preparation of a noise management plan (included in the CEMP) prior to construction to ensure all staff understand noise control measures. The management plan includes periodic monitoring to ensure continued compliance with the site's development conditions and operating licence;
- a communications program will be developed to keep the community informed of activities;
- investigation and response to any complaints received; and
- construction activities will be conducted in accordance with AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

7.5 Dust Control

Emissions resulting from the remedial works will consist primarily of particulate emissions generated by excavation and soil disturbance activities. Monitoring of the level of airborne particulates as well as good on-site management practices and controls will greatly minimise off-site impacts.

Compliance targets for dust levels will be selected based upon occupational health and safety levels, an assessment of risks for boundary receptors and review of local Air Quality Planning Scheme Policy. Compliance with Schedule B(9) of the NEPM, must be achieved, which is in addition to BCC and DERM requirements.

7.6 Odour Control

The remedial works are not considered likely to generate significant offensive odours to off site receptors.

In the event that offensive odours at the excavation face will be left exposed for periods greater than 24 hours, a non-odorous cover material shall be placed over the exposed odour producing area. This cover material may comprise other fill material recovered at the site, mulch or other appropriate cover or odour masking material.

To minimise offensive odours resulting from odorous stockpiles, stockpiles should be covered with mulch or other appropriate cover to ameliorate the spread of odours. Measures such as moisture conditioning, misting sprays, odorants and masking agents may also be used to manage stockpile odours, should the need arise.

7.7 Public Consultation

Community consultation with regard to the proposed remediation process is not considered to be a primary concern due to the current nature and location of the site. However, in accordance with normal construction practice, a public complaints system should be established including the provision of a contact number on boundary fences and a register of complaints maintained on site.

Should significant issues be raised through the public complaints system, community consultation should be implemented to address these issues.

The potential issues of community concern that may arise during the remediation at the site may include:

- increased traffic;
- noise;
- air quality and dust generation; and
- general concerns arising from the observed use of personnel protective equipment by remediation workers.

Appropriate measures to address the public consultation may include an information sheet distributed to local premises, community information sessions and/or appropriate signage. We note these processes may be required for development elements other than remediation.

7.8 Public Complaints System

Public complaints will be dealt with through direct contact with the complainant. All complaints will be acted on immediately with investigations into the cause of the concern and prompt action taken to rectify the problem.

8.0 VALIDATION PROGRAM

8.1 Validation Soil Sampling

Validation of clean materials located below the impacted fill material will be required on a 10 metre grid, or at 5 metre centres along linear excavations, such as service trenches and walls. Where more than one soil strata or geological unit is present, each material will be validated. Areas of exposed rock will be validated by visual assessment and photographic evidence undertaken on a 20m x 20m grid. Note: Validation sampling requirements may be amended with TPR approval.

Validation samples will be analysed for analytes based on the contaminant of concern and will comprise a selection of metals (Arsenic, Cadmium, Chromium, Copper, Mercury, Lead, Nickel and Zinc). PAH, TPH, BTEX, organochlorine pesticides and

asbestos may also be analysed as appropriate in addition to analytes commensurate with identified contamination located within specific areas, if other than those listed.

Any imported fill will also be sampled to demonstrate compliance with the clean fill criteria. The source of all imported materials will be documented and assessed. Imported fill will be required to be sampled at a rate of 1 sample per 50m³ to confirm compliance with the clean fill criteria or at a rate agreed with the TPR. However, if imported fill is a quarry product or can be verified to be from a clean source, then sampling may not be required.

8.2 Sample Dispatch and Documentation

Samples will be placed in appropriately pre-treated sample jars, placed in an insulated container on ice and submitted to a National Association of Testing Authorities (NATA) accredited laboratory for analysis. Sample movements will be documented using appropriate Chain of Custody forms.

8.3 Backfilling

Where required, areas from which material has been removed will be backfilled with clean fill following successful validation of the areas. Backfill material will be compacted to meet the engineering requirements of ongoing and future use of the area.

8.4 Quality Assurance Program

Quality assurance sampling will be conducted as outlined in AS4482.1-2005, namely

- collection and analysis of one blind replicate sample per twenty primary samples analysed (submitted to primary analysing laboratory under an individual sample name not identifiable with the primary sample);
- collection and analysis of one split sample per twenty primary samples analysed (submitted to secondary analysing laboratory under the same sample name as the primary sample);
- one rinsate sample per day will be collected to ensure there is no cross-contamination of substances from the sampling equipment used; and
- one trip blank per Esky if BTEX compounds are analysed.

Further quality control techniques that will be used include submission of a chain of custody documentation to track sample movements.

9.0 DECONTAMINATION PROCEDURES

Decontamination procedures for sampling equipment, personnel and the general site must be in accordance with the Australian Standard AS 4482.1-2005 and the NEPM guidelines (Schedule B(9)).

10.0 HEALTH AND SAFETY

A Workplace Health and Safety Plan (WH&S plan), which conforms to the requirements of the *Workplace Health and Safety Act 1995* will be developed for any site sampling or excavation works in potentially or known contaminated areas. The WH&S plan will specifically address contaminants of concern identified during investigation works on the site.

11.0 REPORTING REQUIREMENTS

A validation report must be prepared by a person qualified in accordance with S.4.3 of this RAP, and submitted to the TPR for certification prior to the DERM Contaminated Land Unit (CLU). This must occur within 45 days of the completion of remediation and validation works. The report must be prepared and submitted in accordance with the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998*, the NEPM and the EP Act.

The report must document remediation and validation program activities including the results of any further excavation and/or validation required by the results of the initial validation analysis, an evaluation of the results against the remedial goals and an investigation demonstrating compliance with the conditions of this RAP.

The report must also include the results of the QA/QC program, and copies of documentation validating the appropriate handling, disposal and treatment of contaminated soil and water in accordance with DERM requirements. The validation report must be submitted to the DERM for review in accordance with the EP Act and the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland May 1998*.

If impact remains on the site, then an amended SMP for the site must be prepared and submitted with the validation report.

If requested by the DERM, progress reporting must be finalised and submitted to the DERM within one business day.

12.0 STATEMENT OF SUITABILITY

Prior to commencement of the land use proposed by the material change of use, a Statement of Suitability must be obtained from the DERM. The Statement of Suitability must specify that the site is will remain on the EMR and is suitable for the intended use(s) with an approved SMP or the site can be removed from the EMR, as required.