

# Airport Link

## Phase 2 – Detailed Feasibility Study

TECHNICAL PAPER NO. 3

CONTAMINATED LAND

■ October 2006

# Contents

<b>Executive Summary</b>	<b>1-1</b>
<b>1. Introduction</b>	<b>1-4</b>
1.1 Airport Link Project Overview	1-4
1.2 Objectives and Methodology	1-7
1.3 Limitations	1-7
<b>2. Existing Environment</b>	<b>2-1</b>
2.1 Regulatory Setting and Methodology	2-1
2.2 Identification of Land Contamination	2-2
2.3 Environmental Management Register/Contaminated Land Register (EMR/CLR)	2-2
2.3.1 EMR/CLR Search	2-4
2.3.2 Listed Properties	2-5
2.3.3 'Managed' Properties	2-5
2.4 EMR Search Results	2-6
2.5 EMR 'Managed' Properties	2-8
2.6 EMR Properties of Potential Concern	2-9
2.7 Brisbane City Council Landfills	2-13
2.8 Queensland Rail Land	2-13
<b>3. Flammable and Combustible Liquid Licensed Locations</b>	<b>3-1</b>
<b>4. Additional Potentially Contaminated Properties</b>	<b>4-1</b>
<b>5. Historical Land Use Review</b>	<b>5-1</b>
5.1 Historical Land Use Commercial/Industrial Areas	5-1
5.2 Land Use Change	5-1
5.2.1 Bowen Hills	5-1
5.2.2 Lutwyche	5-2
5.2.3 Windsor	5-2
5.2.4 Kedron	5-2
5.2.5 Woolloowin	5-2
5.2.6 Clayfield	5-2
5.2.7 Gordon Park	5-3
5.2.8 Albion	5-3
5.3 Assessment of Historical Aerial Photographs	5-3
5.3.1 Historical Aerial Photograph Review of Airport Link Project Study Corridor	5-4
5.4 Historical Aerial Photograph Review of 1 km Groundwater Drawdown Area	5-20
<b>6. Spoil Disposal Sites</b>	<b>6-1</b>
<b>7. Impact Assessment and Mitigation Strategies</b>	<b>7-1</b>
7.1 Benefits and Impacts	7-1

7.2	Environmental Management Plan	7-8
7.3	Operational Activities	7-8
<b>8.</b>	<b>Conclusions</b>	<b>8-1</b>
<b>9.</b>	<b>References</b>	<b>9-1</b>
<b>Appendix A</b>	<b>BCC EMR/CLR Search Results</b>	<b>A-1</b>
<b>Appendix B</b>	<b>Results of Vehicular Inspection</b>	<b>B-1</b>
<b>Appendix C</b>	<b>Historical Aerial Photograph Interpretation</b>	<b>C-1</b>
<b>Appendix D</b>	<b>Environmental Management Plan</b>	<b>D-1</b>
D.1	EMP Objectives	D-1
D.2	Environmental Responsibilities	D-1
D.3	Guidelines	D-1
D.4	Design and Construction EMP	D-2

## Acronyms and Abbreviations

AL	Airport Link
AGE	Australasian Groundwater & Environmental
ANZECC	Australian and New Zealand Environment and Conservation Council
ASS	Acid Sulphate Soils
AST	Aboveground Storage Tanks
BCC	Brisbane City Council
BTEX	Benzene, toluene, ethylbenzene and xylene
bgs	below ground surface
CLR	Contaminated Land Register
CW	Connell Wagner
DoE	Department of Environment
EIL	Environmental Investigation Levels
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Register
EMS	Environmental Management System
EPA	Environmental Protection Agency
EP Act	Environmental Protection Act 1994
ESA	Environmental Site Assessment
F&C	Flammable and Combustible Liquids
HIL	Health Based Investigation Levels
ICB	Inner City Bypass
IMPs	Incident Management Plans
IT	IT Environmental Pty Ltd
JV	Joint Venture
km	kilometre
L	Litre
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NHMRC	National Health and Medical Research Council
NSBT	North South Bypass Tunnel
OCP	Organochlorine pesticides
OPP	Organophosphate pesticides



OTEK	OTEK Australia Pty Ltd
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PSH	Phase Separated Hydrocarbons
QDEH	Queensland Department of Environment and Heritage
QLD	Queensland
QR	Queensland Rail
SKM	Sinclair Knight Merz
SMP	Site Management Plan
ToR	Terms of Reference
UST	Underground Storage Tank
VOC	Volatile Organic Compound

## Executive Summary

The Joint Venture between Sinclair Knight Merz and Connell Wagner has undertaken an impact assessment of contaminated land issues along the Airport Link Project study corridor. The assessment was largely a desk-top based evaluation with limited field inspections and has not comprised soil or groundwater sampling and analysis activities.

This report attempts to identify properties within the Airport Link Project study corridor where the disturbance of potentially contaminated material is likely to occur. Mitigation measures have been proposed to reduce the potential impacts during design and construction of the Airport Link Project. Considerable uncertainty exists over the nature and extent of contamination necessitating further investigations prior to the construction stages of the Airport Link Project.

An additional study area has been included in this report to identify potentially contaminated properties located outside the Airport Link Project study corridor within a 1 kilometre radius of Lutwyche Road. Australasian Groundwater & Environmental included the additional study area to assess potential groundwater drawdown issues relating to the construction of a tunnel beneath Lutwyche Road for the Airport Link Project. The 1 km groundwater drawdown area information has been combined into this report together with previous background environment contaminated land information from the “Airport Link Report on Existing Environment - Land Contamination” report dated, February 2005. The Airport Link Project study corridor and the 1 km groundwater drawdown study area are collectively referred to as the “Airport Link Project study corridor” throughout this report, unless otherwise stated.

The primary objective of the assessment was to identify those properties along or adjacent to the Airport Link Project study corridor that may be affected by soil and/or groundwater contamination. This report also discusses the potential of contaminated material to be disturbed during construction activities and provides recommendations to appropriately manage the identified environmental and human health risks.

Contaminated land has the potential to impact on the Airport Link Project through the excavation of contaminated material and the drawdown of groundwater, which may result in migration of contaminants. The 1 kilometre groundwater drawdown area was defined to identify properties listed on the Brisbane City Council Environmental Management Register which have the potential for contaminated groundwater to be mobilised from the site of origin to a neighbouring site. Groundwater drawdown issues identified by Australasian Groundwater & Environmental together with potential contaminated properties identified in this report, and any additional potentially contaminated properties, will need to be investigated further in accordance with national guidelines by undertaking a detailed site history investigation as part of a contaminated site assessment.

Property impact information detailed in the ‘Airport Link Project Preliminary Concept Design Report’ referred to as the “Reference Project” was used to identify direct property impacts to the identified Brisbane City Council Environmental Management Register listed properties and other identified potentially contaminated properties.

Knowledge of the nature and extent of contamination along the Airport Link Project study corridor is extremely limited at present. As additional information is obtained during planning and design of the Airport Link Project, the recommendations made in this assessment should be refined to manage actual rather than potential impacts.

This assessment only focuses on the contaminated risks associated with the design, construction and operation of the Airport Link Project. It is not the intended purpose of this assessment to identify and evaluate impacts of potentially contaminated properties on human health or the wider environment.

The assessment included:

- 1) Environmental Management Register/Contaminated Land Register database searches of properties within the Airport Link Project study corridor using the Brisbane City Council Bimap system;
- 2) Brisbane City Council Licensing Web searches of properties containing *Dangerous Goods Safety Management Regulation 2001* (formerly Flammable and Combustible Liquid licences) approvals;
- 3) Brisbane City Council search of registered landfill sites;
- 4) A vehicular-based inspection of listed commercial/industrial properties;
- 5) Review of historical aerial photographs;
- 6) Review of Brisbane City Council 1951 and 1965 land use plan;
- 7) Review of contaminated land information obtained from Queensland Rail; and
- 8) Review of contaminated land information reports held by the Queensland Environmental Protection Agency.

With limited site investigation data, this assessment takes a conservative approach and assumes that any Airport Link construction activities within an identified property could disturb contaminated material. No attempt has been made to describe the nature and extent of the contamination that may be present. However, where possible, an attempt has been made to define the actual areas where contamination may be present within the parcel boundaries of the larger identified properties i.e. Brisbane City Council landfill records and from contaminated property reports held by the Queensland Environmental Protection Agency.

There were 230 properties listed on the Brisbane City Council Environmental Management Register within the Airport Link Project study corridor. 109 properties were listed on the Environmental Management Register within the actual Airport Link Project study corridor, five properties were listed on the Brisbane City Council Environmental Management Register as 'Managed' (i.e. subject to a Site Management Plan) and no properties were listed on the Contaminated Land Register. 136 properties listed on the Brisbane City Council Environmental Management Register were identified within the 1km groundwater drawdown area, three properties were listed as 'Managed' and no properties were listed on the Contaminated Land Register.

Property impact information detailed in the Reference Project was used to identify direct property impacts to the identified Brisbane City Council Environmental Management Register listed properties

and other identified potentially contaminated properties. The Queensland Environmental Protection Agency was contacted to obtain further information relating to only the identified Environmental Management Register listed properties that will have a direct impact on the proposed alignment for the Airport Link Project. Not all identified Brisbane City Council Environmental Management Register listed properties within the Airport Link Project study corridor were reviewed by the Queensland Environmental Protection Agency. The Queensland Environmental Protection Agency advised that contaminated site investigation reports exist for only seven properties having a direct impact with the proposed alignment of the Airport Link Project.

Based on the historical aerial photograph review, 10 properties were identified within the Airport Link Project study corridor that were not identified in the Brisbane City Council's WebBAS searches. The review of historical aerial photograph was also undertaken of the 1 km Groundwater Drawdown Area. Based on the historical review, 4 properties were identified within the 1km Groundwater Drawdown Area that were not identified in the Brisbane City Council's WebBAS searches.

The level and extent of potential contamination associated with the identified Brisbane City Council Environmental Management Register listed properties is not known at present (except for those properties for which the Environmental Protection Agency records indicate investigations) and the disturbance of contaminated soil and/or groundwater may have a number of impacts. Properties that have not been identified as having a direct impact still pose a potential risk to Airport Link construction activities. The Airport Link Project will require the excavation of material from properties listed on the Brisbane City Council Environmental Management Register. Under Section 424 of the Environmental Protection Act 1994 a person must not, without a disposal permit, remove and treat or dispose of contaminated soil from properties recorded in the Queensland Environmental Protection Agency Environmental Management Register.

Disposal permits identify the amount of soil to be removed, how it is to be transported and how it must be disposed of in a licensed/approved disposal facility. Advice will need to be sought from the Queensland Environmental Protection Agency regarding disposal permit requirements for material excavated from properties listed on the Environmental Management Register, properties containing unanticipated contamination and properties inadvertently contaminated during construction activities.

Recommendations have been incorporated into an Environmental Management Plan covering the design, construction and operational phases of the Airport Link Project. Preparation and implementation of a 'best practice' Environmental Management Plan will protect humans and the environment from potential contaminants.

# 1. Introduction

If disturbed, contaminated soil and/or groundwater can adversely affect human health and the environment. As the Airport Link Project crosses, or passes by, a range of properties which may have been contaminated by past or existing land uses, this assessment aims to:

- Identify properties with past or current land uses that may have resulted in the presence of soil and/or groundwater contamination;
- Identify potential impacts that require management in the design, construction and operation stages;
- Where insufficient information is currently available, make recommendations for future investigations; and
- Where potential impacts are identified, make recommendations to mitigate such impacts.

Knowledge of the nature and extent of contamination along the Airport Link Project study corridor is extremely limited at present. As additional information is obtained during planning and design of the Airport Link Project, the recommendations made in this assessment should be refined to manage actual rather than potential impacts.

The Joint Venture (JV) between Sinclair Knight Merz (SKM) and Connell Wagner (CW) has undertaken an impact assessment of contaminated land (soil/rock and groundwater) issues along the Airport Link Project study corridor. The assessment was largely a desk-top based evaluation with limited field inspections and has not comprised soil or groundwater sampling and analysis activities. The methodology did not include steps that would usually be undertaken as part of a site history investigation in a contaminated site assessment, such as historical title searches, interviews and site inspections. Site history investigations should be undertaken prior to the commencement of site construction activities to ensure to the extent possible that all contaminated properties have been identified.

## 1.1 Airport Link Project Overview

The Queensland Government and Brisbane City Council (BCC) propose to construct the Airport Link Project. The Airport Link Project is predominantly an underground toll road proposed between Brisbane's northern suburbs and Bowen Hills. The Airport Link Project is proposed to connect the northern arterials of Gympie Road at Kedron, Sandgate Road and the East-West Arterial at Toombul, to the Inner City Bypass and the proposed North South Bypass Tunnel (NSBT) at Bowen Hills. The Airport Link Project also has the potential to connect Stafford and Gympie Roads to Sandgate Road and the East West Arterial at Toombul.

The Airport Link Project study corridor is shown in **Figure 1-1**. The Airport Link Project study corridor for the Environmental Impact Statement (EIS) was identified during Pre-feasibility Studies conducted by the JV. The Terms of Reference (ToR) for the Airport Link Project EIS have been prepared in accordance with the *State Development and Public Works Organisation Act, 1971* and were issued by the QLD Government Office of the Coordinator General in November 2005.

An additional study area has been included in this report to identify contaminated properties located outside the Airport Link Project study corridor but within a 1 kilometre (km) radius of Lutwyche Road (**Figure 1-1**). Australasian Groundwater & Environmental (AGE) identified the additional study area as an area where groundwater drawdown will potentially occur from the construction of the tunnel beneath Lutwyche Road. Modelling potential effects the Airport Link Project will have on groundwater is also being undertaken by AGE. The 1 km groundwater drawdown area was defined to identify properties listed on BCC's Environmental Management Register (EMR) which have the potential for contaminated groundwater to be mobilised from the site of origin to a neighbouring site.

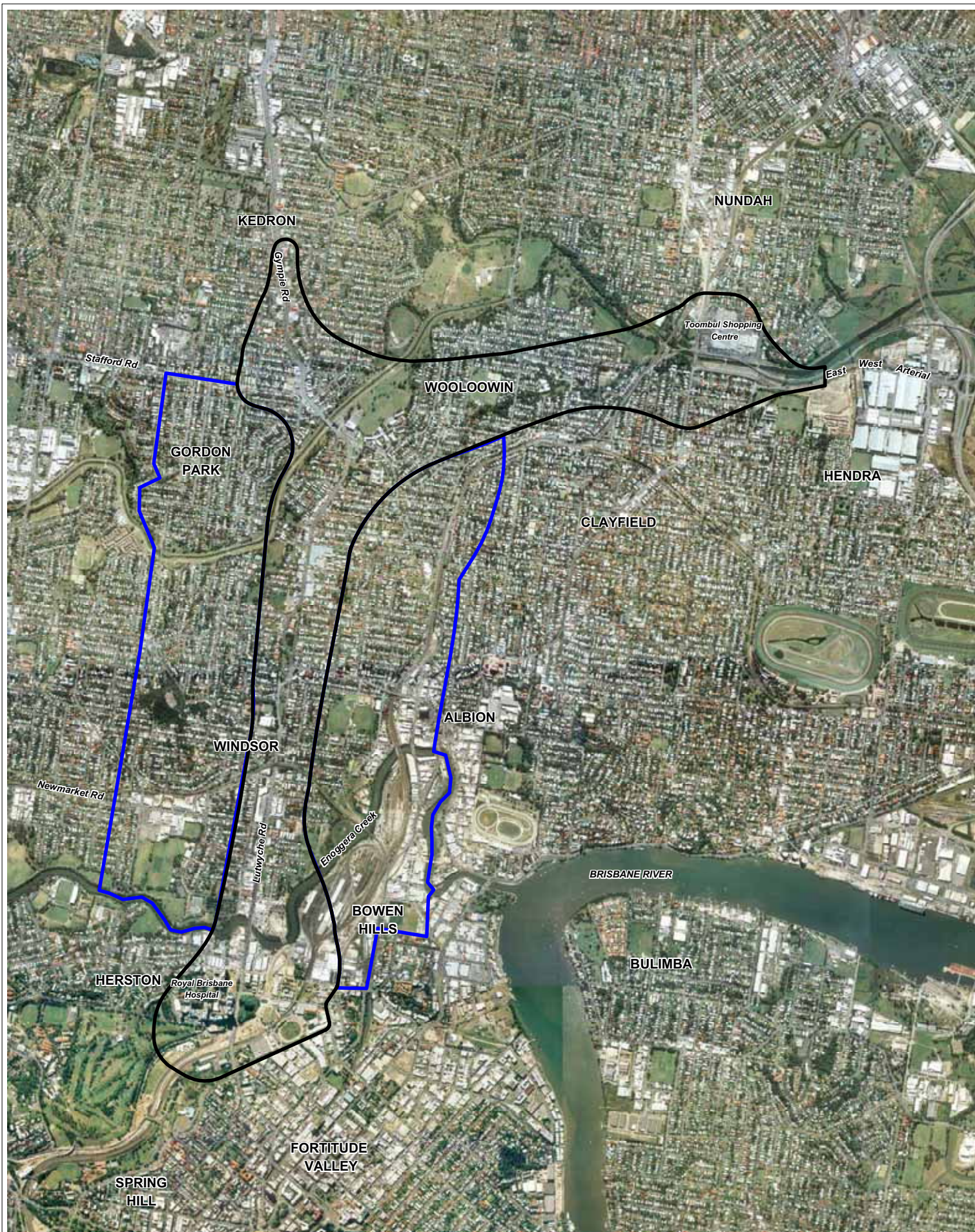
Potential contaminated site within both the Airport Link Project study corridor and the 1 km groundwater drawdown area has been combined into this report. The Airport Link Project study corridor and the 1 km groundwater drawdown study area are collectively referred to as the "Airport Link Project study corridor" throughout this report, unless otherwise identified as the individual study corridor or area, respectively.

Groundwater drawdown issues identified by AGE together with potential contaminated properties identified in this report, and any additional potentially contaminated properties identified during ongoing investigations, will need to be investigated further in accordance with national guidelines by undertaking a detailed site history investigation as part of a contaminated site assessment.

This report attempts to identify properties within the Airport Link Project study corridor where the disturbance of potentially contaminated material is likely to occur. Mitigation measures have been proposed to reduce the potential impacts during design and construction of the Airport Link Project. Considerable uncertainty exists over the nature and extent of contamination necessitating further investigations prior to the construction stages of the Airport Link Project. Information detailed in the Reference Project (BCC 2006) was used to identify direct property impacts to identified Environmental Management Register (EMR) listed properties and other identified potentially contaminated properties.

An additional study area has been included in this report to identify contaminated properties located outside the Airport Link Project study corridor but within a 1 kilometre (km) radius of Lutwyche Road (**Figure 1-1**). Australasian Groundwater & Environmental (AGE) identified the additional study area as an area where groundwater drawdown will potentially occur from the construction of the tunnel beneath Lutwyche Road. The 1 km groundwater drawdown area information has been combined into this report together with previous contaminated land information from Sinclair Knight Merz "Report on Existing Environment - Land Contamination" (SKM 2005b). The Airport Link Project study corridor and the 1 km groundwater drawdown study area are collectively referred to as the "Airport Link Project study corridor" throughout this report, unless otherwise stated.

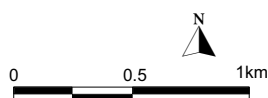




# LEGEND

- Airport Link Corridor
- 1km Groundwater Drawdown Area

**Figure 1-1**  
Airport Link Study Corridor



 **Airport Link**

**SKM Connell Wagner**  
JOINT VENTURE





## 1.2 Objectives and Methodology

The primary objective of the assessment was to identify those properties listed on BCC's EMR along or adjacent to the Airport Link Project study corridor that may be affected by soil and/or groundwater contamination. This report also discusses the potential for contaminated material to be disturbed during construction activities and provides recommendations to appropriately manage the identified environmental and human health risks.

This report attempts to identify properties within the Airport Link Project study corridor where the disturbance of potentially contaminated material is likely to occur. Mitigation measures have been proposed to reduce the potential impacts during design and construction of the Airport Link Project. Considerable uncertainty exists over the nature and extent of contamination necessitating further investigations prior to the construction stages of the Airport Link Project. Information detailed in the Reference Project (BCC 2006) was used to identify direct property impacts to identified EMR listed properties and other identified potentially contaminated properties.

Baseline information from previous investigation reports and other relevant studies has been used and referenced where appropriate include:

- Brisbane North South Bypass Tunnel, Report on Existing Environment – Land Contamination (SKM 2004);
- Report on Hydrogeological Environmental Impact Assessment North South Bypass Tunnel (AGE 2004);
- Revised Draft Background Environmental Report – Contaminated Land Issues, Airport Link (SKM 2005a); and
- Final Airport Link, Report on Existing Environment - Land Contamination (SKM 2005b).

## 1.3 Limitations

The sole purpose of this report is to conduct a desk-top review of contaminated properties associated with the Airport Link Project. SKM derived the information in this report primarily from the data provided by BCC and BCC City Design (2005) and other publicly available information sources. It is important to note the EMR/CLR data provided by BCC is not an exact copy of the EMR/CLR maintained by the EPA. Hence potential exists for differences between the BCC EMR/CLR data shown in this Report and the EMR/CLR Register maintained by the EPA. This is because the BCC version contains properties that are 'of interest' to the Council because they may be potentially contaminated but are not actually listed on the EPA's EMR/CLR.

The passage of time, manifestation of latent conditions and impacts of future events may require further exploration within the Airport Link Project study corridor and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.



In preparing this report, SKM has relied upon and presumed accurate certain information (or absence thereof) relative to the information provided by BCC and the various literature sources. Except as otherwise stated in the report, SKM has not attempted to verify the accuracy or completeness of any such information.

A site history investigation (including historical title searches, interviews and site inspections) should be undertaken prior to the commencement of site construction activities to ensure to the extent possible that all contaminated properties have been identified.

The investigation covered several hundred properties, hence limits were imposed on the amount of information collected and assessed. There may be properties with either existing or historical uses which have the potential to cause contamination which are unknown or unobserved and consequently not identified. The investigation was limited in time to post 1946 due to the lack of detailed historical information prior to this date.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings, observations and conclusions are based solely upon information and drawings supplied by the Client, and information available in the public domain in existence at the time of the investigation.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between SKM, the JV and the Client. SKM accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

Specifically this report and the Airport Link Project EIS is to present strategies to address the potential impacts associated with disturbance of contaminated land during design, construction and operation of the Airport Link Project. Further investigations are to be undertaken to indicate how the Airport Link Project would comply with existing Site Management Plans (SMPs) for properties located within proposed disturbance footprints. A SMP is a plan used to manage land for which particulars are recorded in the EPA's EMR.

## 2. Existing Environment

### 2.1 Regulatory Setting and Methodology

Legislative requirements covering contaminated land in QLD are primarily contained in the *Environmental Protection Act 1994* (EP Act) and subordinate policies and regulations. The methodology used in this assessment is based largely on the following Australian guideline publications:

- The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) (National Environment Protection Council [NEPC], 1999);
- The Australian Standard AS4482.1-1997 Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds (Standards Australia, 1997); and
- QLD Department of Environment and Heritage (now Environmental Protection Agency) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*, May 1998 (Department of Environment [DoE], 1998).

These documents provide a framework for assessing and managing contaminated soil and/or groundwater based on an evaluation of three related items. Each of these links in the “risk chain” must be present for a risk to exist:

- a) *Contamination*: Soil and/or groundwater contamination must be present.
- b) *Receptors*: Humans and/or a receiving environment must be present and be potentially impacted by the identified contaminants.
- c) *Pathways*: The contamination must be able to contact receptors by means such as:
  - Humans – ingestion, skin contact, inhalation; and
  - Environment – seepage into waterways, wind-blown deposition on plants, root uptake, ingestion, skin contact and inhalation by various life forms.

This assessment only focuses on the potential contamination risks associated with the construction and operation of the Airport Link Project. It is not the intended purpose of this assessment to identify and evaluate impacts of potentially contaminated properties on human health or the wider environment. Such assessments are the responsibility of the land owner and the person(s) having caused the contamination.

After assessing the potential risks, this section proposes appropriate mitigation options. For infrastructure projects where contaminated material remains onsite, the current practice to prevent contact with the general public and the environment is to provide adequate protection or contaminant capping (i.e. to remove the exposure pathway). Pavements, building foundations and garden areas typically achieve this objective.

## 2.2 Identification of Land Contamination

A review of relevant and available information was conducted for the purpose of identifying areas or locations in the Airport Link Project study corridor in which contamination is potentially present and the likely nature of that contamination.

Potentially contaminating activities within the Airport Link Project study corridor were considered. The assessment included:

- BCC's EMR/CLR database searches of properties within the Airport Link Project study corridor using the BCC Bimap system;
- BCC Licensing Web searches of properties containing *Dangerous Goods Safety Management Regulation 2001* (formerly Flammable and Combustible Liquid licences) approvals;
- BCC search of registered landfill sites;
- A vehicular-based inspection of listed commercial/industrial properties;
- Review of historical aerial photographs;
- Review of BCC 1951 and 1965 land use plan;
- Review of contaminated land information obtained from QR; and
- Review of contaminated land information/reports held by the QLD EPA.

With limited site investigation data, this assessment takes a conservative approach and assumes that any Airport Link construction activities within an identified property could disturb contaminated material. No attempt has been made to describe the nature and extent of the contamination that may be present. However, where possible, an attempt has been made to define the actual areas where contamination may be present within the parcel boundary of the larger identified properties, i.e. BCC landfill records and from contaminated site reports held by the QLD EPA.

## 2.3 Environmental Management Register/Contaminated Land Register (EMR/CLR)

The principal sources of land-use planning data on contaminated land in QLD are the EMR and CLR databases administered by the EPA. The EMR is a land-use planning and management register. Land that has been or is being used for a Notifiable Activity, and of which the EPA has been notified, is recorded on the EMR. The EMR provides information on historic and current land uses, including whether the land has been or is currently used for a Notifiable Activity, or has been contaminated by a hazardous contaminant. Notifiable Activities are those that cause or are likely to cause contamination. The following list identifies thirty-eight Notifiable Activities listed under Schedule 2 of the EP Act:

- |                                    |  |
|------------------------------------|--|
| ■ Abrasive blasting                | ■ Landfill                               |
| ■ Aerial spraying                  | ■ Lime burner                            |
| ■ Asbestos manufacture or disposal | ■ Livestock dip or spray race operations |
| ■ Asphalt or bitumen manufacture   | ■ Metal treatment or coating             |

- Battery manufacture or recycling
- Chemical manufacture or formulation
- Chemical storage
- Coal fired power station
- Coal gas works
- Defence establishments or training areas
- Drum reconditioning or recycling
- Dry cleaning
- Electrical transformers
- Engine reconditioning works
- Explosives production or storage
- Fertiliser manufacture
- Foundry operations
- Gun, pistol or rifle range
- Herbicide or pesticide manufacture
- Mine wastes
- Mineral processing
- Paint manufacture or formulation
- Pest control
- Petroleum or petrochemical industries
- Petroleum product or oil storage
- Pharmaceutical manufacture
- Printing
- Railway yards
- Scrap yards
- Service stations
- Smelting or refining
- Tannery, fellmongery or hide curing
- Waste storage, treatment or disposal
- Wood treatment and preservation

The CLR is a register of ‘risk’ properties which have been demonstrated (through scientific investigation) to be contaminated land which is causing or may cause serious environmental harm<sup>1</sup>. Land is recorded on the CLR when scientific investigation shows it is contaminated and action needs to be taken to remediate or manage the land.

It is important to note that the absence of a property from either Register does not necessarily mean that a property has not been used for a Notifiable Activity or another activity, which may result in contamination.

The Registers do not provide a definitive list of contaminated or potentially contaminated properties within the Airport Link Project study corridor. The Registers record properties that are known to the EPA as being contaminated or have the potential for contamination as the result of an existing or past Notifiable Activity being undertaken on the property.

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<sup>1</sup> Environmental harm is defined in section 17 of the EP Act as environmental harm (other than environmental nuisance):

(a) that causes actual or potential harm to environmental values that is irreversible, of a high impact or widespread; or

(b) that causes actual or potential harm to environmental values of an area of high conservation value or special significance; or

(c) that causes actual or potential loss or damage to property of an amount of, or amounts totalling, more than the threshold amount; or

(d) that results in costs of more than the threshold amount being incurred in taking appropriate action to (i) prevent or minimise the harm; and

(ii) rehabilitate or restore the environment to its condition before the harm.

### 2.3.1 EMR/CLR Search

This section provides a summary of results obtained from EMR/CLR searches by BCC Bimap system. Search results were first provided in the document titled *Contaminated Land Search – Proposed Airport Link* (BCC City Design, 2005) for the Airport link Project Background Environment Report (SKM 2005b).

The current search undertaken by BCC was designed to capture data within the 1 km groundwater drawdown area and to update existing data obtained from previous BCC searches. Search results are presented in **Appendix A**.

The following information was obtained for each property:

- Property description;
- Property address;
- Notifiable Activity;
- Status (Listed or ‘Managed’); and
- EPA reference number.

Notifiable Activities listed in the BCC EMR/CLR are considered to present a risk of generating contaminants likely to be mobile in groundwater and are susceptible to modelled drawdown. **Table 2-1** separates a properties Notifiable Activity into high and low risk properties. It should be noted, that the actual risk of a property may need to be verified by site specific investigation.

#### ■ Table 2-1 Higher and Lower Risk Notifiable Activities

'Higher Risk' Notifiable Activities	'Lower Risk' Notifiable Activities
Coal Fired Power Station Coal Gas Works Hazardous Contaminant Landfill Petroleum Product or Oil Storage Railway Yards Service Station	Battery manufacture or recycling Chemical manufacture or formulation Chemical storage Dry cleaning Foundry operations Gun, pistol or rifle range Metal treatment or coating Paint manufacture or formulation Pest control Printing Scrap Yards Tannery, fellmongery or hide curing Waste storage, treatment or disposal Wood Treatment and Preservation

Search results were mapped and the data integrated to determine the number of properties listed within the Airport Link Project study corridor. A review of this data was undertaken and the following points noted:

- No properties were listed on the CLR;
- A total of 109 properties within the Airport Link Project study corridor were listed on the EMR;
- Lot 7 on RP223902 at 214 Lutwyche Road, Windsor (Freedom Furniture) has been notified to the EPA for listing on the EPA's EMR;
- A total of 136 properties within the 1km groundwater drawdown area were listed on the EMR.

It should be noted that some properties have been included in both study areas due to the property overlapping the boundary between the Airport Link Project study corridor and the 1km groundwater drawdown area. It is important to note the EMR/CLR data provided by BCC is not an exact copy of the EMR/CLR maintained by the EPA. Hence potential exists for differences between the BCC EMR/CLR data shown in this Report and the EMR/CLR Register maintained by the EPA. This is because the BCC version contains properties that are 'of interest' to the Council because they may be potentially contaminated but are not listed on the EMR/CLR.

**Figure 2-1** shows the BCC EMR listed properties within the Airport Link Project study corridor. For the purpose of this Report, properties listed on the BCC EMR have been grouped into "Listed Properties" or "Managed Properties", as defined below.

### 2.3.2 Listed Properties

Listed properties are those which have or have had a Notifiable Activity or which have been found through an investigation as containing a "Hazardous Contaminant"<sup>2</sup>. A "hazardous contaminant" is generally defined as a contaminant with levels which exceed the following threshold levels set in the *Draft Guidelines for the Assessment & Management of Contaminated Land in Queensland* (1998) ("the Draft Guidelines"):

- the Environmental Investigation Levels for copper and/or zinc (for phytotoxicity); and/or
- the Health-based 'A' Investigation Levels for Residential Areas (for human health).

### 2.3.3 'Managed' Properties

A 'Managed' property is a property which is subject to Site Management Plan (SMP) approved by the EPA. The SMP is a public document attached to the EPA's EMR/CLR listing of the property. The objective of a SMP is to manage the chemical contamination on the property in a manner which protects human health and the environment and ensures that the property is suitable for the specified use.

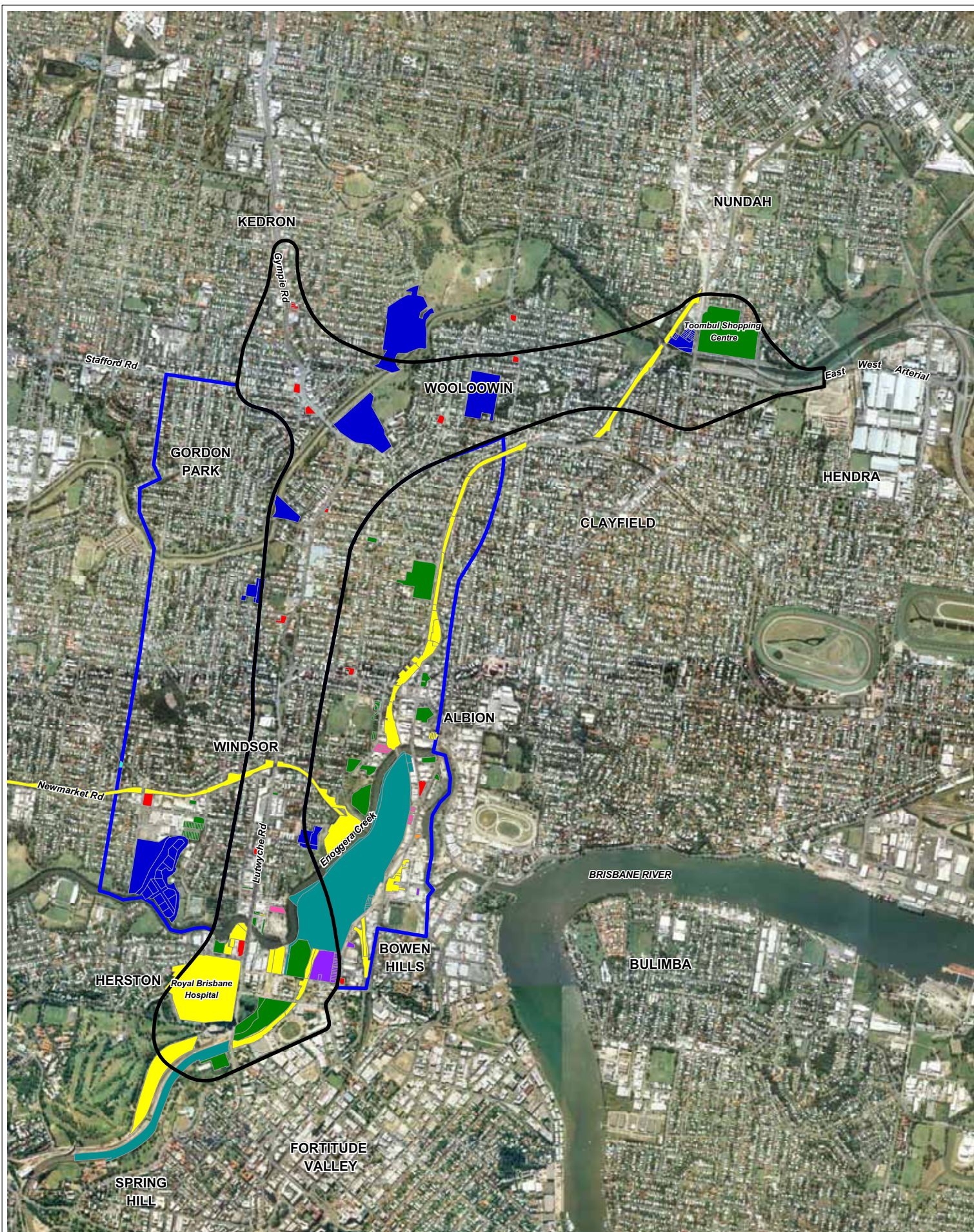
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<sup>2</sup> As per Schedule 3 of the EP Act, a hazardous contaminant is a contaminant that, if improperly treated, stored, disposed of or otherwise managed, is likely to cause serious or material environmental harm because of: its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity or flammability; or its physical, chemical or infectious characteristics.

## 2.4 EMR Search Results

There were 230 properties listed on the BCC EMR within the Airport Link Project study corridor. **Table 2-2** provides a summary of the EMR listed properties and their Notifiable Activity within the Airport Link Project study corridor and their status (i.e. listed or ‘Managed’). Total of 109 properties were listed on the EMR, five properties were ‘Managed’ and no properties were listed on the CLR. **Table 2-3** provides a summary of the BCC EMR listed properties and their Notifiable Activity within the 1 km groundwater drawdown area. 136 properties were listed on the BCC EMR, three properties were ‘Managed’ and no properties were listed on the CLR.



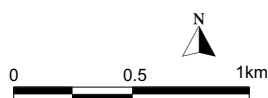


# LEGEND

- |   |   |  |
|---|---|--|
| <span style="color: yellow;">■</span> Hazardous Contaminants (51) | <span style="color: pink;">■</span> Scrap Yard (15) | <span style="color: green;">■</span> Petroleum Product or Oil Storage (55)   |
| <span style="color: orange;">■</span> Dry Cleaning (1)            | <span style="color: purple;">■</span> Printing (26) | <span style="color: cyan;">■</span> Pest Control (1)                         |
| <span style="color: red;">■</span> Service Station (17)           | <span style="color: blue;">■</span> Landfill (51)   | <span style="color: teal;">■</span> Railway Yard (13)                        |
|   |   | <span style="border: 1px solid black;">▬</span> Airport Link Corridor        |
|   |   | <span style="border: 1px solid blue;">▬</span> 1km Groundwater Drawdown Area |

Figure 2-1

BCC EMR Listed Properties





■ **Table 2-2 EMR Listed Properties within the Airport Link Project study corridor**

Notifiable Activity	EMR Search		
	Listed	'Managed'	Total
Scrap Yard	1	-	1
Hazardous Contaminant	21	2	23
Landfill	31	-	31
Petroleum Product or Oil Storage	11	2	13
Printing	24	-	24
Railway Yards	4	-	4
Service Stations	11	1	12
<b>Total</b>			<b>109</b>

■ **Table 2-3 EMR Listed Properties within the 1 km Groundwater Drawdown Area**

Notifiable Activity	EMR Search		
	Listed	'Managed'	Total
Scrap Yard	11	3	14
Hazardous Contaminant	29	-	29
Landfill	24	-	24
Petroleum Product or Oil Storage	41		41
Printing	10	-	10
Railway Yards	11	-	11
Service Stations	4	-	4
Pest Control	1		1
Dry Cleaning	1		1
<b>Total</b>			<b>136</b>

## 2.5 EMR 'Managed' Properties

The following five 'Managed' properties were identified within the Airport Link Project study corridor:

- Lot 733 on SL70090 located at 64 Gympie Road, Kedron remains listed on the EPA's EMR for the Notifiable Activity of a service station and has an approved SMP. The site was formerly operated by Shell Engineering Pty Ltd and known as the Shell Kedron Service Station which operated from 1965 until 1999. All underground storage tanks, pipe work and bowzers were removed in January 2001. The EPA issued a "Suitability Statement"<sup>3</sup> for the property in July 2001 advising that the property was suitable for residential use with minimal opportunities for soil access. The site specific conditions of the SMP, which remains in force for the site, includes the placement and maintenance of barriers which separate users of the site from the

<sup>3</sup> A Suitability Statement is issued by the Contaminated Land Unit of the EPA and is a statement about the uses and activities for which the land is suitable (i.e. suitable for industrial use).

contamination. There are also controls on excavation activities on-site. IT Environmental Pty Ltd (IT) conducts biannual (6 monthly) groundwater monitoring at the former Kedron Service Station. In June 2003 IT suggested that the Phase Separated Hydrocarbons (PSH) thickness has decreased and that dissolved concentrations appear stable. A SMP Compliance Report, Proposed Commercial Development prepared by Butler Partners in June 2002 details background information relating to site activities. BTEX was detected in groundwater and lead detected in soil below HIL-D (restricted residential).

- Lot 51 on SL801574 located at 15-4 Butterfield Street, Herston. OTEK Australia Pty Ltd (OTEK) conducted an Environmental Site Assessment (ESA) in 2001. OTEK identified various generations of fill (up to 3.6 m below ground surface [bgs] in the southwest corner of the site near Butterfield St.) containing heavy metals above Environmental Investigation Levels (EIL) but below commercial/industrial Health Based Investigation Levels (HILs). Lead being the primary contaminant of concern and the only metal above HIL commercial/industrial. Polycyclic Aromatic Hydrocarbons (PAH) also exceeded HILs for residential land use. Groundwater was not encountered on site. GeoEnvironmental Consultants prepared an ESA and preliminary geotechnical assessment for 15 Butterfield St Herston (Lot 51 on SL801574, Lot 18 on RP9936 and Lot 1 on RP158827) for Praedium Development Corporation Pty Ltd in November 2002. A SMP was approved by the EPA in February 2003, the site was remediated and a development permit issued November 2003 for a “Material Change of Use”.
- Lot 18 on RP9934 located at 1 Butterfield Street, Herston. EPA records unavailable;
- Lot 2 on SP144596 located at 58-4 O’Connell Terrace, Bowen Hills. BCC retained no records of the site;
- Lot 3 on SP144596 located at 52-4 O’Connell Terrace, Bowen Hills. BCC retained no records of the site.

The following three ‘Managed’ properties were identified within the 1 km groundwater drawdown area. Information obtained from BCC of these sites is provided in **Appendix A**:

- Lot 2 on RP55530 located at 194-A Abbotsford Road, Bowen Hills;
- Lot 75 on RP9371 located at 194 Abbotsford Road, Bowen Hills;
- Lot 74 on RP9371 located at 192-4 Abbotsford Road, Bowen Hills;

## 2.6 EMR Properties of Potential Concern

Property impact information detailed in the Reference Project (BCC 2006) was used to identify direct property impacts to the identified EMR listed properties and other identified potentially contaminated properties. The QLD EPA was contacted to obtain further information relating to only the identified EMR listed properties that will have a direct impact on the proposed alignment for the Airport Link Project. Not all identified EMR listed properties within the Airport Link Project study corridor were reviewed by the EPA. The QLD EPA advised that contaminated site investigation reports exist for seven properties that have a direct impact with the proposed alignment of the Airport Link Project. **Table 2-4** lists the seven properties and provides a brief summary of each report.

■ Table 2-4 EPA Contaminated Site Report Information

Lot	Plan	Street Address	Notifiable Activity	BCC Historical Information	EPA Information
				No record of site.	Dames & Moore conducted two Contaminated Land Investigations at the Herston Hospital Complex in 1996. Further Contamination Investigation Stage 1 Development Area - Car park identified heavy metal contaminated soil. Approximately 750m <sup>3</sup> of contaminated soil was removed from the site (Lot 542 on Plan SL10479) in three separate events in 1997. Stage 1 Contaminated Land Investigation – Biological Research Building identified Polycyclic Aromatic Hydrocarbons (PAH) contaminated soil. Approximately 500m <sup>3</sup> of contaminated soil was removed from the site (Lot 566 on Plan SL10479) in 1998.
544	SP119375	Royal Brisbane Hospital, 30 Bowen Bridge Rd Herston 4006	Petroleum Product or Oil Storage		
100	SP134740	Former Service Station 54-4 Bowen Bridge Rd, Herston 4006	Service Station	No record of site.	EPA records unavailable.
18	RP9934	1 Butterfield St Herston 4006	Hazardous Contaminants	No record of site.	EPA records unavailable.
51	SL801574	15-4 Butterfield St. Herston 4006	Hazardous Contaminants	No record of site.	OTEK Australia Pty Ltd (OTEK) conducted an Environmental Site Assessment (ESA) in 2001. OTEK identified various generations of fill (up to 3.6 m below ground surface [bgs]) in the southwest corner of the site near Butterfield St.) containing heavy metals above Environmental Investigation Levels (EIL) but below commercial/industrial Health Based Investigation Levels (HILs). Lead being the primary contaminant of concern and the only metal above HIL commercial/industrial. PAH also exceeded HILs for residential. Groundwater was not encountered on site. GeoEnvironmental Consultants prepared an ESA and preliminary geotechnical assessment for 15 Butterfield St Herston (Lot 51 on SL801574, Lot 18 on RP9936 and Lot 1 on RP158827) for Praedium Development Corporation Pty Ltd in November 2002. A SMP was approved by the EPA in February 2003, the site was remediated and a development permit issued November 2003 for a "Material Change of Use".

Lot	Plan	Street Address	Notifiable Activity	BCC Historical Information	EPA Information
733	SL7090	JB Hi-Fi 64 Gympie Road Kedron 4031	Service Station	3x54,000L USTs 3x18,000L USTs 7 bowers Service station decommissioned in 1999. All known USTs, bowers and pipe work removed from the Shell Kedron site in January 2001. SMP current for hydrocarbon impacted soil between 2-4.8mbgs. Groundwater 5.9-7.1mbgs and flows in a southerly direction	IT Environmental Pty Ltd (IT) conducts biannual (6 monthly) groundwater monitoring at the former Kedron Service Station. In June 2003 IT suggested that the (PSH) thickness has decreased and that dissolved concentrations appear stable. Current IT reports were not on file. A SMP Compliance Report, Proposed Commercial Development prepared by Butler Partners in June 2002 details background information relating to site activities. Historically the service station operated between 1965 and 1999. BTEX was detected in groundwater and lead detected in soil below HIL-D (restricted residential). EPA records unavailable.
4	RP98727	Ampol Service Station 110 Gympie Rd Kedron 4032	Service Station	2x55,000L USTs 1x 13,000L USTs 1x10,000L USTs 1x2,300L USTs Lot 4 on RP98727 located at 110 Gympie Road. In March 2001 there was a leak of approximately 14,000L of petroleum product associated with faulty pipe work beneath a bowser. The leak was known to have reached groundwater at approximately 10.5m below ground surface. Contaminant plume moved underneath Gympie Road in easterly direction. Bedrock was intersected at 11.5-12m below ground surface and was expected to act as a vertical confinement to the hydrocarbon plume. It is understood that site remediation activities were undertaken and groundwater investigations have been performed with the quality of groundwater in February 2002 known to have elevated concentrations of hydrocarbon (C <sub>6</sub> – C <sub>9</sub> 15,000 µg/L) and benzene (83,000 µg/L).	
25	RP841248	Vacant Land 690-4 Lutwyche Rd	Service Station	No record of site.	The site operated as a retail motor fuel outlet and motor vehicle workshop since 1932 and was decommissioned in

Lot	Plan	Street Address	Notifiable Activity	BCC Historical Information	EPA Information
		Windsor			<p>1992 to make way for an extra lane on Lutwyche Rd. Hollingsworth Dames &amp; Moore conducted an ESA in April 1992. 8 Underground Storage Tank (USTs) were known to exist on site, an additional 3 were uncovered during excavation activities. A total of 11 USTs were removed from the site in March 1992. The soil was excavated to 1.4 m and backfilled with clean fill. This area is now part of Lutwyche Rd. Soil spoil was removed to a BCC Depot on Hamilton Rd. Chermside. Hydrocarbon contaminated soil remains at least 1.4 m bgs.</p> <p>OTEK conducted an ESA at 684, 690 &amp; 694 Lutwyche Rd. in November 1995. Benzene, toluene, ethylbenzene and xylene (BTEX) exceeded Queensland Department of Environment and Heritage (QDEH). Concentrations of PAH, metals, polychlorinated Biphenols (PCBs), organochlorine pesticides (OCP) and organophosphate pesticides (OPP) were detected or either below lab detection or below QDEH criteria. Volatile Organic Compounds (VOCs) were identified in the field screening of soils.</p>

## 2.7 Brisbane City Council Landfills

To meet its reporting obligations under the EP Act, BCC maintains a data base the location of all known landfill sites and a précis of their operational history. Limited information was obtained from BCC of landfills identified in BCC's WebBAS search and is provided below:

- Lot 2 on RP114914 located at 61 Cartwright St, Windsor. BCC records indicate the landfill operational between September 1952 and June 1953 with approximately 2 m of refuse.
- Lot 20 on RP56334 located at 61 Cartwright 46/4 Bryden St Windsor. BCC records indicate the landfill operational between September 1952 and June 1953 with approximately 2 m of refuse.
- Lot 1 on RP19518 located at 2A Jimbour Street, Woolloowin. BCC records indicate the site operated as a sanitary landfill from March 1958 to May 1958 and the depth of waste was approximately 2m. BCC do not monitor this landfill or surrounding water courses.
- Lot 2 on RP33818 located at 61 Bertha Street, Woolloowin. Within Kalinga Park, this area between Park Avenue and Bertha Streets and bounded to the south by Henry Street was previously known as Nash Oval. In 1989 the soil on this oval was analysed and found to have elevated radioactive levels. BCC decided to cancel the lease on the oval that had been held by the Public Service Rugby League and declared it would remain as an open space not to be used for organised sport. Environmental Management of the site was undertaken in 1993. Queensland Health confirmed that this site (Lot 2 on RP33818) was remediated and validated in 1993 with all radioactive sand taken to the Mt Coot-tha Quarry. The site is not listed on the EMR maintained by EPA. BCC has concluded that the site was remediated in 1993 to a level within Queensland Health action levels and on this basis no further remedial action is required at the site.

## 2.8 Queensland Rail Land

As shown on **Figure 2-1** the Airport Link Project study corridor crosses through land owner by Queensland Rail (QR). Not all QR land is listed on the EPA's EMR or the CLR, both QR and the QLD EPA acknowledge that past practices may have resulted in the presence of soil contaminants within any railway land in QLD. Potential contaminating activities that may be associated with railway land in QLD typically include:

- Disposal of ash material;
- Stockpiling of fill and ballast;
- Use of herbicides/pesticides; and
- Petroleum product and oil storage.

QR was contacted regarding land identified within the Airport Link Project study corridor. The following information was provided by QR:

- Typically, QR corridor land is listed on the EMR for hazardous contaminant for arsenic residue from herbicide/pesticide spraying during the 1940s and 50s. Limited soil sampling and testing has been conducted within metropolitan corridors however it is expected that levels of arsenic are

low as procedures were in place to prevent or limit the herbicide treatment in sensitive areas near residential buildings, creeks, etc. The application of herbicide was limited by equipment, only a thin strip spray was directed on the track. Residues of arsenic still exist in track formation soils as arsenates bind well to soil particles. There has been no indication of effects on groundwater in any QR land;

- Railway stations within the Airport Link Project study corridor are passenger stations and typically do not have contamination issues other than minor arsenic contamination in soil along railway track as mentioned above;
- Lot 2 on SP116599 Mayne Railway Yards. The Mayne Railway Yards have been used by QR for over 100 years. Hydrocarbon contamination exists on site. Free product was identified in late 1990s or early 2000s during site excavation activities (**Figure 2-1**). The source of contamination was identified from a leaking diesel reticulation line associated with two old 60,000 Litre (L) Aboveground Storage Tanks (ASTs) and related above ground handling. The USTs were removed during construction of the Inner City Bypass (ICB) and replaced with a 30,000 L AST located toward the centre of the southern yard. Inferred groundwater flow direction is to the northwest towards Enoggera Creek. A contamination risk assessment was conducted in the mid 1990s followed by a regular groundwater monitoring program. In recent years an extraction system was installed to remove free phase product.





# LEGEND

- Observed Hydrogen Plume
- Diesel Reticulation Line
- X Previous Location of UST's

Figure 2-2  
Mayne Railway Yards (Lot 2 on SP116599)



0 25 75m





### 3. Flammable and Combustible Liquid Licensed Locations

Flammable and Combustible Liquids<sup>4</sup> (F&C) stored on properties having current and/or cancelled licenses under the *Dangerous Goods Safety Management Regulation 2001* were identified. A search of BCC's Licensing Web was undertaken to determine the location of current and formerly licensed F&C premises within the Airport Link Project study corridor. General cohesion was identified between the properties listed on the BCC EMR for the Notifiable Activity of "Petroleum Product or Oil Storage" and "Service Station" and properties with F&C licenses.

**Table 3-1** lists 49 properties within the Airport Link Project study corridor that are listed on the EMR and the BCC Licensing Web for historical or current F&C licences. Assessment of this list indicates 15 properties within the Airport Link Project study corridor are not listed on the BCC EMR.

■ **Table 3-1 Flammable and Combustible Liquid licensed premises within the Airport Link Project study corridor**

Lot	Plan	Address	BCC EMR Status Not Listed (O) Notifiable Activity (N) 'Managed' Site (M)	Flammable & Combustible Liquid licence Cancelled = C Approved = A	Licensee
1	RP197326	370 Nudgee Road, Hendra	O	C	Myer Stores Limited
1	RP185614	360 Nudgee Road, Hendra	N	C	Shoestring Car & Truck Rentals
1	101229	330 Nudgee Road, Hendra	O	C	D.Hodge (Caltex Service Station)
5	RP123445	504 Nudgee Road, Hendra	N	C	Noonstone Pty Ltd
1	RP55962	456 Nudgee Road, Hendra	O	C	Stockland Property Ltd
3	RP69634	511 Nudgee Road, Hendra	O	A	Holt Industries
7	RP207206	148 Hedley Avenue, Hendra	O	C	Noonstone Pty Ltd
7	RP33757	221 Hedley Avenue, Hendra	N	C	Osborne Fruit Drinks Pty Ltd
199	RP33613	57 Pleystowe Cres, Hendra	N	A	Brisbane Livestock Transport
5	RP213436	128 Gerler Road, Hendra	N	A	Repco Limited
1	RP100608	70 Lodge Road, Woolloowin	N	A	Gilma Company T/A Matilda Lodge
1	RP106698	75 Emma Street, Woolloowin	N	A	Moreland Energy Retail P/L
1182	SL9293	125 Kedron Park Road, Woolloowin	N	C	QLD University of Technology
3	RP16875	12 Chalk Street, Woolloowin	O	C	Corporation of Religion
1	SP101220	7 Kitchener Road, Kedron	O	C	Ryans Service Station
1	RP88821	59 Kitchener Road, Kedron	O	C	Sci-Fleet Motors Pty Ltd
28	RP26080	41 Turner Road, Kedron	O	C	BCC Division Corporate Services

<sup>4</sup> Flammable and combustible liquids has the meaning provided by Schedule 2 of the *Dangerous Goods Safety Management Regulation 2001*

Lot	Plan	Address	BCC EMR Status Not Listed (O) Notifiable Activity (N) 'Managed' Site (M)	Flammable & Combustible Liquid licence Cancelled = C Approved = A	Licensee
100	RP97196	193 Stafford Road, Kedron	N	C	Calstores Pty Ltd (Caltex Star Stafford)
971	RP818047	201 Stafford Road, Kedron	N	C	BP Stafford Auto Service
146	SL8062	346 Gympie Road, Kedron	N	C	Wyuna Holdings Pty Ltd
103	RP25148	277 Gympie Road, Kedron	N	A	Morland Energy Retail Pty Ltd (Freedom Fuels)
3	RP214094	468 Gympie Road, Kedron	N	C	George Western Foods
1	RP128723	411 Gympie Road, Kedron	N	A	BP Australia Ltd
4	RP98727	110 Gympie Road, Kedron	N	C	Mobil Kedron
733	SL7090	64 Gympie Road, Gordon Park	M	C	Mistearl Pty Ltd
1	RP97924	8 Fuller Street, Lutwyche	N	A	Caltex Lutwyche
25	RP841248	688 Lutwyche Road, Lutwyche	O	C	Kedron Park Service Station
2	RP18462	213 Lutwyche Road, Windsor	N	A	Carsil Detailing Service
24	RP139356	195 Lutwyche Road, Windsor	O	C	Northpoint Metro Pty Ltd
1	RP884140	174 Lutwyche Road, Windsor	N	A	Eureka Operations Pty Ltd
4	RP805240	143 Newmarket Road, Windsor	N	A	Eager Retail Pty Ltd
10	GTP103336	104 Newmarket Road, Windsor		C	BCC Department of Works
652	RP98205	72 Newmarket Road, Windsor		C	4 Wheeled Drive Hire Service
4	RP18962	113D Newmarket Road, Windsor		C	Improved Concrete Services
65	RP80002	108 Lutwyche Road, Windsor	N	A	Bowser & Lever
10	RP202493	9 McDonald Road, Windsor	N	A	Hymix Concrete Pty Ltd
1	RP18456	10 McDonald Road, Windsor	N	C	Brisbane City Council Dept R & H
2	RP155360	81 Lutwyche Road, Windsor	O	C	Kennards Hire
4	RP51885	5A Horace Street, Windsor	N	C	BMG Resources Ltd
2	RP56087	7 Earle Street, Windsor	O	C	Queensland Rail
3	SP173229	141 Campbell Street, Bowen Hills	O	C	Austral Honda
1	RP88204	61 Campbell Street, Bowen Hills	N	C	Campbell Brothers P/L
2	SP147208	41 Campbell Street, Bowen Hills	N	A	Queensland Newspapers P/L
1	RP89174	35 Campbell Street, Bowen Hills	O	C	Sanver Pty Ltd
1	RP167860	47 Brookes Street, Bowen Hills	N	C	Pressroom Graphics Pty Ltd
474	SL12086	574 Gregory Terrace, Bowen Hills	N	C	Numerous entities
6	SP154960	276 Abbotsford Rd, Bowen		C	South Pacific Tyres Retread

Lot	Plan	Address	BCC EMR Status Not Listed (O) Notifiable Activity (N) 'Managed' Site (M)	Flammable & Combustible Liquid licence Cancelled = C Approved = A	Licensee
		Hills			
9	RP158741	48 Abbotsford Rd, Bowen Hills		C	M Watson
1	RP15540	90 Abbotsford Rd, Bowen Hills		C	Larberg Pty Ltd

## 4. Additional Potentially Contaminated Properties

A vehicular inspection was undertaken within commercial and industrial areas within the Airport Link Project study corridor on 5<sup>th</sup> and 6<sup>th</sup> December 2005. The purpose of the inspection was to identify properties that are not on the BCC EMR or CLR and based on existing land use, may have the potential to cause land contamination within the Airport Link Project study corridor.

A total of 52 properties of interest were identified from information obtained through historical aerial photograph interpretation, the BCC 1951 and 1965 Land Use Plans and F&C licence information.

These properties include:

- Mechanical repair workshop (11);
- Railway station (1);
- Service station (9);
- Vacant land/Public open space (10);
- Landscaping and bitumen supply (1);
- Concrete batching plant (1);
- Large Retail/office space (11), including Homemaker City, Lutwyche City and Office Works; and
- Schools/Hospital/Hospice/Retirement Centre (8);

The results of the inspection are presented in **Appendix B**.

## 5. Historical Land Use Review

### 5.1 Historical Land Use Commercial/Industrial Areas

A review of historical land use within the Airport Link Project study corridor was undertaken to identify former commercial/industrial areas. The review was principally based on the BCC 1951 and 1965 Land Use Plans and supplemented by interpretation of historical aerial photographs.

Commercial/industrial land use could be considered as having a higher potential for being associated with the occurrence of a Notifiable Activity or a land use which may cause contamination. Other land uses such as residential would be considered as having a lower potential for being associated with a Notifiable Activity or a land use which may cause contamination.

Historical industrial land use focused along Enoggera Creek, along railway corridors and mainly on the southern portion of the Airport Link Project study corridor. Commercial land use was mainly confined to Lutwyche, Gympie, Kedron Park Roads and railway corridors within the Airport Link Project study corridor.

Historical industrial land use in the north and east of the Airport Link Project study corridor was primarily associated with municipal landfills and activities serviced by the North Coast Railway.

Further investigation is required to confirm if the historical use of the land in these areas have the potential land use associated with a Notifiable Activity or a use which could be considered as having the potential to cause land contamination.

### 5.2 Land Use Change

A review of the historical change of land use within the Airport Link Project study corridor was undertaken. The review was undertaken on a suburb by suburb basis in the following suburbs:

- Bowen Hills;
- Lutwyche;
- Windsor;
- Woolloowin;
- Kedron;
- Clayfield;
- Gordon Park; and
- Albion.

#### 5.2.1 Bowen Hills

Residential properties were located mainly in the eastern section of the Bowen Hills area between 1946 and 2001. Commercial/industrial properties were located within the western and northern sections of Bowen Hills. The focal area for commercial/industrial properties has been and continues to be along the northern and southern banks of Enoggera Creek and includes a mixture of timber storage and treatment, service stations, concrete batching, vehicle workshops and scrap yards. The southern extremity of the commercial / industrial uses was located in O'Connell Street and Horace Street to the north. A significant industrial

precinct within the Airport Link Project study corridor which has not changed is the QR workshop and maintenance yards on the eastern bank of Enoggera Creek. Other designated land uses which have not altered in time include the Exhibition Grounds and the Royal Brisbane Hospital.

### **5.2.2 Lutwyche**

The majority of Lutwyche consists of low-density residential. Lutwyche Road forms the focal point for medium density residential, commercial land use and scattered industrial uses. Interpretation of the 1951 land use plan identified limited public open spaces (Eildon Hill and Windsor Park) or reserves (Windsor State School and Brisbane School of Arts) in the Lutwyche area.

### **5.2.3 Windsor**

Historical land use within Windsor was dominated by low-density residential with commercial uses sparsely distributed along Lutwyche Road. The density of commercial land use along Lutwyche Road has increased to significantly dominate the land use along this transport corridor in Windsor.

### **5.2.4 Kedron**

In 1946 to 1965 the junction of Kedron Park, Lutwyche and Gympie Roads was identified as a major special purpose land use, originally classified as open space reserve (possibly used for landfill during this period), then recreational reserve (Kedron Park Racecourse) followed by special purposes as the Teachers Training College in 1965. Kedron Brook borders the northern boundary of this area. From the early 1950's medium density commercial uses bordered Gympie Road with industrial uses up to Stafford Road. A major industrial park is located mid-way along Stafford Road with the remainder of area predominantly residential.

### **5.2.5 Woolloowin**

The majority of Woolloowin is residential with scattered commercial. Melrose Park dominates this area and was classified as open space in 1951. According to BCC City Design records the site operated as a sanitary landfill between 13/3/1958 and 26/5/1958. The depth of waste is approximately 2m below ground surface over an area of 47,849m<sup>2</sup>. The site was restored to a municipal park in the 1960's. There was one industrial use at the junction of Thorrold Street and Kent Road. The area remains predominantly residential with light commercial use.

### **5.2.6 Clayfield**

In 1951 and 1965, the area was a mixture of commercial, industrial and residential land use. The north coast railway and tram line (terminating at Clayfield) dissected the area with commercial/industrial land uses dominating the border of both the railway and tram lines. There was an even spread of residential and public open spaces including schools and parks. The tram line was removed and over time the industrial/commercial node concentrated around Sandgate Road and the East-West Arterial i.e. The Toombul Shopping Centre. A significant grouping of light industry activities was located east of the Airport Link Project study corridor in Albion and general industry was located to the north east of the Airport Link Project study corridor along Nudgee Road, Windsor.

### 5.2.7 Gordon Park

Historical land use within Gordon Park was dominated by low-density residential. Kedron Brook borders the southern boundary of Gordon Park

### 5.2.8 Albion

A significant grouping of light industry activities was located east of the Airport Link Project study corridor in Albion. The commercial/industrial properties were located within the southern section of Albion with the focal area of commercial/industrial properties was and continues to be along the northern banks of Enoggera Creek.

## 5.3 Assessment of Historical Aerial Photographs

A review of historical aerial photographs and the BCC 1951 and 1965 Land Use Plans was undertaken to identify potentially contaminating land uses. The purpose of the historical review was to:

- Where possible, identify properties which may have had a Notifiable Activity (e.g. service station) that were not recorded on the BCC EMR/CLR database; and
- Where possible, identify areas likely to contain commercial/industrial activities or having had such an activity that could have a high probability to have caused land contamination (as opposed to other activities such as residential use which would be considered as having a lower probability of causing land contamination).

A summary of historical aerial photographs reviewed is detailed in **Appendix C** and **Table 5-1** lists the reviewed historical aerial photographs.

### ■ Table 5-1 Historical Aerial Photographs

Year	Reference	Approximate Scale
1946	Brisbane City Council Series Project 46	1:15,900
1955	NRM, Samford QAP549	1:24,000
1955	NRM, Samford QAP542	1:24,000
1960	Greater Brisbane 60 QAP1090	1:15,900
1965	NRM, Samford QAP1646	1:32,000
1969	NRM, Stage Two Freeways Brisbane, Q1967_Run 2A, Run 9, Run 10	1:4,000
	NRM, Birkdale-Sandgate Road; QAP1939_Run 7	1:11,900
1974	NRM, Brisbane Flood 1974, Q2757_Run 5	1:4,900
1978	NRM, Brisbane QAP3604_Run 12	1:25,000
	NRM, Caboolture QAP3604_Run 13	1:25,000
1987	NRM, Caboolture 9443_QAP4621_Run 13	1:25,000
	NRM, Caboolture 9443_QAP4621_Run 12	1:25,000
	NRM, Brisbane 9543_QAP4687_Run3	1:9,900
1994	NRM, Brisbane QAP125332_Run 7	1:20,000
	NRM, Brisbane QAP5332_Run 8	1:20,000
2001	AUSIMAGE, Brisbane	1:2,000

The findings of the historical review were cross-referenced with the BCC EMR/CLR search results to assist with identifying additional properties having a potential Notifiable Activity.

Potential exists for a Notifiable Activity not being identified or not easily identifiable from aerial photograph interpretations. For example, there are many properties where the buildings obscure the activity undertaken on the property.

The review of historical aerial photographs, the BCC 1951 and 1965 Land Use Plans and file searches provided by BCC identified properties that contain industrial properties and potential Notifiable Activities.

### **5.3.1 Historical Aerial Photograph Review of Airport Link Project Study Corridor**



In summary, based on the historical review, 10 properties (Sites A to J) were identified within the Airport Link Project study corridor that were not identified in the BCC WebBAS searches. Historical information relating to these properties is provided in **Table 5-2**. Site locations and presented in **Figure 5-1** and **Figure 5-2** and included:


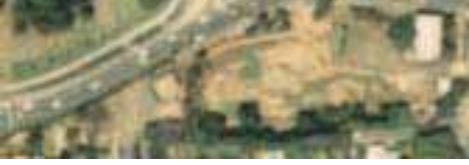
- Service station (Site A);
- Quarry/Petroleum Product Storage (Site B);
- Railway yard/Wood treatment/Sawmill (Site C);
- Scrap yard (Site D);
- Petroleum Product Storage (Sites E and G);
- Vacant Industrial Land (Site F);
- Mechanical Repair Shop (Site H);
- Motor Vehicle Servicing (Site I); and
- Industrial Sites (Site J).





■ Table 5-2 Historical properties with a potential Notifiable Activity within the Airport Link Project study corridor



Site Number	Real Property Description	Description of Site History	Historical Aerial photography
A	Lot 25 on RP841248 (formerly Lots 2 and 3 on RP45943) 690-4 LUTWYCHE RD LUTWYCHE	BCC City Design records do not indicate that this site held a F&C licence, nor is it listed on the EMR/CLR. Historical BCC building records indicate that the site operated as a service station and motor vehicle workshop from 1932 until late 1980's. BCC acquired ownership of the property in November 1995 and the southern portion of the lot was resumed for the construction of an additional laneway on Lutwyche Road. This area of the lot was known to contain at least three underground storage tanks and associated pipe work. BCC records indicate that an investigation was conducted by Dames and Moore in 1992 where it is understood underground tanks and contaminated soil was removed, however, no record of the report was located during a later investigation by OTEK Australia Pty Ltd in 1994. This latter investigation on the remaining portion of the original property revealed Benzene, Toluene, Ethylene, Xylene, total petroleum hydrocarbons, lead and asbestos contamination above EPA guidelines. In 1969, historical aerial photography reveals two rectangular buildings and a bowser island present on the concrete forecourt facing Lutwyche Road. The lot contains a rectangular shaped building (northern portion of the site) that appears to have two canopies, one on the western side of the building and the other on the eastern side bordering onto intersection with Lutwyche, Kedron Park and Gympie Roads. The building has a chimney or stack and the building is separated from another building by a concrete pavement. The southern building consists of a smaller rectangular shaped building and a canopy on its eastern side.	 
	Service Station	In 1994, buildings have been removed and the adjacent house remains. Note the additional lane on Lutwyche Road.	 1994



Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		In 2005, the site is vacant land (view looking north towards the motel/hotel on the corner). Depression in ground, collection of storm water, potentially location of former underground storage tank.	 <p>2005</p>
B	<p>Lot 882 on SL8070</p> <p>Quarry/Petroleum Product Storage</p>	The 1951 BCC Land Use Plan designates this property as industrial use. The historical aerial photography indicated significant land surface disturbance suggesting land use may have been a quarry or landfill. A search of BCC City Design records does not reveal this property as the location of a former municipal landfill.	 <p>1955</p>




Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		<p>In 1969, there is a larger dwelling on the eastern boundary with Lutwyche Road. The northern section of the site is heavily vegetated around the boundary but the site suffers significant land disturbance the cause is unknown, possibly vehicular disturbance. There are three smaller buildings on the western portion of the site</p>	 <p>1969</p>
		<p>Vegetation on northern portion of the block has been significantly reduced. L-shaped building erected on the western boundary. Increased amount of surface disturbance in central portion of the site.</p>	
		<p>Three rectangular buildings constructed on the western boundary. Further thinning of vegetation on eastern section of site.</p>	 <p>1994</p>

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
C	<p>Lot 2 on RP56087 7 Earle Street, Windsor</p> <p><b>Railway Yard, Sawmill and Timber Treatment</b></p>	<p>BCC 1951 and 1965 Land Use Plans designate this property as industrial land use. F&amp;C licence was held for the premises and search of BCC records indicate the property has been used by Queensland Rail for railway maintenance and chemical storage, motor vehicle workshop and asphalt manufacturing. The site is not listed on the EMR/CLR.</p> <p>Historical aerial photography reveals that in 1955 the lot was generally vacant. There are two small buildings (likely to be sheds) on the north western corner of the site. On the central northern boundary there is a larger square building. There is minor surface land disturbance on the eastern boundary. A pipeline crosses Breakfast Creek and onto the property, pipeline is underground. North of the pipeline and directly east of the square building are two circular structures, likely to be fans.</p> <p>In 1960, pipeline across the river has been removed. Significant site disturbance with the development of a timber treatment facility/sawmill. The southern portion of the site contains timber storage and there appears to be a thin depression (perhaps a dip) on the western side of the property. Vehicles are parked on the central/northern portion of the lot.</p>	 <p>1955</p>  <p>1960</p>




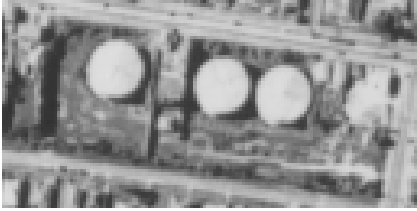
Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		<p>By 1969, two long, thin rectangular buildings have been constructed in the centre of the lot, covering the area otherwise covered by the dip.</p>	 <p>1969</p>
		<p>By 1974 there have been extensions to the major buildings on the southern boundary. Timber stockpiles moved to the northern-central portion of the site. Riparian vegetation still intact.</p> <p>By 1994 the site had been demolished with buildings and stockpiles removed.</p>	 <p>1974</p>

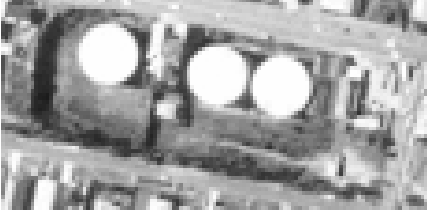

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
D	<p>Lot 153 on RP861394 153-4 Campbell St. Bowen Hills, Lot 1 on RP152622 67 Bowen Bridge Rd. Bowen Hills, Lot 65 on RP861394 65-4 Bowen Bridge Rd. Bowen Hills, Lot 3 on RP207249 61-A Bowen Bridge Rd. Bowen Hills, Lot 2 on RP1526622 67-A Bowen Bridge Rd. Bowen Hills.</p> <p><b>Scrap Yard</b></p>	<p>BCC 1951 and 19565 A rectangular shaped building runs along the entire eastern boundary. The remainder of the central and southern portions of the lot consists of two and a half rows of scrap metal or tyres. There are a series of smaller square and rectangular shaped buildings on the northern portion of the lot.</p>	
		<p>The central and southern portions of the premises are tidier with an area segregated via a fence on the southern side. No materials stockpiled in that corner.</p>	

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Minor expansion to buildings and scrap metal/tyres no longer visible.	
E	825 on SL10177 4-74 Gellibrand Street, Clayfield East-West Arterial Unknown usage <b>Petroleum Product Storage</b>	BCC 1951 and 1965 land use plans indicate this property is used for use. There are no records of F&C licence for this site. Historical aerial photograph interpretation indicates five rectangular buildings on site. No evidence of stacks or discharges to air or surface water. Two circular indentations on the ground surface may be representative of USTs or previous above ground storage tanks. Significant ground disturbance no evidence of waste being stored openly on ground surface. Site usage is uncertain from aerial photography.	 1965
		By 1978 there is no evidence of potentially contaminating activities. Expansion to building complexes. No visible evidence or waste or hazardous material stored on open ground.	 1978

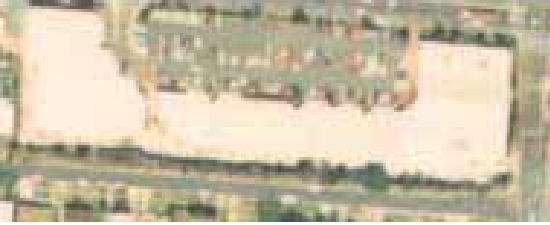

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		In 2005, the site is now the Hendra Secondary College.	 <p>2005</p>
F	<p><b>Vacant</b>  <b>1Butterfield Street</b>  <b>Lot 3 on RP9939</b>                      Hazardous Contaminants</p>	<p>Reserve                      Next to BP, scrap on-site,                      Unknown site use</p>	





Site Number	Real Property Description	Description of Site History	Historical Aerial photography
G	<p>Lot 7 on RP223902 214 Lutwyche Road, Windsor (Freedom Furniture) Petroleum Product Storage</p>	<p>The 1951 and 1965 Land Use Plans do not designate this property for industrial use. BCC City Design do not hold any records on the history of site use or any records of building approvals prior to 1990. No F&amp;C licence has been issued for the site. Historical aerial photograph interpretation indicates that in 1946 to at least 1987 the site contained three (3) large circular above ground storage tanks of similar sizes. The shadows on the western portion of the premises suggest that the storage compound is partially constructed below the surrounding ground surface. One tank is located on the northern portion of the lot and separated from the two southern tanks by a small rectangular compound which contains two rectangular buildings, one on the road verge and possibly a road loading gantry. This building compound is raised to an elevation similar to surrounding road. Bunding of the tanks appears in 1955. There is another compound containing two square buildings directly south of the southern most tank. This compound is within the incised tank storage area. There is also significant ground disturbance on the south eastern corner of the site.</p> <p>No indication of processing infrastructure or extensive above ground pipe work suggesting all buried.</p>	 <p>1946</p>  <p>1955</p>


Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		<p>By 1978, the bunds surrounding both of the southern tanks have been reinforced and enlarged. The northern tank compound has been surrounded by a high fence, visual barrier for surrounding properties. A building has been constructed between the northern tank and the southern tanks to the right of the pre-existing building and it adjoins Lutwyche Road. This may be a loading gantry or canopy for a service station.</p>	 <p>1978</p>
		<p>By 1987 the tanks, bunds and old building have been removed. Building still present in central portion of eastern boundary. No evidence of ground excavations/disturbance within vicinity of former tank locations to indicate removal of underground pipe work. Site appears level indicating soil above the elevation of the tanks may have been removed or alternatively that the site was backfilled.</p>	 <p>1987</p>



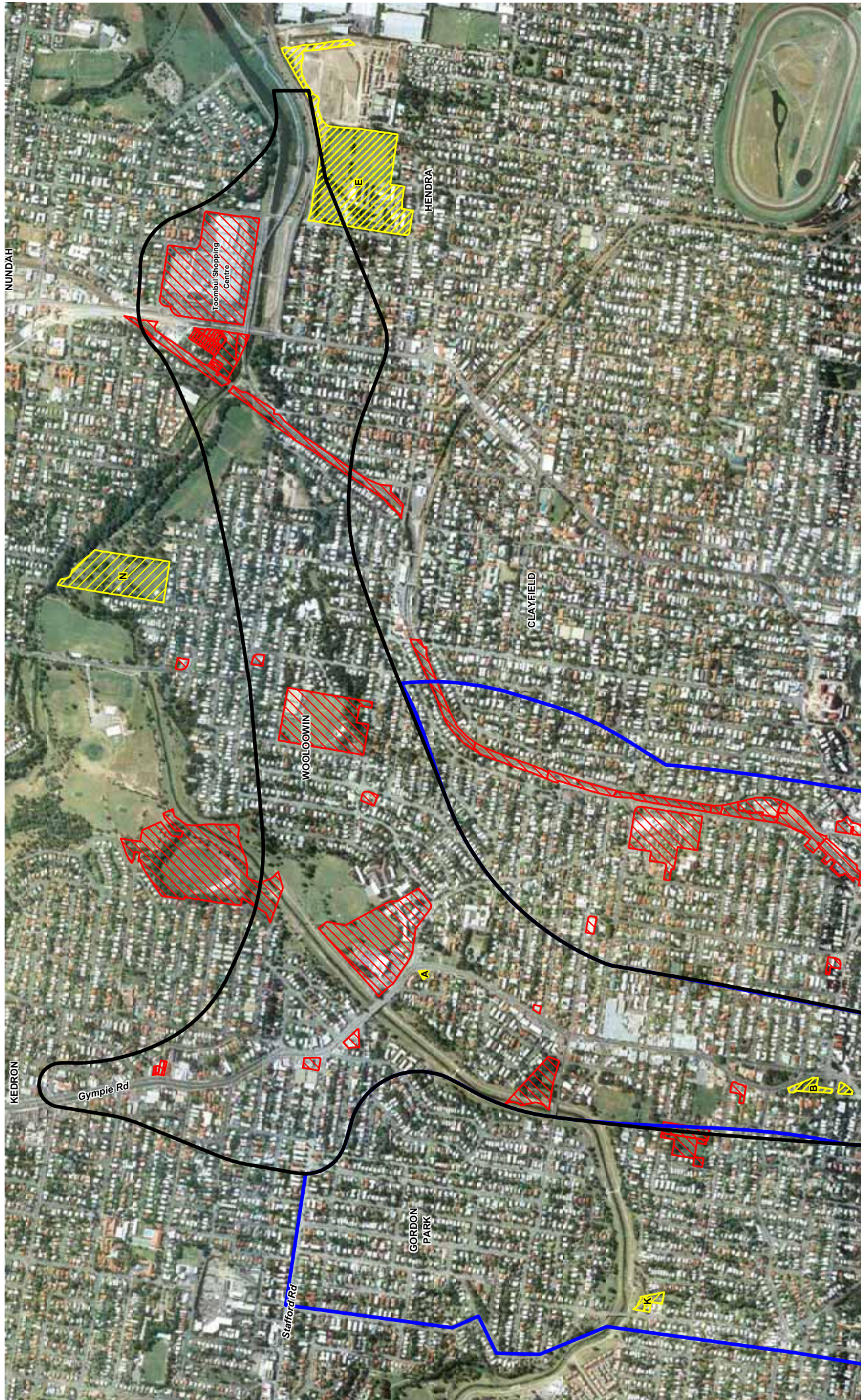
Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		<p>By 1994, the site has been completely redeveloped to the Freedom Furniture complex consisting of an eastern facing U-shaped building which borders the western boundary with Rosemount Terrace. A bitumen surfaced car park exists on the central-eastern portion of the site bordering Lutwyche Road. The entire site is covered with a hard pavement.</p>	 <p>1994</p>
		<p>In 2005 the site contains the Freedom Furniture and Homemaker City retail and commercial precinct.</p>	 <p>2005</p>

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
<b>H</b>	Mechanical repairer 23-4 Earle Street, Windsor Lot 3 on RP52982	Industrial Historical use as industrial, potential risk of hazardous contaminants	
<b>I</b>	Auto Leaders 78 Lutwyche Road, Windsor Lot 53 on RP80002	Commercial	



Site Number	Real Property Description	Description of Site History	Historical Aerial photography
J	<p>21-57 Rosemount Street</p> <p>Block between Nicholas &amp; Northey Streets</p> <p>Lots 61 to 69, 72 and 76 on RP18524 and Lot 77 on RP898070.</p> <p>Victoria St Windsor</p>	<p>Industrial</p> <p>Row of industrial sites, mixture of timber stores, car servicing, surgical storage and printer</p>	





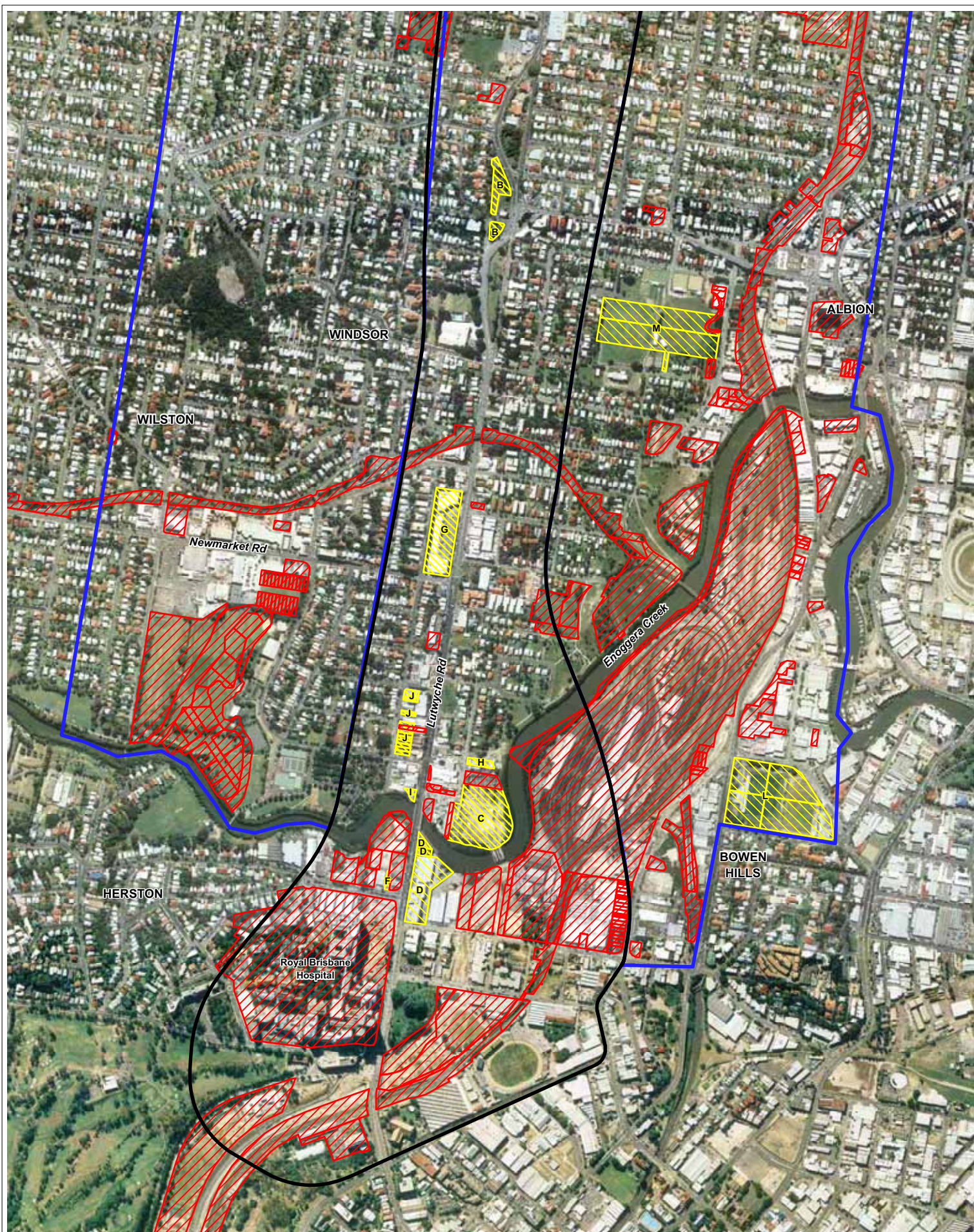
**LEGEND**

- EMR Listed Site
- Historical Potential Notifiable Activity
- Airport Link Corridor
- 1km Groundwater Drawdown Area

**Figure 5-1**  
**BCC EMR Listed Properties and Other High Risk Locations**  
**Northern Section**



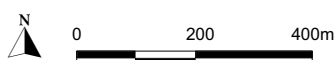




# LEGEND

- ▨ EMR Listed Site
- ▨ Historical Potential Notifiable Activity
- Airport Link Corridor
- 1km Groundwater Drawdown Area

**Figure 5-2**  
BCC EMR Listed Properties and Other High Risk Locations  
Southern Section





Of the properties presented in **Table 5-2** the following three properties the have potential to be ‘high risk’:

- Site A - Lot 25 on RP8411248 (690-694 Lutwyche Road, Kedron): The site operated as a retail motor fuel outlet and motor vehicle workshop since 1932 and was decommissioned in 1992 to make way for an extra lane on Lutwyche Rd. Hollingsworth Dames & Moore conducted an ESA in April 1992. 8 Underground Storage Tank (USTs) were known to exist on site, an additional 3 were uncovered during excavation activities. A total of 11 USTs were removed from the site in March 1992. The soil was excavated to 1.4 m and backfilled with clean fill. This area is now part of Lutwyche Rd. Soil spoil was removed to a BCC Depot on Hamilton Rd. Chermshire. Hydrocarbon contaminated soil remains at least 1.4 m bgs. OTEK conducted an ESA at 684, 690 & 694 Lutwyche Rd. in November 1995. Benzene, toluene, ethylbenzene and xylene (BTEX) exceeded Queensland Department of Environment and Heritage (QDEH). Concentrations of PAH, metals, polychlorinated Biphenols (PCBs), organochlorine pesticides (OCP) and organophosphate pesticides (OPP) were detected or either below lab detection or below QDEH criteria. Volatile Organic Compounds (VOCs) were identified in the field screening of soils.
- Site C - Lot 2 on RP56087 (7 Earle Street, Windsor): The property has been used historically for numerous potentially contaminating activities including railway depot, timber storage yard/mill, petroleum product storage;
- Site E – Lot 3 on RP9939 (1 Butterfield Street, Windsor). Vacant land located next to Former Service Station at 54-4 Bowen Bridge Rd, Herston 4006 (**Table 2-4**); and
- Site G - Lot 7 on RP223902 (214 Lutwyche Road, Windsor): Originally the site was quarried from 1910 onwards. In 1939, the quarry was resumed by the Navy and three large ASTs were constructed by Evans Deakin. A pipeline connected the tanks with Newstead Wharf. In the late 1970’s the tanks were removed and the quarry was filled with material obtained from flood mitigation work (Section 2 Windsor’s Rich Heritage). Known to have been a bulk hydrocarbon storage facility between 1946 and 1978, although the contents of the above ground storage tank are unknown. The site is currently the Homemaker City commercial precinct.

A detailed assessment of each property (i.e. the preparation of a Stage 1 Site History) would be required to assist with clarifying the identification of these properties prior to construction activities.




#### **5.4 Historical Aerial Photograph Review of 1 km Groundwater Drawdown Area**




A review of historical aerial photograph was also undertaken of the 1km Groundwater Drawdown Area. In summary, based on the historical review, 4 properties (Sites K to N) were identified within the 1km Groundwater Drawdown Area that were not identified in the BCC WebBAS searches. Historical information relating to these properties is provided in **Table 5-3**. Site locations and presented in **Figure 5-1** and **Figure 5-2** and included:




- Petroleum Product Storage (Site K);
- Possible Landfill/Historical Army Base (Site L); and
- Possible Landfill (Site M and N).









■ Table 5-3 Historical properties with a potential Notifiable Activity within the 1 km Groundwater Drawdown Area

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
K		Site is vacant. No significant features.	 1946
	Lot 10 On SP131058 85-4 Gilbert Road Lutwyche And Lot 9 on SP103003 79-4 Gilbert Road Lutwyche <b>Possible Landfill</b>	Three rectangular buildings have been added to the street front of the site and what appears to be a large square building to the back. An access road wraps around the site. Site possibly used for some industrial/commercial use	 1955
		The three rectangular buildings are no longer present along the street front.	 1969

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Two spherical structures along street front (may be possible temporary liquid storage tanks).	 1978
		Site has been cleared.	 1994
		Three large buildings, possibly houses, have been erected on the site.	 2001




Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Camp Perry Park 1944. Site used as a barracks. Grandstand seen in this image suggests that prior to WW2 barracks the site was a sporting field and historically possibly some sort of landfill.	 1944  2002
L	Lot 136 on B123430 – 93 Abbotsford Rd Bowen Hills, Lot 135 on B123430 – 85 Abbotsford Rd Bowen Hills, Lot 137 on SL11563 – 31-4 Edmondstone Rd Bowen Hills and Lot 138 on SL11563 – 61-4 Edmondstone Rd	5 large, rectangular buildings and 3 smaller buildings observed. A large area is cleared and appears to be utilised by some sort of traffic area. Site known during WW2 as 'Camp Perry Park' and was used as a temporary barracks. Buildings probably constructed for this purpose. According to website, 'The US Navy had the following units at Camp Perry Park: N.S.D. Main Office; EM Barrack; RP10 and Reproduction Section; EM Clothing and Ships Store; Medical Supply Depot.'	 1946




Site Number	Real Property Description	Description of Site History	Historical Aerial photography
	Bowen Hills Possible Landfill	Buildings remain intact.	 1955
			 1969
		Transformed sporting grounds at Perry Park.	 1978

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Buildings removed in southeast corner of site.	 1987
		All buildings have been removed to make way for a second playing field.	 1994
			 2001



Site Number	Real Property Description	Description of Site History	Historical Aerial photography
M	Lot 3 on RP174608 58 McDonald Road Windsor And Lot 2 on RP174608 56 McDonald Road Windsor <b>Possible Landfill and Historical Army Base</b>	Windsor Park - sporting ovals that appear quite new due to the surface being somewhat disturbed and no markings of the fields. Unknown activities of prior to 1946 (possible landfill).	 1946
		Clearly marked cricket pitches on each of the ovals. Some vegetation growing on the parkland surrounding the oval.	 1955
		No significant change	 1969
		A large grandstand has been constructed between the two ovals.	 1978

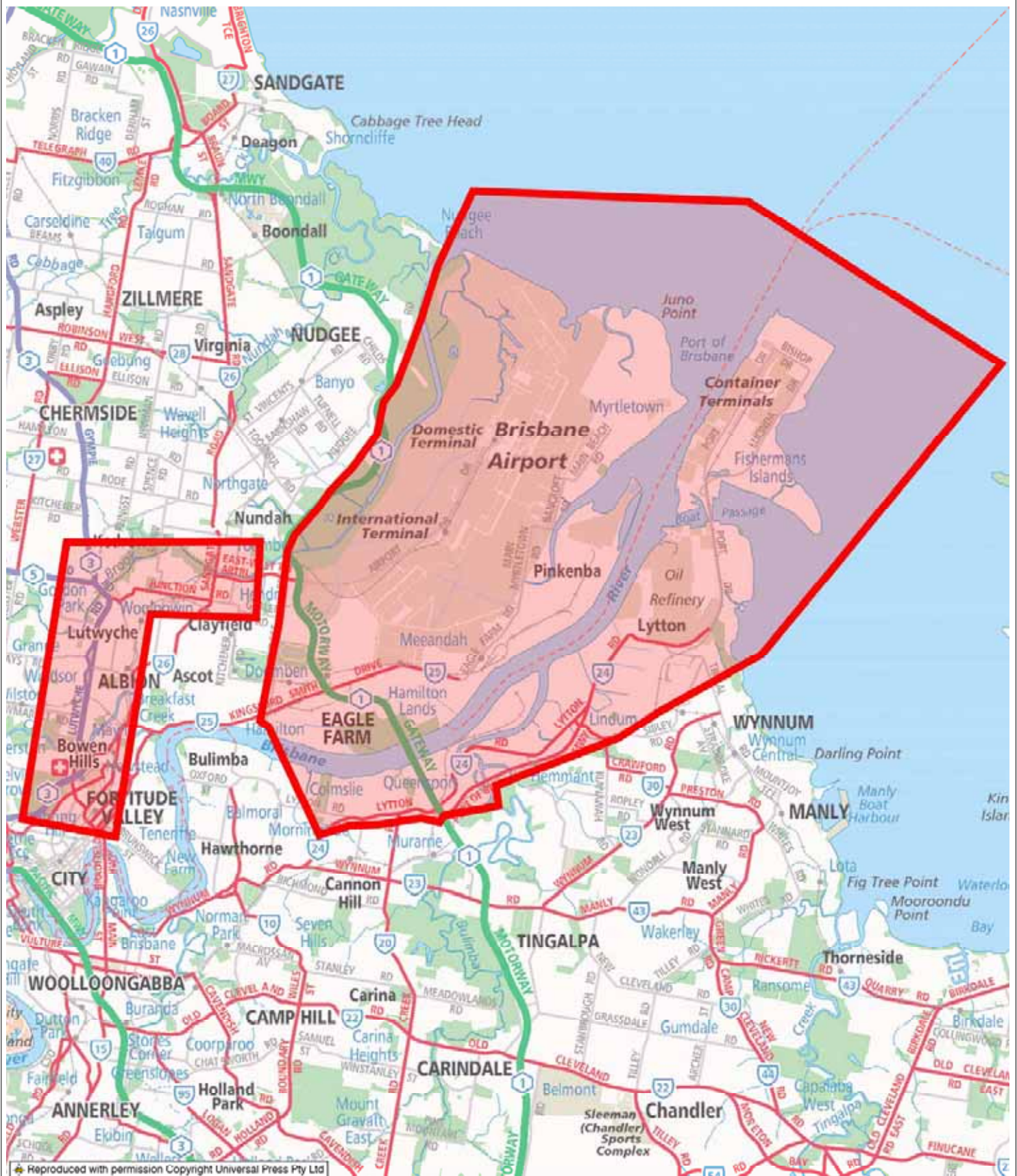
Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Sporting ovals that have remained mostly unchanged since 1946.	 2001
N	Lot 2 on RP33813 61 Bertha St Woolloowin	Open space parkland south of Kedron Brook.	 1960
	Possible Landfill	No significant change	 1969

Site Number	Real Property Description	Description of Site History	Historical Aerial photography
		Sports field more evident with building located in southwest corner of site.	 1978
		No significant change.	 1987
		No significant change.	 1994

## 6. Spoil Disposal Sites

Proposed spoil disposal sites and transport options identified for the Airport Link Project are presented in **Figure 6-1** and **Figure 6-2**. Spoil disposal sites have not been investigated as part of this report.





## LEGEND

■ EPBC Search Area

Figure 6-1

Proposed Spoil Disposal Study Area

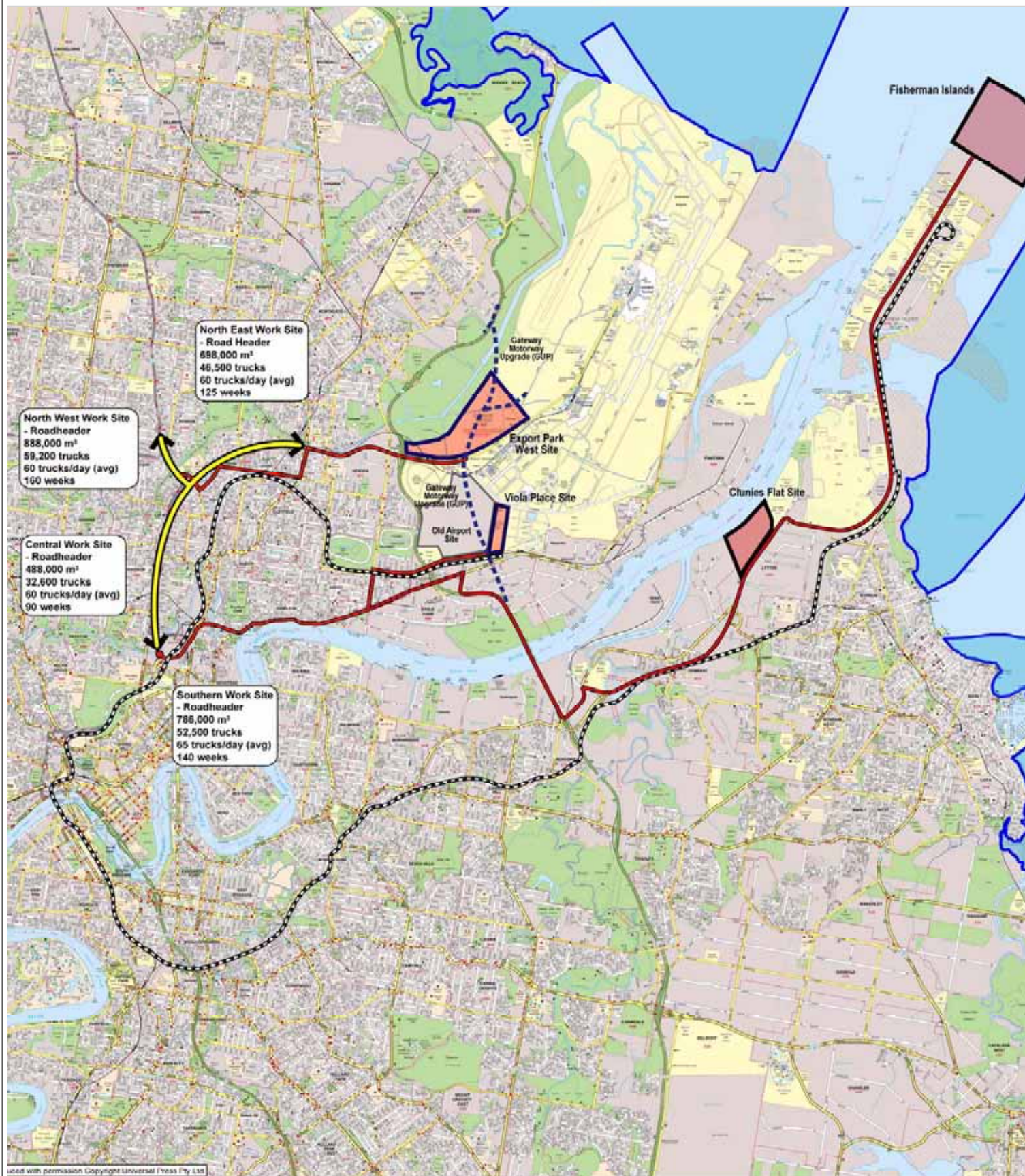


 Airport Link

 SKM  Connell Wagner  
JOINT VENTURE







## LEGEND

- Road Haulage Options
- - - Rail Options
- Ramsar (Moreton Bay)



0 50 100m

Figure 6-2

Potential Spoil Placement Sites  
& Transport Options





## 7. Impact Assessment and Mitigation Strategies

### 7.1 Benefits and Impacts

A total of 230 properties within the Airport Link Project study corridor, from data supplied by BCC's WebBAS system have been identified on the EMR (**Figure 2-1** and **Appendix A**). The QLD EPA has advised that contaminated site investigation reports exist for 7 of these properties that will have a direct impact on the proposed alignment for the Airport Link Project (**Table 2-4**). Of the 7 sites, the following sites are subject to a SMP:

- A former service station site at 64 Gympie Road, Kedron (Lot 733 on SL7090), and now JB Hi-Fi; and
- 15 Butterfield Street, Herston (Lot 51 on SL801574).

The Airport Link Project will require the excavation of material from properties listed on BCC's EMR. Under Section 424 of the *EP Act* a person must not, without a disposal permit, remove and treat or dispose of contaminated soil from properties recorded in EPA's EMR.

Disposal permits identify the amount of soil to be removed, how it is to be transported and how it must be disposed of in a licensed/approved disposal facility. Advice will need to be sought from the QLD EPA regarding disposal permit requirements for material excavated from properties listed on the EMR, properties containing unanticipated contamination and properties inadvertently contaminated during construction activities.

The level of impact that a potential contaminated site may have on the Airport Link Project due to the disturbance of contaminated soil and/or groundwater is currently unknown. Information outlined in this report has identified properties that are listed on BCC's EMR for having a Notifiable Activity (Notifiable Activities are those that cause or are likely to cause contamination). Therefore sites located within the Airport Link Project study corridor that have been identified on BCC's EMR for a site specific Notifiable Activity have a greater potential to impact the Airport Link Project than a site that has not been identified as having a Notifiable Activity. To accurately evaluate the impacts of each property, having a Notifiable Activity, will require the site to be subjected to a detailed site history investigation conducted as part of a contaminated site assessment, in accordance with national guidelines.

Impact assessment and mitigation measures for the Northern Busway Project have been assessed in **Table 7-1**.

**Table 7-1** identifies properties within the Airport Link Project study corridor where the disturbance of potentially contaminated properties is likely to occur. Property information obtained from the BCC City Design report (2005) for contaminated site identified in **Table 7-1** is provided in **Appendix A**. **Table 7-1** proposes mitigation measures to reduce the potential impacts during design and construction. It also indicates where considerable uncertainty exists over the nature and extent of contamination necessitating further investigations prior to the construction stages of the Airport Link Project. Information detailed in the Reference Project (BCC 2006) was used to identify direct

property impacts to identified EMR listed properties and other identified potentially contaminated properties.

Site activities relating to excavation, removal and/or disposal of soil must ensure that environmental harm is prevented. To achieve this outcome, specific procedures must be developed and implemented. The procedures should be developed by a person whose qualifications and experience complies with the requirements of section 381 of the EP Act. A suitably qualified individual must also supervise the activities. Procedures must be developed prior to commencement of site activities and must consider as a minimum:

- The staging of site activities to minimise the extent of disturbed areas and to reduce the potential for contaminated run-off;
- Any odour emissions which occur during or as a result of excavation activities must be immediately mitigated by use of water sprays, odour suppressants and/or the odour-causing material covered by plastic or mulch;
- Dust emissions and their management;
- Stormwater controls around stockpiles and/or excavations to minimise the potential for the off-site migration of contaminants;
- Minimising the exposure of humans and the environment to potentially contaminated material during excavation activities;
- Controls for material haulage (e.g. covering loads, wetting material to reduce airborne dust emissions);
- Documentation of all contaminated material transport operations (including the descriptions of processes, personnel and organisations involved in the removal, transportation and receipt of contaminated material); and
- Throughout construction and development phases, details of inspections, the monitoring of contaminated material movement and disposal, and Workplace Health & Safety compliance need to be documented.

■ Table 7-1 Impacts and Mitigation Measures

Airport Link Corridor Section	Potentially Contaminated Properties Impacted	BCC's EMR Notifiable Activity	Construction Activities	Impact Assessment	Further Investigation	Impact Mitigation
Southern Connection SC_2B	BCC's EMR Listed Property Impacts Airport Link 46, 48 & 50 Mayne Rd. Bowen Hills (Lot 2 on Plan RP9893, Lot 2 on Plan RP52004, & Lot 3 on Plan RP98241, respectively).		Printing	Construction activities have the potential to disturb and expose potential contaminants that may be present within these properties. The EPA has advised that no contaminated land investigation reports relating to these properties are currently on file.  Additional BCC EMR listed properties have also been identified in this Southern Connection and have the potential for contaminated soil and/or groundwater being disturbed from construction activities. The additional properties have been identified in Figure 5.1 and Figure 5.2. The EPA has identified four of these additional properties listed on the EMR as having contaminated land investigations undertaken (Table 2.4). Reports relating to these properties are on file with the QLD EPA.	Preparation of Site History Reports during the planning stages of the project for each of these properties in accordance with EPA guidelines will be required to accurately identify past land uses that may have resulted in the presence of soil and/or groundwater contamination. Where recommended by the Site History Report, additional contaminated land investigations may be required to determine the actual nature and extent of contamination that may be present.	Allowance for the presence of contaminated material may be a key consideration in the design and construction of this section. Key issues of concern may include, capping of contaminated soils, collection and disposal of contaminated groundwater within excavations, and the disposal of contaminated soil off-site. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).
	Lot 1 on Plan RP55684	Scrap Yard				
	172-4 Lutwyche Rd, Windsor (Lot 1 on RP196278)	BCC Site of Interest	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.			

Airport Link Corridor Section	Potentially Contaminated Properties Impacted	BCC's EMR Notifiable Activity	Construction Activities	Impact Assessment	Further Investigation	Impact Mitigation
Southern Connection SC_2C	46, 48 & 50 Mayne Rd. Bowen Hills (Lot 2 on Plan RP9893 - Lot 2 on Plan RP52004 - & Lot 3 on Plan RP98241 - respectively).	Printing	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.	Construction activities have the potential to disturb and expose potential contaminants that may be present within these properties. The EPA has advised that no contaminated land investigation reports relating to these properties are currently on file.  Additional BCC EMR listed properties have also been identified in this Southern Connection and have the potential for contaminated soil and/or groundwater being disturbed from construction activities. The additional properties have been identified in Figure 5.1 and Figure 5.2. The EPA has identified four of these additional properties listed on the EMR as having contaminated land investigations undertaken (Table 2.4). Reports relating to these properties are on file with the QLD EPA.	Preparation of Site History Reports during the planning stages of the project for each of these properties in accordance with EPA guidelines will be required to accurately identify past land uses that may have resulted in the presence of soil and/or groundwater contamination. Where recommended by the Site History Report, additional contaminated land investigations may be required to determine the actual nature and extent of contamination that may be present.	Allowance for the presence of contaminated material may be a key consideration in the design and construction of this section. Key issues of concern may include, capping of contaminated soils, collection and disposal of contaminated groundwater within excavations, and the disposal of contaminated soil off-site. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).
	Lot 1 on Plan RP55684	Scrap Yard				
	172-4 Lutwyche Rd, Windsor (Lot 1 on RP196278)	BCC Site of Interest				



Airport Link Corridor Section	Potentially Contaminated Properties Impacted	BCC's EMR Notifiable Activity	Construction Activities	Impact Assessment	Further Investigation	Impact Mitigation
City Connection CC_2B	None	-	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.	No potential contaminated land impacts identified during or following construction. No BCC EMR listed properties have been identified in this City Connection; however an old quarry (Site B) was identified to the north of the connection from historical photograph interpretations (Table 5.2).	Refer to the EMP to identify and manage unanticipated contamination (Appendix D).	No specific mitigation measures required to be incorporated into the Airport Link Design at present. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).
Gympie Road Connection GR_9B	(Site A) Vacant Land, 690-4 Lutwyche Rd, Windsor (Lot 25 on Plan RP841248)	Service Station	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.	All works have the potential to disturb and expose potential contaminants that may be present within these properties. The EPA has advised that contaminated land investigations have been undertaken for Lot 25, Lot 733 and Lot 4. Additional BCC EMR listed properties have also been identified in the Gympie Road Connection and have the potential of contaminated soil and/or groundwater being disturbed from construction activities. The additional properties have been identified in Figure 5.1 and Figure 5.2.	Review contaminated land investigations carried out on Lots 25, 4 and 733 and determine if further assessment is required. Where recommended by previous Site History Report, conduct additional contaminated land investigations, as required, or comply with SMP. Preparation of Site History Reports during the planning stages of the project for other identified EMR listed properties in accordance with EPA guidelines will be required to accurately identify past land uses that may have resulted in soil and/or groundwater contamination. Where recommended by the Site History Report, additional contaminated land	Allowance for the presence of contaminated material may be a key consideration in the design and construction of this section. Key issues of concern may include, capping of contaminated soils, collection and disposal of contaminated groundwater within excavations, and the disposal of contaminated soil off-site. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).
	Emergency Services Complex, 125 Kedron Park Rd, Woolloowin (Lot 1182 on Plan SL9293)	Landfill				
	JB Hi-Fi, 64 Gympie Road, Kedron(Lot 733 on SL7090)	Former Service Station				
	Ampol Service Station, 110 Gympie Rd, Kedron (Lot 4 on Plan RP98727)	Service Station				

Airport Link Corridor Section	Potentially Contaminated Properties Impacted	BCC's EMR Notifiable Activity	Construction Activities	Impact Assessment	Further Investigation	Impact Mitigation
					investigations may be required to determine the actual nature and extent of contamination.	
Gympie Road Connection GR_11B	(Site A) Vacant Land, 690-4 Lutwyche Rd, Windsor (Lot 25 on Plan RP841248)	Service Station	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.	All works have the potential to disturb and expose potential contaminants that may be present within these properties. The EPA has advised that contaminated land investigations have been undertaken for Lot 25, Lot 733 and Lot 4. Additional BCC EMR listed properties have also been identified in the Gympie Road Connection and have the potential of contaminated soil and/or groundwater being disturbed from construction activities. The additional properties have been identified in Figure 5.1 and Figure 5.2.	Review contaminated land investigations carried out on Lots 25, 4 and 733 and determine if further assessment is required. Where recommended by previous Site History Report, conduct additional contaminated land investigations, as required, or comply with SMP. Preparation of Site History Reports during the planning stages of the project for other identified EMR listed properties in accordance with EPA guidelines will be required to accurately identify past land uses that may have resulted in soil and/or groundwater contamination. Where recommended by the Site History Report, additional contaminated land investigations may be required to determine the actual nature and extent of contamination.	Allowance for the presence of contaminated material may be a key consideration in the design and construction of this section. Key issues of concern may include, capping of contaminated soils, collection and disposal of contaminated groundwater within excavations, and the disposal of contaminated soil off-site. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).
	Emergency Services Complex, 125 Kedron Park Rd. Woolloowin (Lot 1182 on Plan SL9293)	Landfill				
	JB Hi-Fi, 64 Gympie Road, Kedron(Lot 733 on SL7090)	Former Service Station				
	Ampol Service Station, 110 Gympie Rd, Kedron (Lot 4 on Plan RP98727)	Service Station				

Airport Link Corridor Section	Potentially Contaminated Properties Impacted	BCC's EMR Notifiable Activity	Construction Activities	Impact Assessment	Further Investigation	Impact Mitigation
Sandgate Road Connection SR_6	None	-	Surface works, road modifications, bridge structure, tunnel transition cut and cover tunnel and driven tunnel.	No potential contaminated land impacts identified during or following construction. However, potential contaminants are likely to be localised on the BCC EMR listed properties located on either side of Sandgate Road north of Shulz Canal and south of the East-West Arterial Rd (Site F). There is potential for migration of possible contaminants outside property boundaries into shallow soils due to the close proximity of Shulz Canal.	Refer to the EMP to identify and manage unanticipated contamination (Appendix D).	No specific mitigation measures required to be incorporated into the Airport Link Design at present. Refer to the EMP to identify and manage unanticipated contamination (Appendix D).

## 7.2 Environmental Management Plan

The recommendations presented in **Table 7-1** have been incorporated into an Environmental Management Plan (EMP), presented in **Appendix D**, covering the construction phase of the Airport Link Project. Preparation and implementation of a 'best practice' EMP will protect humans and the environment from potential contaminants. The EMP has canvassed the following protective measures:

- Reducing dust generation that may contact construction workers and the public, entering storm water systems and covering surrounding vegetation;
- Reducing sediment runoff that may enter storm water systems, adjacent properties and creeks and rivers;
- Restricting access to construction zones to trained personnel only;
- Maintaining good hygiene standards such as washing hands prior to eating and drinking, no eating or drinking in work areas, wearing face masks to remove dust and vapours as required and changing into clean clothes and footwear when leaving construction areas;
- Maintaining vehicle washes to remove and collect an soil prior to leaving construction sites; and
- Transporting and disposing of potentially contaminated materials appropriately in accordance with regulatory requirements.

The EMP has incorporated the following standard requirements in the event that unanticipated contamination is encountered and disturbed;

- Training requirements for on-site personnel to identify signs of soil and/or groundwater contamination; and
- Contingency plans to protect human health and the environment.

The EMP has also recognised that removal of any material from EMR listed properties will require application to the QLD EPA to obtain disposal permits for removal to a licensed waste disposal or treatment facility.

## 7.3 Operational Activities

In the event that during site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination (ash, fill, refuse, hydrocarbon contaminated soil) not previously detected is observed, site activities are to cease in that area immediately and action taken to immediately abate the potential environmental harm. The EPA's Contaminated Land Unit must be notified within one (1) business day of detection and advised of appropriate remedial action. The vertical and lateral extent of contamination must be delineated and remedial actions developed by an appropriately qualified and experienced person in accordance with section 381 of the EP Act.

Contaminated soil which is temporarily stored on-site must be stockpiled and securely covered and/or managed to ensure that:

- Rainwater is diverted away from the stockpiles (prevention of contact/contamination);



- Contaminated soil is not transported from the stockpile by wind or rainwater; and
- Offensive odours or noxious gases are not released; and
- soil underlying the stockpiles is not affected by contamination.

The transportation of contaminated soil must be managed to ensure that:

- The transportation vehicle is covered to ensure that the contaminated soil or offensive or noxious gases are not released during transport;
- The transporter has a copy of the soil disposal permit and conditions issued by the EPA;
- An effective system is employed for cleaning of vehicles and plant and equipment which are used to transport or handle contaminated soil which prevents the release of contaminants onto any roadway or to any waters or storm water drainage system;
- Spillages are cleaned up as quickly as practicable. Spillages must not be cleaned up by hosing, sweeping or otherwise releasing contaminants into storm water drainage system or roadside gutter; and
- The treatment or disposal facility must comply with its development approval/registration certificate requirements.

## 8. Conclusions

An investigation was undertaken to identify potential impacts of contaminated properties within the Airport Link Project study corridor including the 1km groundwater drawdown area. The assessment included:

- Identification of 230 properties listed on BCC's EMR, no properties were listed on the CLR within the Airport Link Project study corridor;
- Identification of an additional 14 properties that are not listed on BCC's EMR from:
  - a limited drive-by inspection of properties used for commercial/industrial purposes;
  - a review of the 1951 and 1965 BCC Land Use Plans within the Airport Link Project study corridor; and
  - a historical aerial photograph interpretation.

BCC EMR searches within the Airport Link Project study corridor identified 230 properties listed on BCC's EMR (**Appendix A**); eight properties (**Section 2.5**) were identified as 'Managed' site. Of the EMR listed properties, based on consultation with the EPA and BCC those with the following Notifiable Activity could be considered as having a "higher risk" of causing groundwater contamination, include:

- Hazardous contaminant (51 properties);
- Landfill (51 properties);
- Petroleum product or Oil storage (55 properties);
- Railway yards (13 properties); and
- Service stations (17 properties).

The historical review undertaken within the Airport Link Project study corridor identified 14 properties (**Table 5-2**).

Historical aerial photographs and the BCC 1951 and 1965 Land Use Plans show many areas which have had commercial/industrial activities and are not listed on BCC's EMR. Potential exists historically for contamination and the undertaking of Notifiable Activities within these areas. Generally it is anticipated that the historical industrial/commercial node at Bowen Hills south of the southern bank of Enoggera Creek (Bowen Hills) has high potential for contamination, particularly groundwater.

EMR listed properties identified in this report pose potential risks to construction activities for the Airport Link Project. Property impact information detailed in the Reference Project (BCC 2006) has been used to identify direct property impacts to the 230 identified BCC EMR listed properties and other identified potentially contaminated properties (**Table 5-2**). Properties that have not been identified as having a direct impact still pose a potential risk to Airport Link construction activities. A

detailed assessment of these properties (i.e. the preparation of a Stage 1 Site History Report) may be required if construction activities impact any of these properties.

Design, construction and operational phases of the Airport Link Project have been incorporated into an EMP. The preparation and implementation of a ‘best practice’ EMP will protect humans and the environment from potential contaminants.

## 9. References

AGE (2004). Report on Groundwater Modelling Preliminary Design Report Alignment North-South Bypass Tunnel.

BCC City Design (2005). Contaminated Land Search – Proposed Airport Link. October.

BCC (2006). Airport Link Detailed Feasibility Study Preliminary Concept Design Report “Reference Project”. Revision B. 17 February

DoE (1998). Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland.

National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure.

SKM (2004). Final Brisbane North South Bypass Tunnel, Report on Existing Environment – Land Contamination. 19 November.

SKM (2005a). Revised Draft Background Environmental Report – Contaminated Land Issues, Airport Link. 5 September.

SKM (2005b). Final Airport Link, Report on Existing Environment - Land Contamination. 13 February.

Standards Australia (1997). Australian Standard AS4482.1-1997. Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.



## Appendix A BCC EMR/CLR Search Results

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
1	RP165998	157 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	DRY CLEANING	No site record
1	RP92589	121 CAMPBELL ST BOWEN HILLS 4006	8786	H	HAZARDOUS CONTAMINANT SITE	No site record
1	SP141562	89/B CARTWRIGHT ST WINDSOR 4030	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
1	SP172144	137/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
2	RP113229	45/B CAMPBELL ST BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
2	RP158827	64 BOWEN BRIDGE RD HERSTON 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
2	RP92589	117 CAMPBELL ST BOWEN HILLS 4006	8786	H	HAZARDOUS CONTAMINANT SITE	No site record
2	RP9882	101/A MAYNE RD BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
2	SP172144	129/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
3	RP113229	47 CAMPBELL ST BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
3	SP172144	121/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
5	SP123915	271 GILCHRIST AVE HERSTON 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
7	RP47182	1 BIMBIL ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
11	RP19010	7 BIMBIL ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
11	SP125076	93/A LUTWYCHE RD WINDSOR 4030	N/A	N	HAZARDOUS CONTAMINANT SITE	1x5,00L UST removed and layer of contaminated ash identified with Zn and Pb above EILs. Pb (570mg/kg) and Zn (530 mg/kg)
12	RP19010	5/4 BIMBIL ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
13	RP80120	3 BIMBIL ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
14	RP80120	1/A BIMBIL ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
14	SP122220	131 BRIDGE ST ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
14	SP122220	131 BRIDGE ST ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
14	SP122220	131 BRIDGE ST ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
15	RP94274	43/B CAMPBELL ST BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
15	SP122221	216/4 BONNEY AVE CLAYFIELD 4011	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
15	SP122221	216/4 BONNEY AVE CLAYFIELD 4011	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
18	RP9934	54/B BOWEN BRIDGE RD HERSTON 4006	N/A	SMP	HAZARDOUS CONTAMINANT SITE	No site record
21	CP827249	140/A EILDON RD WINDSOR 4030	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
21	RP885003	97 MAYNE RD BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
22	SP122245	138/4 HUDSON RD ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
23	CP827248	235/A LUTWYCHE RD WINDSOR 4030	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
23	CP827248	235/A LUTWYCHE RD WINDSOR 4030	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
23	SP126844	126 HUDSON RD ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
31	SP122214	24 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
34	RP18497	2 EARLE ST WINDSOR 4030	N/A	H	HAZARDOUS CONTAMINANT SITE	Pb (422-724ppm)
43	CP827250	339/A NEWMARKET RD NEWMARKET 4051	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
51	SL801574	15/4 BUTTERFIELD ST HERSTON 4006	N/A	SMP	HAZARDOUS CONTAMINANT SITE	No site record
51	SP122218	54 ALBION RD ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
51	SP122218	54 ALBION RD ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
54	SP122219	43/4 MAWARRA ST ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
54	SP122219	43/4 MAWARRA ST ENOGGERA 4051	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
54	SP122219	43/4 MAWARRA ST ALBION 4010	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
58	SP125326	101/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
71	SP122224	235 JUNCTION RD CLAYFIELD 4011	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
72	SP122225	1064/4 SANDGATE RD NUNDAH 4012	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
431	SL2529	68 BOWEN BRIDGE RD HERSTON 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
452	SL3473	25/A OCONNELL TCE BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
454	SP122217	58/4 CAMPBELL ST BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
455	SL3473	52/B OCONNELL TCE BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
456	SL3473	52/A OCONNELL TCE BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
474	SL12086	574/A GREGORY TCE BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
474	SL12086	574/A GREGORY TCE BOWEN HILLS 4006	N/A	N	HAZARDOUS CONTAMINANT SITE	No site record
544	SP119375	40/4 BOWEN BRIDGE RD HERSTON 4006	N/A	H	HAZARDOUS CONTAMINANT SITE	No site record
1	RP19518	76/4 ROSE ST WOOLLOOWIN 4030	5037	N	LANDFILL	No site record
1	RP56537	20 LAMINGTON AVE LUTWYCHE 4030	4580	N	LANDFILL	No site record
2	RP114914	61 CARTWRIGHT ST WINDSOR 4030	N/A	N	LANDFILL	Landfill operational between September 1952 and June 1953. Approximately 2m of refuse.
2	RP165926	100 FIFTH AVE KEDRON 4031	4846	N	LANDFILL	Site used for landfill from 1954 to 1963. Approx 4m of fill on-site. Now Shaw Road Sporting Reserve.
2	RP66835	70 NOBLE ST WILSTON 4051	N/A	N	LANDFILL	No site record
3	RP71388	48 WESLEY ST LUTWYCHE 4030	5190	N	LANDFILL	No site record
7	RP72098	71/4 CARTWRIGHT ST WINDSOR 4030	N/A	N	LANDFILL	No site record
8	SP110564	942 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
9	SP110564	944/4 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
9	SP110564	944/4 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
10	RP71388	15/A ERNEST ST LUTWYCHE 4030	N/A	N	LANDFILL	No site record
14	RP71388	15/E ERNEST ST LUTWYCHE 4030	5190	N	LANDFILL	No site record

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
20	RP56334	46/4 BRYDEN ST WINDSOR 4030	N/A	N	LANDFILL	Landfill operational between September 1952 and June 1953. Approximately 2m of refuse.
29	RP64390	50/4 WESLEY ST LUTWYCHE 4030	N/A	N	LANDFILL	No site record
33	RP34017	16 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
34	RP34017	18 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
35	RP34017	20 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
35	RP80407	29/C PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
36	RP34017	22 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
37	RP34017	24 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
38	RP34017	26 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
39	RP34017	28 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
40	RP34017	30 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
41	RP34017	32 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
42	RP34017	34 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
43	RP34017	36 PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
45	RP34017	1022 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
46	RP34017	1018 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
47	RP34017	1014 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
48	RP34017	1010 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
49	RP34017	1006 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
50	RP34017	1002 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
50	SP124003	1034/4 SANDGATE RD NUNDAH 4012	N/A	N	LANDFILL	No site record
53	RP34017	29/B PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
54	RP34017	29/A PARKLAND ST NUNDAH 4012	N/A	N	LANDFILL	No site record
209	B3179	72 GOULD RD HERSTON 4006	N/A	N	LANDFILL	No site record
210	B3179	78 GOULD RD HERSTON 4006	N/A	N	LANDFILL	No site record
405	B3179	95 GOULD RD HERSTON 4006	N/A	N	LANDFILL	No site record
406	B3179	57/B DOWNEY ST WINDSOR 4030	N/A	N	LANDFILL	No site record
407	B3179	57/A DOWNEY ST WINDSOR 4030	N/A	N	LANDFILL	No site record
434	SL2989	17/C KIDMAN ST WINDSOR 4030	N/A	N	LANDFILL	No site record
434	SL2989	17/C KIDMAN ST WINDSOR 4030	N/A	N	LANDFILL	No site record
501	B3179	2/B GREEN TCE WINDSOR 4030	N/A	N	LANDFILL	No site record
502	B3179	2/A GREEN TCE WINDSOR 4030	N/A	N	LANDFILL	No site record
601	B3179	20/A MELBOURNE ST WINDSOR 4030	N/A	N	LANDFILL	No site record



Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
602	B3179	11/B MELBOURNE ST WINDSOR 4030	N/A	N	LANDFILL	No site record
603	B3179	11/A MELBOURNE ST WINDSOR 4030	N/A	N	LANDFILL	No site record
604	B3179	17/B KIDMAN ST WINDSOR 4030	N/A	N	LANDFILL	No site record
605	B3179	17/A KIDMAN ST WINDSOR 4030	N/A	N	LANDFILL	No site record
606	B3179	102/A GREEN TCE WINDSOR 4030	N/A	N	LANDFILL	No site record
1182	SL9293	125 KEDRON PARK RD WOOLLOO/WIN 4030	6782	N	LANDFILL	No site record
1	RP82675	36 KEDRON BROOK RD WILSTON 4051	N/A	N	PEST CONTROL	No site record
1	RP18456	10 MCDONALD RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1	RP152605	1 HORACE ST WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	2x10,000L USTs removed in December 1994
1	RP174608	108 GRAFTON ST WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1	RP202924	1015/4 SANDGATE RD NUNDAH 4012	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	F&C licence approved 24/03/1982 for 2x5,000L USTs
1	RP68192	23 WELLINGTON ST LUTWYCHE 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1	RP86312	213/4 LUTWYCHE RD WINDSOR 4030		N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1	SP125074	87/4 LUTWYCHE RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	1x5,00L UST removed and layer of contaminated ash identified with Zn and Pb above EILs. Pb (570mg/kg and Zn (530mg/kg)
2	SP144596	58/4 OCONNELL TCE BOWEN HILLS 4006	9894	SMP	PETROLEUM PRODUCT OR OIL STORAGE	No site record
3	RP48533	74 MCDONALD RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
3	RP890186	49/4 CAMPBELL ST BOWEN HILLS 4006	9023	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
3	SP144596	52/4 OCONNELL TCE BOWEN HILLS 4006	9894	SMP	PETROLEUM PRODUCT OR OIL STORAGE	No site record
4	RP152644	71 LEGEYT ST WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
4	RP18962	113/D NEWMARKET RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record

<b>Lot Plan</b>	<b>Street Address</b>	<b>EMR Number</b>	<b>EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)</b>	<b>Notifiable Activity</b>	<b>BCC Historical Information</b>
5	RP152604	11 HORACE ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	2x13,600L USTs 1x4,500L UST (abandoned and filled with sand)
5	SP128769	240/4 SANDGATE RD ALBION 4010	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
6	SP154960	276/4 ABBOTSFORD RD BOWEN HILLS 4006	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
10	RP202493	9/4 MCDONALD RD WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
11	SP125074	87/A LUTWYCHE RD WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	1x5,00L UST removed and layer of contaminated ash identified with Zn and Pb above EILs. Pb (570mg/kg) and Zn (530 mg/kg)
19	RP170266	60 BRIDGE ST WOOLLOOWIN 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
26	RP18424	106/4 GRAFTON ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
37	RP55484	235 ABBOTSFORD RD BOWEN HILLS 4006	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
66	RP18985	69/C BLACKMORE ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
67	RP18985	69/D BLACKMORE ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
67	RP80003	112 LUTWYCHE RD WINDSOR 4030	N	Petroleum Product or Oil Storage	2x9,000L UST; 1x4,500L UST - was filled with sand in 1991
68	RP18524	35 VICTORIA ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
141	RP18577	79/D BLACKMORE ST WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
449	SL4242	35 BUTTERFIELD ST HERSTON 4006	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
496	SL12309	10 BOWEN BRIDGE RD HERSTON 4006	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
612	RP18524	112 GREEN TCE WINDSOR 4030	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record

<b>Lot</b>	<b>Plan</b>	<b>Street Address</b>	<b>EMR Number</b>	<b>EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)</b>	<b>Notifiable Activity</b>	<b>BCC Historical Information</b>
613	RP18524	112/A GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
614	RP18524	112/B GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
615	RP18524	112/C GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
616	RP18524	112/D GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
617	RP18524	112/E GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
618	RP18524	112/F GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
619	RP18524	112/G GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
620	RP18524	94/A NEWMARKET RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
621	RP18524	112 NEWMARKET RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
622	RP18524	94/C NEWMARKET RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
637	RP18524	122/L GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
638	RP18524	122/K GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
639	RP18524	122/J GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
640	RP18524	122/I GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
641	RP18524	122/H GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
642	RP18524	122/G GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
643	RP18524	122/F GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
644	RP18524	122/E GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
645	RP18524	122/D GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
646	RP18524	122/C GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
647	RP18524	122/B GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
648	RP18524	122/A GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
649	RP18524	124 GREEN TCE WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
652	RP98205	72 NEWMARKET RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1226	SL8896	60 MCDONALD RD WINDSOR 4030	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1241	SL8836	300 SANDGATE RD ALBION 4010	N/A	N	PETROLEUM PRODUCT OR OIL STORAGE	No site record
1	RP116564	39 CAMPBELL ST BOWEN HILLS 4006	855	N	PRINTING	No site record
1	RP41931	28 MAYNE RD BOWEN HILLS 4006	4056	N	PRINTING	No site record
1	RP47587	40 MAYNE RD BOWEN HILLS 4006	4065	N	PRINTING	No site record
1	RP98241	43 CAMPBELL ST BOWEN HILLS 4006	4058	N	PRINTING	No site record
1	RP9892	22 MAYNE RD BOWEN HILLS 4006	4033	N	PRINTING	No site record
2	RP211207	33/4 MURRAY ST BOWEN HILLS 4006	N/A	N	PRINTING	No site record
2	RP41931	26 MAYNE RD BOWEN HILLS 4006	4056	N	PRINTING	No site record
2	RP47587	38 MAYNE RD BOWEN HILLS 4006	4065	N	PRINTING	No site record
2	RP52004	48 MAYNE RD BOWEN HILLS 4006	4063	N	PRINTING	No site record
2	RP9893	46 MAYNE RD BOWEN HILLS 4006	4052	N	PRINTING	No site record
2	SP147208	45/4 CAMPBELL ST BOWEN HILLS 4006	N/A	N	Printing	No site record
3	RP41931	24 MAYNE RD BOWEN HILLS 4006	4056	N	PRINTING	No site record
3	RP98241	50 MAYNE RD BOWEN HILLS 4006	4058	N	PRINTING	No site record
3	RP9891	10 MAYNE RD BOWEN HILLS 4006	4023	N	PRINTING	No site record
3	RP9893	44 MAYNE RD BOWEN HILLS 4006	4052	N	PRINTING	No site record
4	RP41931	30 MAYNE RD BOWEN HILLS 4006	4056	N	PRINTING	No site record
4	RP9891	12 MAYNE RD BOWEN HILLS 4006	4023	N	PRINTING	No site record



Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
4	RP9893	42 MAYNE RD BOWEN HILLS 4006	4052	N	PRINTING	No site record
5	RP9891	14 MAYNE RD BOWEN HILLS 4006	N/A	N	PRINTING	No site record
6	RP9891	16 MAYNE RD BOWEN HILLS 4006	4023	N	PRINTING	No site record
6	RP9893	36 MAYNE RD BOWEN HILLS 4006	4052	N	PRINTING	No site record
7	RP9891	18 MAYNE RD BOWEN HILLS 4006	4023	N	PRINTING	No site record
7	RP9893	34 MAYNE RD BOWEN HILLS 4006	4051	N	PRINTING	No site record
8	RP9891	20 MAYNE RD BOWEN HILLS 4006	4028	N	PRINTING	No site record
8	RP9893	32 MAYNE RD BOWEN HILLS 4006	N/A	N	PRINTING	No site record
101	RP146694	69/4 MAYNE RD BOWEN HILLS 4006	N/A	N	PRINTING	No site record
1	RP88204	63 CAMPBELL ST BOWEN HILLS 4006		N	RAILWAY YARDS	No site record
1	RP892797	118/A ABBOTSFORD RD BOWEN HILLS 4006	8001	N	RAILWAY YARDS	No site record
1	RP9884	1/4 EDMONDSTONE RD BOWEN HILLS 4006		N	RAILWAY YARDS	No site record
1	SL6500	2/C EDMONDSTONE RD BOWEN HILLS 4006		N	RAILWAY YARDS	No site record
1	SP129361	62 BURROWS ST BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
2	RP9884	1/A EDMONDSTONE RD BOWEN HILLS 4006	N/A	N	Railway Yards	No site record
2	SP116599	118/4 ABBOTSFORD RD BOWEN HILLS 4006	9328	N	RAILWAY YARDS	No site record
2	SP129361	62 BURROWS ST BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
3	RP9884	1/B EDMONDSTONE RD BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
6	RP9884	122 MAYNE RD BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
7	RP9884	120 MAYNE RD BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
8	RP9884	118 MAYNE RD BOWEN HILLS 4006	N/A	N	RAILWAY YARDS	No site record
32	SP122215	14 BOWEN BRIDGE RD HERSTON 4006	10408	N	RAILWAY YARDS	No site record
1	RP152614	117 GRAFTON ST WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
1	RP55684	15 EARLE ST WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
1	RP64022	109 GRAFTON ST WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
1	RP69316	37 MCDONALD RD WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
1	RP89631	182 ABBOTSFORD RD BOWEN HILLS 4006		N	SCRAP YARDS	No site record
2	RP54391	180/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	SCRAP YARDS	No site record
2	RP55530	194/A ABBOTSFORD RD BOWEN HILLS 4006	N/A	SMP	SCRAP YARDS	No site record
2	RP64022	37/A MCDONALD RD WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
3	RP152614	37/B MCDONALD RD WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
35	RP18424	113 GRAFTON ST WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
36	RP18424	115 GRAFTON ST WINDSOR 4030	N/A	N	SCRAP YARDS	No site record
68	RP54391	178 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	SCRAP YARDS	No site record
71	RP89631	184 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	SCRAP YARDS	No site record

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
74	RP9371	192/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	SMP	SCRAP YARDS	No site record
75	RP9371	194 ABBOTSFORD RD BOWEN HILLS 4006	N/A	SMP	SCRAP YARDS	No site record
1	RP100608	70 LODGE RD WOOLLOOWIN 4030	2495	N	SERVICE STATIONS	No site record
1	RP10698	75 EMMA ST WOOLLOOWIN 4030		N	SERVICE STATIONS	No site record
1	RP89174	35 CAMPBELL ST BOWEN HILLS 4006		N	SERVICE STATIONS	No site record
1	RP97924	404 LUTWYCHE RD WINDSOR 4030	N/A	N	SERVICE STATIONS	Ampol Lutwyche F&C licence approved 23/12/1992 1x58,000L UST, 5x10,000L UST, 5x bowsters
2	RP19349	607 LUTWYCHE RD LUTWYCHE 4030	52	N	SERVICE STATIONS	No site record
2	RP196278	3 TAYLOR ST WINDSOR 4030	N/A	N	SERVICE STATIONS	No site record
2	RP68231	279 GYMPIE RD KEDRON 4031	3318	N	SERVICE STATIONS	1x33,500L USTs; 1x13,600L USTs; 1x17,900 USTs; 5 bowsters
2	RP97828	6 MCLENNAN ST ALBION 4010	N/A	N	SERVICE STATIONS	No site record
4	RP805240	143/4 NEWMARKET RD WINDSOR 4030	N/A	N	SERVICE STATIONS	No site record
4	RP98727	110 GYMPIE RD KEDRON 4031	1775	N	SERVICE STATIONS	2x55,000L USTs; 1x13,000L USTs; 1x10,000L USTs; 1x2,300L USTs. In March 2001, Mobil had a 14,000L leak and reached groundwater at 10.5mBGS. Contaminant plume moved underneath Gympie Road in easterly direction
11	RP845909	230/4 ABBOTSFORD RD BOWEN HILLS 4006	N/A	N	SERVICE STATIONS	No site record
50	RP26121	273/A GYMPIE RD KEDRON 4031	N/A	N	SERVICE STATIONS	No site record
51	RP26121	275 GYMPIE RD KEDRON 4031	3316	N	SERVICE STATIONS	1x33,500L USTs; 1x 13,600L USTs; 1x 17,900 USTs; 5 bowsters
63	RP97766	86 KENT RD WOOLLOOWIN 4030	56	N	SERVICE STATIONS	No site record
100	SP134740	54/4 BOWEN BRIDGE RD HERSTON 4006	N/A	N	SERVICE STATIONS	No site record
103	RP25148	277/4 GYMPIE RD KEDRON 4031	1776	N	SERVICE STATIONS	1x33,500L USTs; 1x 13,600L USTs; 1x 17,900 USTs; 5 bowsters

Lot	Plan	Street Address	EMR Number	EMR STATUS Notified (N) Managed (M) Hazardous Contaminant (H)	Notifiable Activity	BCC Historical Information
733	SL7090	64 GYMPIE RD GORDON PARK 4031	N/A	SMP	SERVICE STATIONS	3x54,000L USTs, 3x18,000L USTs, 7 bowers. Service station decommissioned in 1999. All known USTs, bowers and pipework removed from the Shell Kedron site in January 2001. SMP current for hydrocarbon impacted soil between 2-4.8mbgs. Groundwater 5.9-7.1mbgs and flows in a southerly direction

Lot 2 on RP55530  
located at 194-A  
Abbotsford Road, Bowen  
Hills and,  
Lots 74 and 75 on  
RP9371 located at 192-4  
and 194 Abbotsford Rd,  
Bowen Hills

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30 November 1999

Site ID: 623  
File Number: 902434  
Enquiries to: Contaminated Land Unit  
Telephone: (07) 3227 6870

THE CHIEF EXECUTIVE OFFICER  
ATT: Contaminated Land Unit  
Brisbane City Council  
GPO Box 1434  
BRISBANE QLD 4001

### CERTIFICATE OF APPROVAL OF A SITE MANAGEMENT PLAN

This document provides written notification that, in accordance with the *Environmental Protection Act 1994*, a site management plan has been approved for the parcel of land described below, which is recorded on the Environmental Management Register. A copy of the suitability statement and the site management plan is attached.

Lot: 74 Plan: RP9371  
BRISBANE CITY COUNCIL

192 ABBOTSFORD ROAD  
BOWEN HILLS QLD 4006

Section 118ZY.(4) of the *Environmental Protection Act 1994* states -

A local government must not, under an approval or other authority under any Act, allow the use or development of, or an activity to be carried out on, land in a way that contravenes a site management plan for the land.

For further information regarding this notice, please contact the Contaminated Land Unit, Environmental Protection Agency on telephone (07) 3227 6870.

Yours sincerely -

Ariane Milinovich  
Acting Registrar, Contaminated Land Unit



## **SUITABILITY STATEMENT**

DATE PRINTED: 30/11/1999

### **OWNER**

EDWARD JAMES BROSNAN  
AS TRUSTEE FOR SCOTTY'S PROPERTY TRUST  
C/- SCOTTYS' TRUCK RENTALS  
100 ABBOTSFORD ROAD  
MAYNE 4006

**DATE OF ISSUE :** 30/11/1999

### **PROPERTY DESCRIPTION**

LOT : 74 PLAN : RP9371  
192 ABBOTSFORD ROAD  
BOWEN HILLS QLD 4006

BRISBANE CITY COUNCIL  
EMR Site ID: 623 FILE REFERENCE: 902434

**FINAL SUBMISSION RECEIVED ON:** 19/11/1999

### **STUDIES UNDERTAKEN BY APPLICANT OR REQUESTED BY DIRECTOR**

Stage 2 Contamination Assessment Report, Vehicle Wreckers Yard located at 192 - 194 Abbotsford Road, Bowen Hills, Queensland, prepared by Landfix Pty Ltd in June 1999.

Results of Groundwater Tests Following Stage 2 Contamination Assessment Report - completed June 1999, Vehicle Wreckers Yard located at 192 - 194 Abbotsford Road, Bowen Hills, Queensland, prepared by Landfix Pty Ltd in July 1999.

Site Management Plan for Lot 2 RP 55530 & Lots 74 & 75 RP 9371

### **STATEMENT OF SUITABILITY**

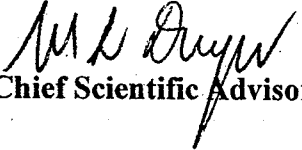
On the basis of the information supplied to this Department, the subject site is suitable for the following use(s) providing the site is used and managed as per the Site Management Plan attached as Annexure 1.

Suitable for industrial/commercial use including premises such as shops, offices and industrial buildings (but excluding uses where soil access by children is possible) subject to the approved site management plan Annexure 1.

Other specific uses may be suitable for the site, please contact this Department for further advice. The suitability statement provides information on appropriate land uses at the date of effect. Subsequent uses of the site for notifiable activities or for situations where a hazardous contaminant is released into the soil may result in the need to review suitable uses or amend the attached site management plan.

#### **ENVIRONMENTAL MANAGEMENT REGISTER**

LOT : 74 PLAN : RP9371 is recorded on the Environmental Management Register with a Site Management Plan. A copy of the Site Management Plan is attached as Annexure 1.

  
Chief Scientific Advisor, Contaminated Land Unit



## ANNEXURE 1 - SITE MANAGEMENT PLAN

DATE PRINTED: 30/11/1999

LOT : 74      PLAN : RP9371      FILE REF : 902434

DATE OF EFFECT : 30/11/1999

### 1.0 Summary of Contamination

Significantly elevated levels of arsenic, cadmium, copper, lead, mercury, nickel and zinc, have been identified in soils down to at least 1 metre across the whole of Lot 2 on RP 55530 and Lots 74 & 75 on RP 9371 ("the site"), Parish of North Brisbane, County of Stanley. These Lots are adjoining and have common land use. The site is contaminated with heavy metals, those metals with levels of concern are listed below.

Soil samples collected across the site, the levels range from:

- cadmium <0.5 mg/kg to 200 mg/kg;
- copper 4.6 mg/kg to 103000 mg/kg;
- lead 44 mg/kg to 156000 mg/kg; and
- zinc 290 mg/kg to 53700 mg/kg.

The range of elevated metals found on site have occurred from scrap metal activities where vehicle batteries were broken down to recover mainly lead which was subsequently smelted in a small furnace on site. These activities took place between circa 1937 to 1972.

### 2.0 Objective of the Plan

The objective of this Site Management Plan is to manage the contamination on Lot 2 on RP 55530 and Lots 74 & 75 on RP 9371 in a manner which protects human health and the environment by the placement and maintenance of barriers between users of the site and the contamination, prevention of contamination migration from the site and application of controls on site excavation works.

### 3.0 Achievement and Management of Objectives

The owner is to ensure that the following conditions are complied with to ensure that the plan objectives are achieved and maintained:

#### 3.1. Capping of the Site

3.1.1. Complete coverage of the site with reinforced concrete of a minimum of 100mm thickness, or bitumen laid over a minimum of 150mm of compacted road base is required within 3 months of the date of this plan. The covering must be maintained in good condition at all times in order to prevent the infiltration of water and to provide a barrier between users of the site and the contamination.

### 3.2. Site Excavation Works

3.2.1 Excavations which extend below the capping layer must receive the prior approval of the Environmental Protection Agency.

3.2.2 A disposal permit under Section 118ZZF of the Environmental Protection Act 1994 must be obtained before excavating and removing any contaminated soil from the site.

### 3.3. Workplace Health and Safety

3.3.1. A Workplace Health and Safety Plan which satisfies relevant obligations of the Workplace Health and Safety Act 1989, subordinate legislation or its equivalent shall be developed for the site and shall specifically address exposure to heavy metal contaminated soils and/or waters. This WHASP shall be developed prior to the commencement of any approved (refer to 3.2.1) excavation works on-site.

3.3.2. Site works relating to excavation, removal and/or disposal of soil must ensure that environmental harm is prevented. To achieve this outcome, specific procedures shall be developed and implemented. The procedures are to be developed by a person whose qualifications and experience complies to the requirements of Section 118ZR of the *Environmental Protection Act*. In forming appropriate procedures, reference shall be made to EPA guidelines for the development of Environmental Management Programs Part 6 of the *Environmental Protection Act*. Environmental aspects of site works are to be supervised by a person as referenced above. The procedures shall be developed prior to the commencement of site works (upon finalisation of development plans) and be available to the administering authority on request. As a minimum the EMP must consider:

- . the staging of site works to minimise the extent of disturbed areas and to reduce the potential for potentially contaminated run-off to impact surrounding areas;
- . methodologies to control the emission of potentially contaminated dust;
- . stormwater controls around stockpiles and/or excavations to minimise the potential for off-site migration of contaminants;
- . the identification and management of potentially Acid Sulphate Soils;
- . minimising the exposure of humans and the environment to potentially contaminated sub-surface soils during excavation works;
- . controls for material cartage (eg covering loads, wetting material to reduce airborne dust emissions);
- . documentation of all contaminated soil transport operations including the descriptions of processes, personnel and/or organisations involved and approvals given.

### 4.0 Monitoring Requirements

To ensure compliance with the SMP, the owner of the site is to ensure that the following reporting requirements are performed.

4.1 A report prepared by a person as referenced in 3.3.2 is to be submitted at the



completion of the capping phase to the EPA detailing compliance with SMP conditions.

**4.2** An inspection of the site is required at a minimum of every six months to ensure that the SMP conditions have been satisfied.

**4.3** Written records of details of inspections and maintenance programs, site excavations, soil movements and soil disposals are to be documented and be available to an authorised officer on request.

The Environmental Protection Agency (EPA) will undertake periodic site inspections other than those required above.

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

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

Lots 1 and 2 on RP196278  
3 Taylor St  
Windsor

761  
9  
\* 264/47/1 -  
NO555/172 (A1)

DEPARTMENT OF RECREATION AND HEALTH

*\* Cannot locate file.*

3 January 1997

SGO1\F&C\174LUTWYCHE

(9)314/38/86-NO555/174

MEMORANDUM

MANAGER

Application Under the : "Building (Flammable and Combustible Liquids) Regulations 1994"  
at 174 Lutwyche Road, Windsor. 4030

Applicant/Occupier: Mistearl Pty Ltd.

Owner: *McDonald's Properties (Aust.) Pty Ltd.*  
*PO Box 392, Pennant Hills NSW 2120*

An application has been received from Mistearl Pty Ltd in respect of service station situated at 174 Lutwyche Road, Windsor and described as Lot 1 on RP196278, Parish of Enoggera seeking a licence to be issued by the Council pursuant to the provisions of the Building (Flammable and Combustible Liquids) Regulations 1994 in respect of the proposed installations to provide for:

Licensed Quantities

Flammable Liquid Class 3 Packaging Group I/II (Motor Spirit)

Three (3) 40 000 litre underground tanks.

One (1) 20 000 litre split underground tank (Part of Type 20/20 tank).

Combustible Liquid C1 (Distillate)

One (1) 20 000 litre underground tank (Part of Type 20/20 tank).

Pumpheads

Six (6) multi product pump dispensers

This application is governed by the "Building (Flammable and Combustible Liquids) Regulations 1994", and pursuant to the provisions of Regulation 14 (1), it is recommended

Contact name: Mr. Peter Stevens  
Telephone:  
Fax (direct): 340 34710  
Your ref.: 340 35230  
Our ref.:



**Brisbane City Council**  
69 Ann Street  
Brisbane, Queensland  
GPO Box 1434  
Brisbane  
Australia 4001  
Facsimile 229 1168

(0) 264/47/1- NO555/172  
PJS:PJS

22 July 1996

Department of Environment  
Waste Management Branch  
Contaminated Sites Section  
PO Box 155  
BRISBANE ALBERT STREET QLD 4002

Attention: Margaret Bardon

Dear Margaret

RE: 172 Lutwyche Road, Windsor - Lot 1 on RP 196278

I refer to our telephone conversation on 18 July 1996 regarding the above site.

Perusal of Council records reveals that Development Approval was granted on 5 December 1995 for this site to be used for Service Station and Shop, Fast Food Store. An inspection of the site has shown that no development has occurred to date.

In this instance, the site should be removed from the Contaminated Sites Register as no Prescribed Purpose activity is currently taking place.

Yours sincerely

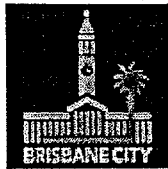
*P.G. Stevens*  
Peter Stevens  
Senior Project Officer  
Contaminated Land Unit

3227 8341

Lots 1 and 11 on SP125074  
87-4 Lutwyche Rd  
Windsor



FACSIMILE



4.264/478/2-10/559/87  
NO 559/87

25 OCT 2000

INFORMATION SERVICE  
Brisbane City Council  
Community & Economic Development  
Community Health & Safety  
Manager's Office  
Level 4 69 Ann Street  
Brisbane Qld 4000  
PO Box 1434  
Brisbane Qld 4001  
Telephone 07 3403 4720  
Facsimile 07 3403 9560

TO:	EPA	DATE:	25/10/00
ATTENTION:	Tess Dobinson	FAX:	32473278
FROM:	FAN CHEN, LCTS	PHONE:	34034710
		FAX:	34036567
RE:	87 Lutwyche Rd Windsor (Lot 1 RP115349)	PAGES:	6

Please find attached Notification and soil testing report.

The property has been subdivided to Lot 1 & 11 SP125074. The underground tank, which was located on Lot 11 SP125074, was removed and the excavated soil from the tank pit is stockpiled across two subdivided properties.

I will advise you result of further site investigation.

Should you have any inquiry regarding this matter, please contact me on the number above.

Regards,

Fan Chen  
Environmental Officer Land Contamination



## MEMORANDUM



Brisbane City

## City Design

TO: Gregg Buyers, Senior Program Officer, Transport and Traffic, Urban Management

Level 3 T.C. Beime Centre  
315 Brunswick Street Mall  
Fortitude Valley Qld 4006

CC:

Locked Mail Bag 6996  
Albion Qld 4010

FROM: Michael Chapman, Environmental Scientist Landfill Remediation, City Design

DATE: 22/9/2000

Ph: 07 3403 3849

Fax: 07 3403 0551

Mobile:

Email:

SUBJECT: Contamination Testing, Horace St Windsor Tank Excavation and Removal

### Introduction

As part of the demolition works undertaken by City Building and Maintenance for the property located at 87 Lutwyche Rd Windsor, City Design was commissioned by Urban Management to undertake contamination testing for the excavation of an underground storage tank.

The site comprises the following lots in the Parish of Enoggera:

Lot 1 and 11 on SP125074 - *formerly Lot 1 RP115349*

### Tank and Associated Piping Removal

Excavation and removal of the tank commenced on 21 July 2000 and was carried out by Gumdale Demolitions under supervision of City Design. One 5000 litre underground petrol tank was removed and subsequently degassed and destroyed by Dewhurst Industrial Maintenance. The certificate of tank destruction is included in Appendix A.

Inspection of the excavated tank indicated that it was still in relatively good condition (refer Photograph 1). There was no visible sign of corrosion.

Following the removal of the tank and associated infrastructure, the pit was excavated to in-situ material consisting of Brisbane Tuff. Photograph 2 illustrates the walls and base of the excavation. The Tuff was overlain by 1.2m of ash material in a soil matrix. The total depth of the trench was 2.6m with dimensions measuring 3.7m x 2m (Figure 1).

The breather pipe, bowser pipe and the filler pipe were all located in the same trench. No bowser remains were found at the site prior to demolition, however the breather pipe remained in place.

### Stockpiling of Soils

Approximately 23 m<sup>3</sup> of material was excavated from around the tank and pipework and stockpiled to the north of the tank excavation (refer Photograph 3).

The excavation pit and trench were filled with decomposed granite from CSR and rolled to make stable.

#### **Soil Sampling**

Samples were not taken from the excavation as the tank was situated with Brisbane Tuff, however, two samples (S4 and S5) were taken from the stockpile for analysis of heavy metals and hydrocarbons.

Three samples (S1, S2 and S3) were taken at 5m spacings beneath the pipework, which spanned 15m to the filler point. The depth of the trench was approximately 0.5m. Photograph 4 illustrates the excavated pipework trench.

Samples collected from the stockpile and pipework trench were submitted to Brisbane Water's Analytical Laboratory on 24 July 2000 for Total Petroleum Hydrocarbon (TPH), aromatic hydrocarbon compounds (Benzene, Toluene, Ethyl-benzene, Xylene (BTEX) and heavy metal analysis.

#### **Laboratory Results**

Laboratory Reports for the site are presented in Table 1. Soil analytical results have been compared to the investigation thresholds outlined in the *EPA Draft Guidelines for the Assessment of Contaminated Land in Queensland and Australia and New Zealand Environment and Conservation Council (ANZECC)*. Concentrations above thresholds levels are highlighted in **bold**, in the tables. The exposure setting adopted for this investigation is A – 'Standard' Residential.

#### **Stockpile**

Of the two samples taken of the stockpile, analysis indicates that one sample (S4) contained elevated levels of Lead and Zinc. Lead concentrations exceeded both EPA Environmental and Health values and zinc is only slightly over Environmental values. All samples were below Environmental and Health thresholds for TPH and BTEX.

#### **Pipework Trench**

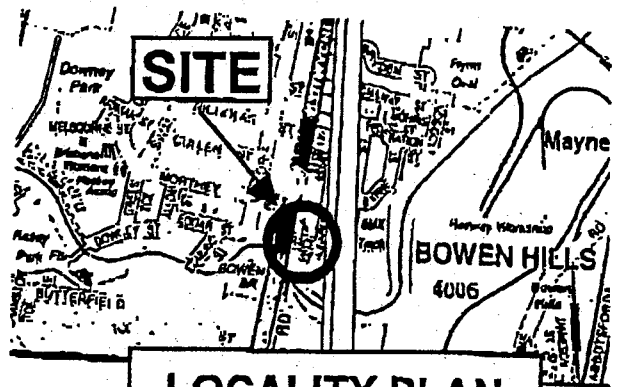
Analysis of S1 and S3 taken from the pipework trench indicates slight exceedances for environmental thresholds for zinc. All samples were below Environmental and Health thresholds for TPH and BTEX.

#### **Conclusion/Recommendations**

The underground storage tanks and associated infrastructure have been removed and material surrounding the items have been stockpiled. Sampling and analysis of the stockpile and pipework trench indicates elevated levels of lead and zinc. Further sampling and analysis of surface ash material is required to determine the nature and extent of this contamination. In addition, it is recommended that further information on the site is ascertained through conducting a site history investigation.



Michael Chapman  
Environmental Scientist Landfill Remediation  
CITY DESIGN

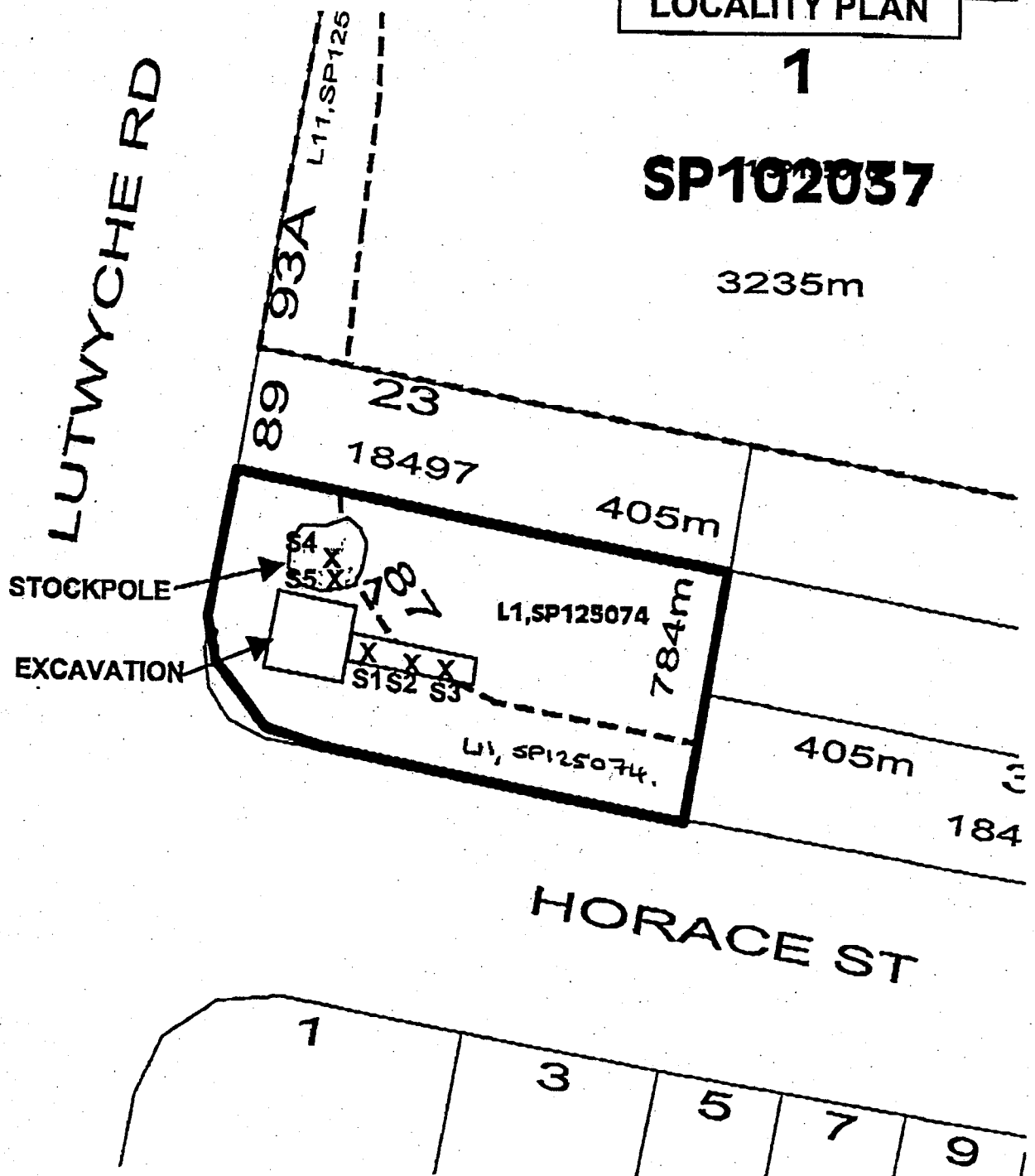



LOCALITY PLAN

1

SP102037

3235m



Design	MC	Sept 00	<b>CITY DESIGN</b> <b>GEOTECHNICAL &amp; ENVIRONMENTAL ENGINEERING</b> 61 CAMPBELL ST, BOWEN HILLS 87 LUTWYCHE RD, BOWEN HILLS CONTAMINATION TESTING, TANK EXCAVATION & REMOVAL	 Brisbane City	<b>BRISBANE CITY COUNCIL</b> <b>City Design</b> Geotechnical & Environmental Engineering	
Drawn	PEB	Sept 00			Project No.	Fig.
Checked						
Scale	1 : 500				<b>CD-G1/0083760</b>	<b>1</b>



APPENDIX A

SINCLAIR KNIGHT MERZ

Dewhurst Industrial Maintenance

# TANK DESTRUCTION CERTIFICATE

HARRMATT P/L

27/7/00

ABN: I3088175204

COPY

TO GUMDALE DEMOLITIONS

THIS IS TO CERTIFY THAT ( 1 X 5000L . )  
EX UNDERGROUND FUEL STORAGE TANK HAS  
BEEN DEGASSED AND DESTROYED.

TRK

Troy Kohn

387

Fax

Lots 1 on RP86312  
213 Lutwyche Road,  
Windsor  
and  
Lots 2 on RP18462  
215 Lutwyche Road,  
Windsor



4110702 - 1484  
1/86312 - 4175

<b>TO</b> EPA		<b>DATE</b> 11/12/01	<b>Brisbane City Council</b> Pollution Prevention Health & Safety Branch Level 4 69 Ann Street BRISBANE Q 4000
<b>ATTENTION</b>	Tess Dobinson	<b>FAX</b> 3247 3278	
<b>FROM</b>	Jamie Simmonds Potemp2@brisbane.qld.gov.au	<b>PHONE</b> 3403 6780	GPO Box 1434 BRISBANE Q 4001
<b>SUBJECT</b>	213 Lutwyche Rd., Windsor L.1/RP.86312 & L.2/RP.18462	<b>PAGES</b> 3	Ph: 3403 4721 Fax: 3403 9560

Dear Tess,

Council is informing your department that a review of the above sites has found the notifiable activity: **Petroleum Product or Oil Storage and Service Station**. Council notified the EPA regarding these sites on 30/6/94.

The above linked sites have been a service station since 1955 when Ampol first established one. The F&C file shows that the following installation was licensed to Ampol Petroleum in 1979:

- One 18,000L underground tank for Motor Spirits
- One 9,200L underground tanks for Motor Spirits
- One 10,000L underground tank for Motor Spirits
- Various flammable and combustible liquids in minor storage

The 18,000L tank was installed in 1970. It could not be determined as to when the other two tanks were installed.

The above installations continued to be licensed under different names including, Solo Oil Australia in 1981, Mr. S Lunardon in 1991, Baywash Valet Carwash Pty. Ltd. in 1997 and Michael Andrew Lynd in 2001. Additionally, the 9,200L tank was changed from Motor Spirits to Distillate in 1991.

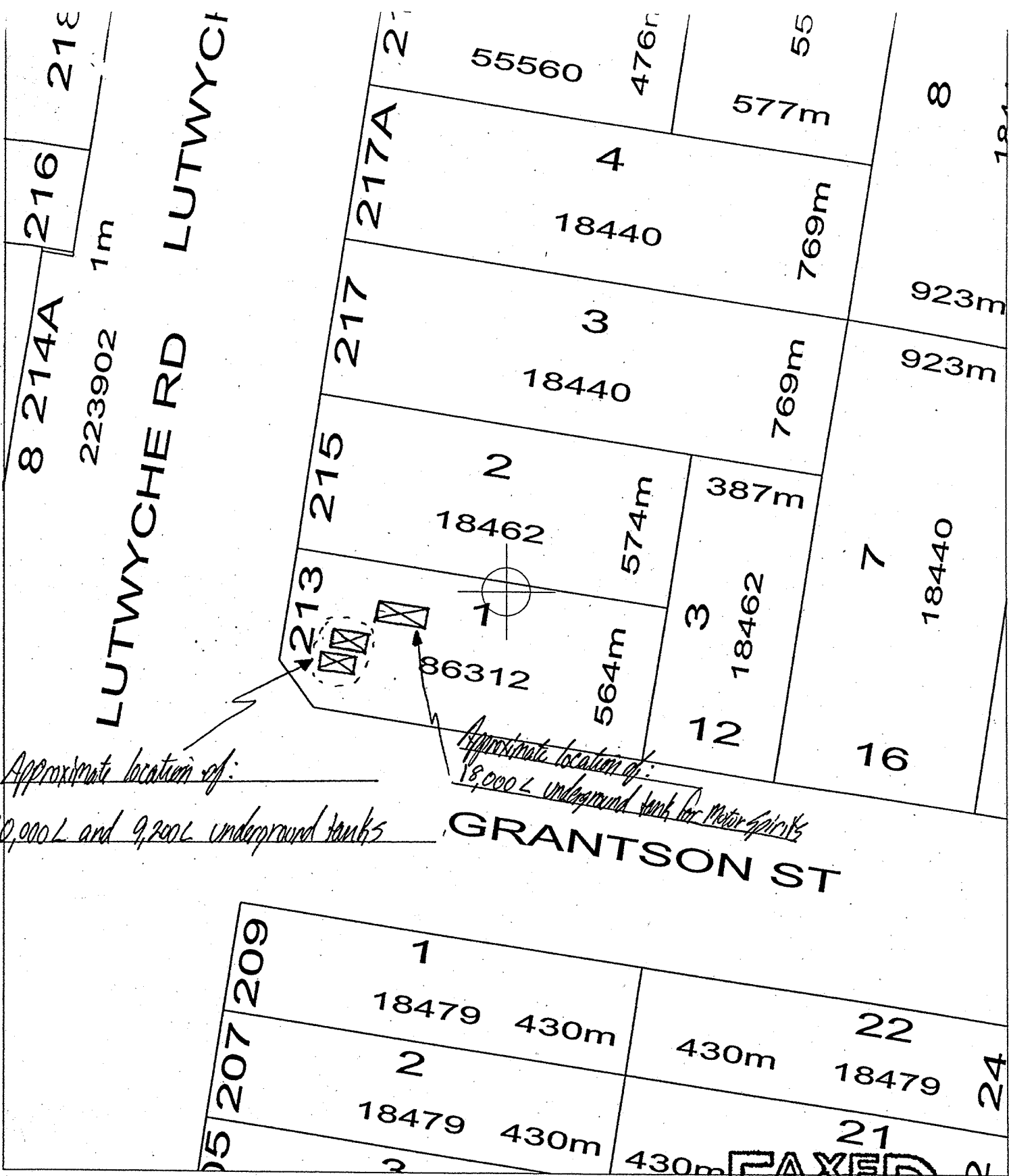
All three tanks are still on site and the location of the underground tanks is shown on the attached site map and BIMAP.

If you require any further information, feel free to contact me at the above number.

Regards,

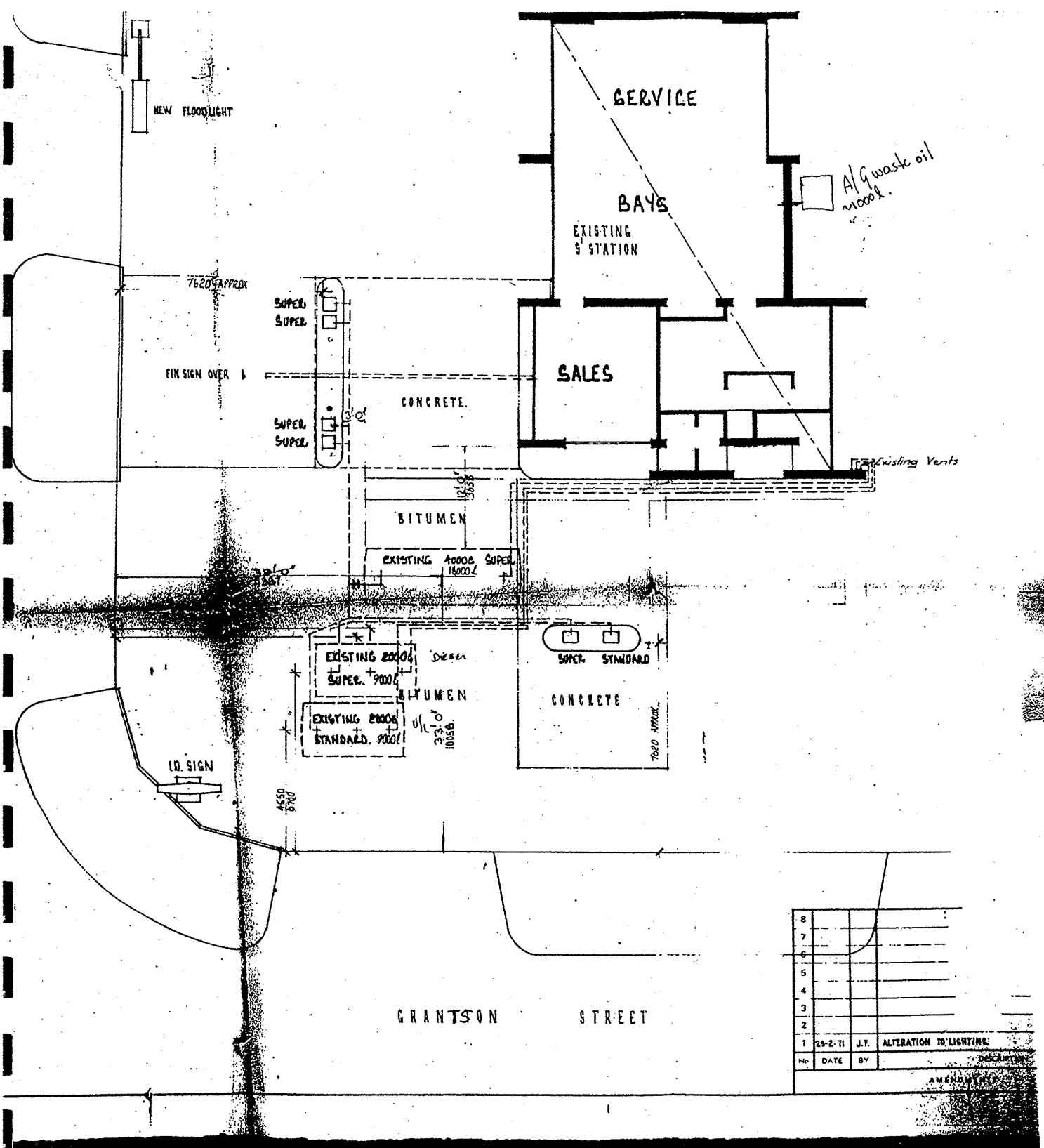
Jamie Simmonds  
Project Officer, Environmental Protection

**FAXED**  
11/12/01



Date: 07/12/2001  
 Time: 09:05:24  
 Userid: potemp2  
 Scale: 1:500  
 Location: 503136 6965258  
 Themes: Cadastre

**Disclaimer:**  
 "While every care is taken by Brisbane City Council (BCC) and Dept. of Natural Resources & Mines (NRM) to ensure accuracy of this data, BCC and NRM jointly and severally make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of data being inaccurate in any way and for any reason."  
 Based on Data provided with the permission of NRM: Cadastral Data (January 2001).  
 Quality System  
 Quality Endorsed Company  
 GDA



**FAXED**  
11/12/01



Lots 1 on RP97924  
404 Lutwyche Rd  
Windsor

DEPARTMENT OF RECREATION AND HEALTH

23 December 1992

TIA Ampol Lutwyche.  
(0)314/38/86-MP370/8

MEMORANDUM

SUPERVISING HEALTH SURVEYOR (NORTH)

Application under the : "Flammable and Combustible Liquids Regulations 1990"  
at 404 Lutwyche Road, Windsor

Applicant/Occupier: Ampol Petroleum (Queensland) Pty Ltd

An application has been received from, Ampol Petroleum (Queensland) Pty Ltd the occupier of service station premises situated at 404 Lutwyche Road, Windsor and described as Lot 1 on Registered Plan 97024 Parish of Enoggera seeking approval for a licence to be issued pursuant to the provisions of the "Flammable and Combustible Liquids Regulations 1990" in respect of the proposed and existing installations and storage to provide for:

Flammable Liquid Class 3.1 (Motor Spirit)

One (1) 58 000 litre underground tank  
Four (4) 10 000 litre underground tanks

Combustible Liquid Class 3.3 (Distillate)

One (1) 10 000 litre underground tank

Fuel Dispensers

Two (2) six hose and two (2) four hose Multi-product Pumps and one single dispensing pump for reseller purposes

This application is governed by the "Flammable and Combustible Liquids Regulations 1990", and pursuant to the provisions of Regulation 15 (1), it is recommended that the application for a licence be approved subject to certain modifications and conditions.

4/167.00  
4/1327  
14/12/92

RECOMMENDATION

It is recommended that approval be granted for a licence to be issued to Ampol Petroleum (Queensland) Pty Ltd, subject to the modifications and conditions set out in Appendix "D" attached, for the proposed and existing installations and storage at the above described service station premises pursuant to the provisions of Regulation 15 (1) of the "Flammable and Combustible Liquids Regulations 1990".



Paul J ROFF  
ENVIRONMENTAL HEALTH OFFICER

RECOMMENDATION: APPROVED/~~NOT APPROVED~~



Lyall J Wallis  
SUPERVISING HEALTH SURVEYOR (NORTH)

H47\F&C\AmpolL.sub



Lots 1 on RP100608  
70 Lodge Rd  
Wooloowin



Contact Name: Lisa Stano  
Your Ref: 86100692  
Our Ref: 86100692

2 July 2002

Gilma Company  
Matilda Lodge Rd Kalinga  
70 Lodge Rd  
WOOLOOWIN QLD 4030

Att: Marina & Brenton Giles

Dear Sir/Madam,

**Transfer Approval  
Storage and Handling of Flammable and Combustible Liquids**

I refer to your application for a transfer of licence to be issued by Council pursuant to the provisions of the *Dangerous Goods Safety Management Regulation 2001*.

This is in respect to a service station premise situated at 70 Lodge Rd Woolloowin Qld 4030.

I am pleased to advise that your transfer application has been approved by Development and Regulatory Services.

The existing installation(s) and storage quantities are subject to the conditions attached.

Any variation to the existing installation and storage quantities required Council approval. A variation of licence application can be obtained by contacting Council on 3403 8888.

Should you have any further queries regarding this matter, please contact me on the above telephone number.

Yours faithfully,

Lisa Stano  
Development Officer Environmental Health  
Licensing and Compliance North  
**Development and Regulatory Services**  
**Customer and Community Services Division**

## **Schedule of Licensed Quantities**

### **Underground Tank/s**

Flammable Liquids Class 3 Packaging Group I/II (Motor spirit)  
Three (3) 18184 litres underground tanks.

Combustible Liquids C2 (Waste oil)  
One (1) 2 000 litre underground waste oil tank.

### **Dispensing Pump/s**

Two (2) dual and two (2) multi-product pumps for reseller purposes.

END

Lots 1 on RP202924  
1015-4 Sandgate Rd  
Nundah



Brisbane City Council

TO  
Environmental Protection Agency

FACSIMILE NO:  
3227 7677

ATTENTION:

Date:

No. Of Pages  
(incl this one)

Ariane Milinovich

18/07/2000

1

FROM

Phone No:

Facsimile No.

Patrick Gilfuis

3403 5564

3403 6567

SUBJECT **Reviewed Site**

1015 Sandgate Road, Nundah  
Lot 1 RP202924

**Technical Support Group  
Development Assessment,  
Development & Regulatory Services  
Customer & Community Services Division**

Team Leader, Denis Verner	3403 6153
Legislation & Appeals, Phillip Smith	3403 6718
Heritage, Helen Josephson	3403 4059
Building Surveyor, Errol George	3403 6632
Natural Environment, Bill Manners	3403 9585
Public Health, Shane Worley	3403 4514
Hazards, Rodney Ringe	3403 4681
Transport & Traffic, Rod Mogg	3403 5338
Water & Sewerage, Lew Maguire	3403 4978
Waterways, Bruce Baron	3403 5487
Erosion & Sediment, Scott Paten	3403 4735
Facsimile	3403 6567

Hello Ariane,

A recent check of Council's records, about the above address, confirms that the site does have current F & C Licence that they approved 24 March 1982. The licence is for two (2) 5 000 litre underground tanks for distillate and one (1) 700 litre and one (1) 750 litre aboveground (day service) tanks also for distillate.

Should you have any inquiries, please contact me.

Regards

Patrick Gilfuis  
Land Contamination Support  
Technical Support

268 8773 (9.00am - 10.00am)

Mr D Hancock

268 8755

(1)314/38/86-QS730/1015(A)

9 March 1992

DJH:SH

Westfield Shopping Centre  
Management Co. Pty Ltd  
1015 Sandgate Road  
NUNDAH 4012

Dear Sir/Madam

I refer to your Company's application, on behalf of Westfield Shopping Centre Management Co. Pty Ltd for a variation of the License issued by the Council under the Flammable and Combustible Liquids Regulations, 1990, in respect of a Commercial Premises situated at 1015 Sandgate Road, Toombul and described as Lot 1048/1049 SL 7257 Parish of Toombul.

As the outcome, approval has been granted for the variations as listed below and for a new license to be issued with regard to the variation/s and existing installation/s and storage/s as follows:

Remove From Previous Licence:-

Combustible Liquid Class 3.3 (Distillate)

- One (1) 2 250 litre underground tank.
- One (1) 450 litre aboveground tank.

Updated Licence:-

Class 3.3 Combustible Liquid (Distillate)

- Two (2) 5 000 litre underground tanks.
- One (1) 700 litre aboveground (Day Service) tank.
- One (1) 750 litre aboveground (Day Service) tank.

Pumphead/s

- Two (2) electric transfer pumps.

subject to the modifications of the proposal and conditions set out in the attached Appendix "B".

Yours faithfully,

(P.W. Berthold)  
TOWN CLERK





Lots 1 on RP152605  
1 Horace St  
Windsor



Brisbane City

Brisbane City Council

TO  
Environmental Protection Agency

FACSIMILE NO:  
3227 7677

Technical Support Group  
Development Assessment,  
Development & Regulatory Services  
Customer & Community Services Division

ATTENTION:

Date:

No. Of Pages  
(Incl. this one)

Adriane Milinovich

16/06/2000

1

Team Leader, Denis Verner	3403 6153
Legislation & Appeals, Phillip Smith	3403 6718
Heritage, Laurie Jones	3403 4059
Natural Environment, Bill Manners	3403 9585
Public Health, Shane Worley	3403 4514
Hazards, Rodney Ringe	3403 4681
Transport & Traffic, Rod Mogg	3403 5338
Water & Sewerage, Lew Maguire	3403 4978
Waterways, Firoz Ahmed	3403 5487
Erosion & Sediment, Scott Paten	3403 4735
Facsimile	3403 6567

FROM

Patrick Gilfuis

Phone No:

3403 5564

Facsimile No.

3403 6567

SUBJECT **Reviewed Site**

1 Horace Street, Windsor  
Lot 1 RP 152605

Hello Ariane,

A recent check of Council's records, about the above address, confirms that the site did have an F & C Licence that was approved 26 April 1990. The site was licenced for one (1) 10 000 litre underground tank for motor spirit and one (1) 10 000 litres underground tank for distillate. In December 1994 they cancelled the licence and removed the tanks.

Should you have any questions, please contact me.

Regards

Patrick Gilfuis  
Land Contamination Support  
Technical Support

BRISBANE CITY COUNCIL  
MEMORANDUM

To LIC	File No. -N0555/81
From PCINE	Date 15/12/94
Subject 81 LUTWYCHE RD, WINDSOR	

LICENSING,

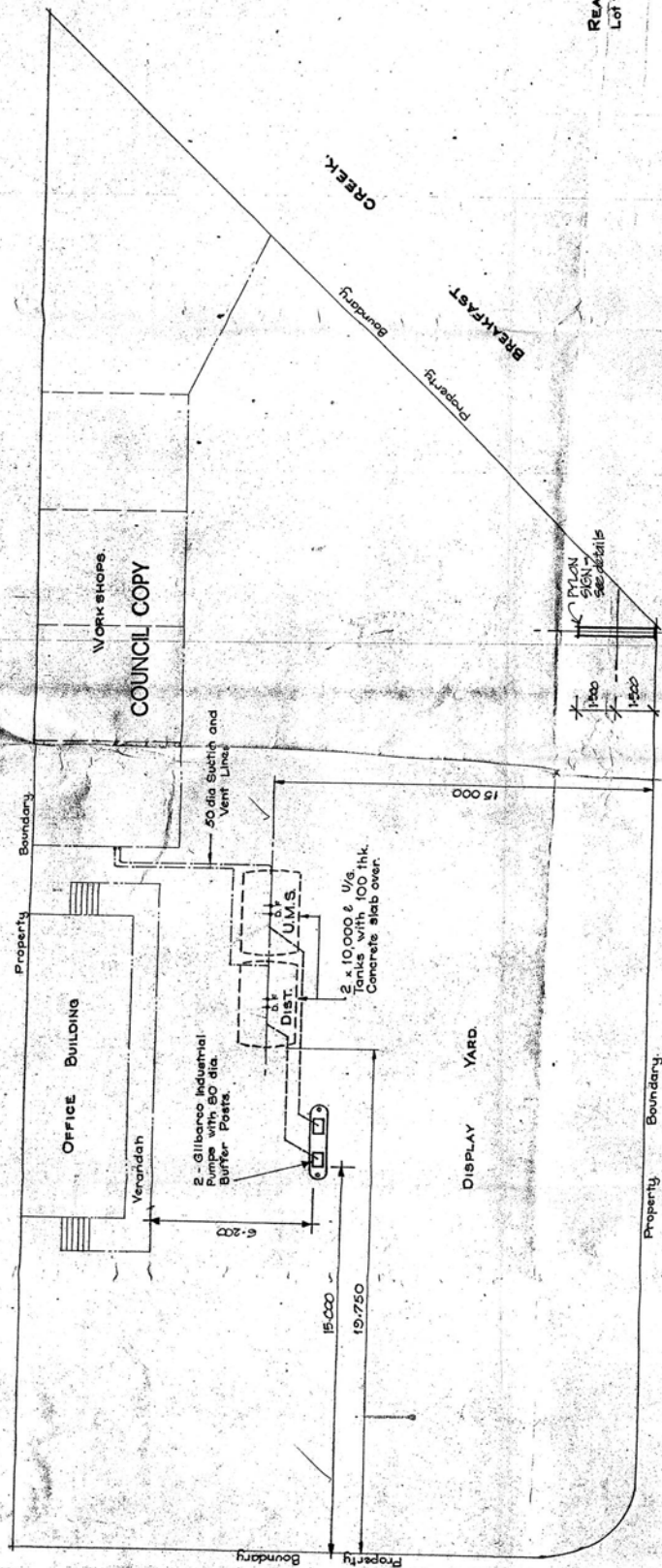
Please cancel  
licence as tanks for the  
storage of flammable & combustible  
liquids have been removed of  
site.

*David Samuel*

P.S. please refer file to SPOCL

TYPED AND CHECKED	<input checked="" type="checkbox"/>
MASTER FILE ADJ.	<input type="checkbox"/>
SIGN FILE ADJUSTED	<input type="checkbox"/>
MANUAL BILLING	<input type="checkbox"/>
NEW APPROVAL	<input type="checkbox"/>
ADMINISTRATION COSTS	<input type="checkbox"/>
REFUND	<input type="checkbox"/>
WRITE-OFF	<input type="checkbox"/>
DELETION	<input type="checkbox"/>

21/12/94



REAL PROPERTY DESCRIPTION  
Lot 1 on RP-152605.

No.	BY	AMENDMENTS	ISSUE	DATE
1				
2				
3				
4				
5				

DESIGNED	DATE
DRAWN	
CHECKED	
ENGINEER	
APPROVED BY	

COUNCIL COPY	
LOCATION	81 LUTVYCHE ROAD - WINDSOR
PROPOSED	FUEL INSTALLATION
FOR	G.K.N. RENTALS PTY. LTD.
SCALE	1:100
DRAWING NO.	R.B. 2001.
REV.	

**NOTES.**

- Installation to be carried out in accordance with the relevant standards and codes of practice.
- Test Certificates to be issued for Tank Compliance.
- Pumps to be identified for Industrial Use Only.

SITE PLAN

Lots 4 on RP98727  
110 Gympie Rd  
Kedron



Contact name : Saeed Asker

Telephone : 13 25 66 (8 am - 4.30 pm)

Fax (direct) : 3403 2755

Your ref :

Our ref : 314/38/86-MR345/110/

22 July 1997

MOBIL KEDRON  
118 GYMPIE RD  
KEDRON QLD 4031

Dear Sir

### APPROVAL TO OPERATE

Storage of Flammable and Combustible Liquids

JUNEHOLME PTY LTD 118 GYMPIE RD  
KEDRON 4031

I refer to your company's application for a Variation of Licence to be issued by Council pursuant to the provisions of the Building (Flammable and Combustible Liquids) Regulations 1994.

This is in respect of a service station situated at 118 GYMPIE RD KEDRON 4031 and described as Lot 4 on RP 98727, Parish of Kedron.

I am pleased to confirm that the Community Health Branch has granted approval to operate with respect to your application. The proposed variation to the existing installation(s) and storage quantities are subject to the conditions set out in Appendix "F" attached.

#### Licence Quantities

##### Flammable Liquid Class 3 Packaging Group I/II (Motor Spirit)

Two (2) 55 000 litre underground tanks.  
One (1) 13 000 litre underground tank.

##### Combustible Liquid C1 (Distillate)

One (1) 10 000 litre underground tank.

##### Combustible Liquid C2 (Waste Oil)

One (1) 2 300 litre underground tank.

To: Peter Steens (TUCN)



Queensland  
Government

ies Anita Packwood  
hone 3224 5090  
reference  
reference

26 February 2002

Ian Christensen  
Manager, Pollution Prevention Health and Safety  
Brisbane City Council  
PO Box 1434  
BRISBANE QLD 4001

Dear Mr Christensen,

Re: Lot 4 RP 98727  
Mobil Service Station  
118 Gympie Road  
KEDRON QLD 4032

Have copied  
to P. Heger

Environmental Protection Agency

Incorporating the  
Queensland Parks and Wildlife Service

On 26 February the EPA was advised at a meeting with representatives of PPK Environment and Infrastructure engaged by Mobil of the detail of the following hydrocarbon fuel leakage at the above service station site.


Approximately 11 months ago a fuel leak, estimated to be 14,000L occurred due to faulty pipe work beneath bowser number 5. The leak was below ground and is known to have reached groundwater at approximately 10.5m. Bedrock, which is expected to act as vertical confinement to the hydrocarbon plume was intersected at 11.5m - 12m. The contaminant plume has subsequently moved off-site underneath Gympie Road in an easterly direction. As the road is a declared road, Mr David Woods of the Department of Main Roads was notified by PPK.

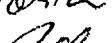
PPK's work on site has recovered 2,100L of phase-separated hydrocarbons (PSH) in 6 extraction events. These procedures will continue until PSH has ceased to be found and work will continue in the area until an adequate level of remediation is achieved. Vapour surveys have been conducted in stormwater services on and adjacent to the site. A report is to be submitted to the EPA in the near future by PPK regarding site remediation and management of any health and environmental risks associated with the contaminant plume. The most recent round of sampling and analysis has revealed elevated hydrocarbon C<sub>6</sub>-C<sub>9</sub> (15 000µg/L) and Benzene (8300µg/L) in groundwater beneath the median strip in Gympie Road.

There is a potential risk of infiltration of PSH, contaminated groundwater or vapour into in-ground services. The EPA recommends that Brisbane Water and City Works be advised of the situation in the event that infrastructure maintenance is required in this area and that inspection and monitoring of the local sewers and stormwater drains for hydrocarbon odour or contamination be undertaken to avert any potential health risk.

If you require any further information please contact the undersigned or Mrs Anita Packwood on (07) 3224 5090. EPA offices will provide updates of the situation as remediation progresses.

Yours sincerely,

  
Greg O'Brien  
Chief Scientific Advisor, Project Services

6/3/02  
NICK  
FYI +  
Team North.  


Page 1 of 2

288 Edward Street Brisbane QLD  
Queensland 4000 Australia  
GPO Box 2771 Brisbane QLD  
Queensland 4001 Australia  
Telephone (07) 3225 1827  
Facsimile (07) 3247 3278  
Website [www.env.qld.gov.au](http://www.env.qld.gov.au)  
ABN 87 221 158 786

**Brisbane City Council**

---

**To: File:** *314/38/86 - P020/230* **Date:** 25/09/02

---

**Attn:**

---

**CC:**

---

**From: Lisa Stano****Development Officer Environmental Health**

---

**Re: Fuel Leak, Mobil Service Station**  
**Address: 110 Gympie Rd Kedron**

---

**Customer and Community Services**

Development and Regulatory Services

960 Gympie Rd Chermide  
GPO Box 1434  
Brisbane Qld 4001

Phone: 07 3407 0726

Facsimile: 07 3407 0819

Email: [dohn3@brisbane.qld.gov.au](mailto:dohn3@brisbane.qld.gov.au)Internet: [www.brisbane.qld.gov.au](http://www.brisbane.qld.gov.au)

---

At the request of Antoinette Southwell, Solicitor for City Business a copy of a letter from the EPA to Brisbane City Council (26/02/2002) detailing a fuel leak incident that occurred at the Mobil service station at 110 Gympie Rd Kedron under the operation of Juneholm Pty Ltd has been put on every file where the flammable and combustible liquids licence is in the name of Juneholm Pty Ltd.

Council investigation into this incident is still continuing. Please refer to file 314/38/86-MR345/102(A1) for further information.



Lisa Stano  
Development Officer Environmental Health  
Licensing and Compliance North  
Development and Regulatory Services  
**CUSTOMER AND COMMUNITY SERVICES**

A02 | 99053



**Brisbane City Council**  
Customer Contact System

**ASSESSMENT REPORT**

**Approval to Operate**

Parent Document ->

Council  
Information

Created By : DOHN1

Date: 18/03/2002 07:57:19

**LICENCE : Flammable and Combustible Liquids**

**Report**

: Premises inspected 12/3/02 and full audit carried out - inspection with EHO's Sam Wong, David Armanelli, & Lisa Stano as a result of a notification of an environmental incident involving the loss of 14,000 litres of unleaded petrol from the suction line under dispensing pump no. 5 in April last year - according to the site manager all necessary repairs & testing has been carried out. All conditions of Appendix "F" attached were being complied with at the time of inspection, however records of stock inventory, equipment integrity testing and staff training were not made available - said to be held at head office in Newmarket, but not made available to Sam or David when owner was interviewed in relation to Environmental Incident - new conditions apply in relation to these matters.

Conditions Manager -->

Create Letter -->

Decision : APPROVED

Level : 2

Audit Status : Compliant

Next Inspection Date : 14/03/2003

Reason : Scheduled Inspection. Rated by : DOHN1 on 18/03/2002 08:31:22

Date Assigned : 14/03/2002  
Action Date (dd/mm/yy) : 18/03/2002

Field Time - Hours : 1. Minutes : 30  
Admin Time - Hours : 1. Minutes : 30

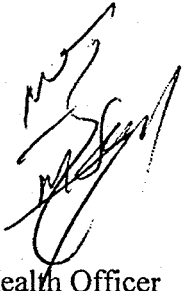
Assigned Region : North  
Assigned Person : DOHN1

Dispensers

Two (2) dual and five (5) single dispensing pumps for reseller purposes.

I wish you and your business every success and for any further assistance, please do not hesitate to contact your nearest Regional Health Customer Service Centre on 13 25 66.

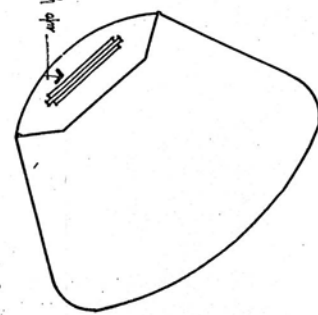
Yours sincerely

A handwritten signature in black ink, appearing to read 'Saeed Asker', written over the typed name and title.

Saeed Asker  
Environmental Health Officer  
**COMMUNITY HEALTH BRANCH**

— Mr. C. G. FLY, EACH  
CORE, WITH #12 BARS  
EVERY SECOND CORE  
FEET: 1049, 110 & 211.

— LITLED WALL  
AS SHOWN.



## SITE LAYOUT

substantially in your own mind

- [illegible]

FREE STANDING NOTE  
ACCEPTOR DUAL

10. <i>Acceptance</i> <i>These</i> <i>documents</i>		FILE	1946
9	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
8	1000 REP. SIGN A USE AGAIN, REP. SIGN	W	3/22
7	PROPOSED REPT. OF THE REPT. AGAIN	W	3/22
6	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
5	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
4	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
3	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
2	NOTE, ACCEPTANCE, SIGNATURE	W	3/22
1	NOTE, ACCEPTANCE, SIGNATURE	W	3/22

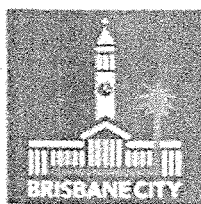
RD. GYMPIE

MUST NOT BE REPRODUCED  
BEFORE CONTACTING M/O ENQ.  
FOR LATEST ISSUE

**M.S.S. QUEENSLAND  
KEDRON  
STAFFORD & GMPLE  
SITE PLAN FOR NEW T**



Lots 7 on RP223902  
214 Lutwyche Road,  
Windsor



Copyright BCC, 2003  
WebBASX version 2.0

**Date:** 26/09/2005  
**Time:** 11:21:12  
**Userid:** ego4  
**Scale:** 1:1500

**Themes:**  
Acid Sulfate Soil  
Cadastral > 1:2500  
Continent Land Site  
Aerial Photo 1946

**Location:**  
214 LUTWYCHE RD, WINDSOR

### Disclaimer:

"While every care is taken by Brisbane City Council (BCC) and Dept. of Natural Resources & Mines (NRM) to ensure the accuracy of this data, BCC and DNR jointly and severally make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of data being inaccurate in any way and for any reason."

Based on Data provided with the permission of NRM:  
Cadastral Data (July 2005)



Lots 67 on RP80003  
112 Lutwyche Road,  
Windsor  
and  
Lots 68 on RP18524  
122-A Green Tce,  
Windsor



Brisbane City Council  
Community & Economic Development  
 Community Health & Safety  
 Manager's Office  
 Level 4 69 Ann Street  
 Brisbane Qld 4000  
 P O Box 1434  
 Brisbane Qld 4001

TO  
 Environmental Protection Agency

FACSIMILE NO:  
 3227 7677

ATTENTION:

Date:

No. Of Pages  
 (incl this one)

(Mrs) Aleena Lovejoy

20/10/2000

1

FROM

Patrick Gilfuis

Phone No:

3403 5564

Facsimile No.

3403 6567

Telephone 07 34034720  
 Facsimile 07 34039560

SUBJECT **Review Site**

108 Lutwyche Road, Windsor

Lots 63-69 RP 18524 & Lot 62-66 RP80002 &

Lot 67/68 RP 80003

Hello Aleena,

A recent check of Council's records, about the above address, confirms that the site does have current F & C Licence. They approved the site in 14 June 1974 and are licenced for the following.

One (1) 9 000 litre underground tank for Motor Spirits

One (1) 4 500 litre underground tank for Motor Spirit

One (1) 9000 litres underground tank for Distillate.

In January 1991 the 4 500 litre underground tank for Motor Spirits was sand abounded and was covered over. As for the location of the tanks the real property description is unknown.

Should you have any inquiries, please contact me.

Regards

Patrick Gilfuis

Land Contamination Support



Lots 733 on SL7090  
64 Gympie Rd  
Gordon Park





Mr Craig Manly  
Brisbane City Council  
960 Gympie Rd  
Chermside QLD 4032

Shell Engineering Pty Ltd

PO Box 1456

Brisbane QLD 4001

Australia

Tel (07) 3364 5157

Other Tel 0419 393 086

Fax (07) 3364 5372

Email ned.hamer@shell.com.au

Internet <http://www.shell.com.au>

31 January 2002

Our ref: PBA:SEE2

Dear Craig

As discussed during our telephone conversation today, this letter confirms that all known underground fuel storage tanks, bowzers and associated pipework have been removed from the former Shell Kedron Service Station located at the corner of Suez Street and Gympie Rd, Kedron. Removal of the infrastructure was undertaken in accordance with AS 1940 and the Shell Specification for Removal of Underground Storage Tanks. Tank removal information has been lodged with the QLD Environmental Protection Agency (EPA). The site has since been sold. However Shell Engineering is continuing to conduct groundwater sampling at the site in accordance with a Site Management Plan agreed with the QLD EPA. Should you have any further queries, please contact the undersigned on (07) 3364 5157.

Yours sincerely  
Shell Engineering Pty Ltd

Ned Hamer  
Project Manager (Environment)

## **SUITABILITY STATEMENT**

**DATE PRINTED: 31/07/2001**

### **OWNER**

THE SHELL COMPANY OF AUSTRALIA LIMITED  
P O BOX 1456  
BRISBANE  
QLD 4001

**DATE OF ISSUE : 31/07/2001**

### **PROPERTY DESCRIPTION**

LOT : 733      PLAN : SL7090  
60 GYMPIE ROAD  
KEDRON      4031

BRISBANE CITY COUNCIL  
EMR Site ID: 837      FILE REFERENCE: 902515

### **STUDIES UNDERTAKEN BY APPLICANT OR REQUESTED BY DIRECTOR**

Environmental Site Assessment, Shell Kedron Superwash, Corner of Suez Street and Gympie Road, Kedron, Brisbane, Queensland, prepared for Shell Services International (Australia) Pty Ltd by IT Environmental (Australia) Pty Ltd dated 8 June 1999 (Project Ref: J-20-07632A).

Environmental Site Assessment, Second Phase, Shell Kedron Superwash, Corner of Suez Street and Gympie Road, Kedron, Brisbane, Queensland, prepared for Shell Services International (Australia) Pty Ltd by IT Environmental (Australia) Pty Ltd dated 14 September 1999 (Project Ref: J207632C).

Validation Environmental Site Assessment, Former Shell Service Station, Corner of Suez Street and Gympie Road, Kedron, Brisbane, Queensland, prepared for Shell Services International (Australia) Pty Ltd by IT Environmental (Australia) Pty Ltd dated 19 November 1999 (Project Ref: J207632B).

Second Phase Environmental Site Assessment - Additional Information, Former Shell Kedron Superwash Service Station, prepared for the Retail Property Manager, the Shell Company of Australia Ltd, by the Environment and Safety Group, Shell Engineering Ltd dated February 2001 (Project Ref: /Kedron J186/Risk Assess/Kedron AOIG RA Rev01.doc/16-FEB-01).

Second Phase Environmental Site Assessment - Additional Information, Former Shell Kedron Superwash Service Station, prepared for Shell Engineering Ltd by IT Environmental (Australia) Pty Ltd dated 21 August 2000 (Project Ref: J207632D).

Additional information supplied in correspondence dated 16 May 2000 from IT Environmental (Australia) Pty Ltd.

Additional information supplied in correspondence dated 20 February 2001 from Shell Engineering Ltd.

Additional information supplied in correspondence dated 5 June 2001 from Shell Engineering Ltd.

## STATEMENT OF SUITABILITY

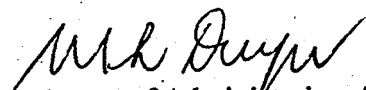
On the basis of the information supplied to this Department, the subject site is suitable for the following use(s) providing the site is used and managed as per the Site Management Plan attached as Annexure 1.

Residential with minimal opportunities for soil access; includes high-rise apartments and flats.

Other specific uses may be suitable for the site, please contact this Department for further advice. The suitability statement provides information on appropriate land uses at the date of effect. Subsequent uses of the site for notifiable activities or for situations where a hazardous contaminant is released into the soil may result in the need to review suitable uses or amend the attached site management plan.

## ENVIRONMENTAL MANAGEMENT REGISTER

LOT : 733 PLAN : SL7090 is recorded on the Environmental Management Register with a Site Management Plan. A copy of the Site Management Plan is attached as Annexure 1.



Delegate of Administering Authority  
Environmental Protection Act 1994

**ANNEXURE 1 - SITE MANAGEMENT PLAN**

LOT : 733 PLAN : SL7090 FILE REF : 902515 PRINTED: 01/08/2001

DATE OF EFFECT : 31/07/2001

**1.0 Summary of contamination**

The site was used as a service station from 1965 until it was decommissioned in 1999. The site incorporated seven underground storage tanks. Hydrocarbon impact remains in soil between 2m and 4.8m BGL, at several locations on site. Maximum concentrations of hydrocarbons include C<sub>6</sub>-C<sub>9</sub> = 872mg/kg, C<sub>10</sub>-C<sub>14</sub> = 1800mg/kg, benzene = 1.3mg/kg, toluene = 7.1mg/kg, ethyl-benzene = 18.1mg/kg and xylene = 175.9mg/kg. Lead was detected in two shallow (0.3m and 1.5m) soil sample locations on site at concentrations (maximum 1010mg/kg) lower than the exposure setting D levels stated in the QLD EPA *Guidelines for the Assessment and Management of Contaminated Land in Queensland (1998)*.

Groundwater at the site occurs generally between 5.9m and 7.1m BGL and appears to flow in a southerly direction under a hydraulic gradient of 0.002. Hydrocarbon impact, including benzene, toluene, ethylbenzene and xylene was detected in groundwater at levels exceeding the ANZECC guidelines for freshwater. Maximum hydrocarbon concentrations include C<sub>6</sub>-C<sub>9</sub> = 28mg/l, benzene = 11mg/l and toluene = 11mg/l. Dissolved-phase total polycyclic aromatic hydrocarbon (PAH) concentrations exceeded the ANZECC guidelines in both on-site and offsite wells. Lead was present in some on-site monitoring wells at levels above ANZECC guidelines for freshwater, with a maximum concentration of 0.02mg/l.

**2.0 Objective of the Plan**

The objectives to be achieved and maintained under this Site Management Plan (SMP) are to manage the soil and groundwater contamination remaining on site (Lot 733 SL 7090) in a manner which protects human health and the environment. The site-specific elements relating to these objectives are the placement and maintenance of barriers which safely separate users of the site and the contamination; and the application of controls on site excavation works.

**3.0 Achievement and management of objectives**

**3.1 Responsibility.** The owner of the land (as defined under the *Environmental Protection Act 1994*) is to ensure that the following conditions of this site management plan and any variations to the plan approved or required by the Environmental Protection Agency (EPA) are complied with.

The obligations and conditions set out in this site management plan bind the owner from time to time of the land.

The owner must provide any contractors, representatives and agents of the owner of the land associated with the design and construction of site facilities and infrastructure on the land with a copy of the approved SMP prior to the commencement of work on-site.

The owner must provide a copy of the SMP to any lessee who intends to undertake site excavations prior to commencement of work.

## **Pre-development stage / vacant land.**

**3.2.1 Site Capping.** While the land remains unused, the site is to be covered with a minimum of a healthy vegetative layer or hard stand to minimise dust emissions.

**3.2.2 Contaminated soil excavation.** Contaminated soil must not be removed from the site without adequate sampling and prior approval from the Administering Authority under Section 424 of the *Environmental Protection Act 1994* or equivalent.

## **3.3 Construction or Development Phase.**

**3.3.1 Risk Assessment.** A risk assessment completed at the site for potential health risks from BTEX impacted groundwater indicates a clay layer or liner is required in the area indicated on Figure 1 to reduce potential health risks associated with benzene vapours arising from groundwater beneath the site.

During construction of any proposed development, a clay soil layer or impermeable liner must be placed beneath the base of any foundations for proposed buildings which are located either partially or fully within the area indicated on Figure 1.

**3.3.2 Liner Specifications.** The liner must be constructed in accordance with the minimum specifications outlined in Table 1 (attached).

The layer or liner needs to be designed in such a manner that further building construction works will not penetrate and/or damage the liner. The integrity of the liner must be maintained at all times.

**3.3.3 Unexpected contamination.** It is a requirement of this plan that any odour emissions which occur during or as a result of excavation work must be immediately mitigated by use of water sprays, odour suppressants and/or covered by plastic. If such processes do not reduce odours to acceptable levels then work is to cease immediately and the odorous soils reburied on site or disposed of to licensed landfill under a section 424 Disposal Permit.

**3.4 Contaminated soil excavation and removal.** Contaminated soil must not be removed from the site without adequate sampling and prior approval from the Administering Authority under Section 424 of the *Environmental Protection Act 1994* or equivalent.

**3.5 Land Use.** The land is suitable for uses to a standard in accordance with exposure setting D as outlined in the *Guidelines for the Assessment and management of Contaminated Land in Queensland (May 1998)*. Specifically, residential with minimal opportunities for soil access (including high-rise apartments and flats), parks, recreational open space and playing fields (including secondary schools), commercial/industrial (including premises such as shops and offices as well as factories and industrial sites). Regular soil access by children is prohibited.

**3.6 Workplace Health and Safety.** A Workplace Health and Safety Plan which satisfies relevant obligations of the *Workplace Health and Safety Act 1995*, subordinate legislation or its equivalent is to be developed for any excavation work on the site. The Workplace Health and Safety Plan must specifically address dermal and inhalation exposures to site contaminants.

**3.7 Underground Services.** All under ground services must be constructed in either uncontaminated material or in trenches in which the services are surrounded by a minimum of 500mm of uncontaminated fill.

**3.8 General environmental protection.** Site works relating to excavation, removal and/or disposal of contaminated soil from the site must include provisions which ensure that the environment is protected,

preventing spread of contaminated soil by controlling site runoff, dust generation and spillage from haulage trucks or improper disposal of contaminated stormwater or seepage. Contaminated soil which is excavated and stored on the site for reuse must be covered with plastic sheeting and managed such that environmental harm is prevented. All contamination, safety and excavation processes are to be documented and records kept which demonstrate SMP compliance.

**3.9 Unexpected contamination.** It is a requirement of this plan that excavation works are to immediately cease and the EPA notified within 1 business day and advised of appropriate remedial action in the event that monitoring reveals offensive or noxious odour at the work site / and or evidence of gross contamination not previously detected. Any remedial action is to be developed by a member of a prescribed organisation with relevant qualifications and experience according to Section 381 of the *Environmental Protection Act 1994*.

Administering Authority approval is required before site works can recommence at that location.

In the event that grossly contaminated soils in addition to those detected during site investigations are identified during the course of construction, work in that area is to cease and the contamination is to be delineated by a suitable qualified person as described above and contained on site at a standard equivalent to that described in Section 3.3.

#### **4.0 MAINTENANCE AND MONITORING REQUIREMENTS**

The owner is to ensure that the following monitoring is carried out.

(a) Prior to redevelopment, the owner is to undertake and document a biennial inspection of the site to ensure that the vegetative and/or hardstand cover remains in good condition.

(b) Throughout the construction and development phase, details of inspections, monitoring of contaminated soil movements and disposal, and Workplace Health and Safety compliance is to be documented by the owner. Records are to be kept and made available to the administering authority on request.

(c) Within 28 days of the completion of site development works, a report must be submitted to the administering authority documenting details of the impermeable liner constructed, contaminated soil movements and disposals, and details of SMP compliance. This report should be supplemented by photographic records and must be prepared by an appropriately qualified person, as outlined in Section 381 of the *Environmental Protection Act 1994*.

(d) Groundwater monitoring will be undertaken every six months for a period of two years, at the end of this time the groundwater monitoring program will be reviewed and the necessity to continue monitoring determined. Groundwater monitoring results are to be submitted to the administering authority after each round of sampling for review.

(e) If phase separated hydrocarbons (PSH) are detected on the groundwater surface, the PSH will be recovered to minimise any ongoing source of dissolved-phase hydrocarbons.

(f) On completion of site development a biennial inspection of the site is to be undertaken to ensure that monitoring wells are still accessible and the integrity of the site capping is being maintained. Records of these inspections and of any site excavations or permits issued under Section 424 of the *Environmental Protection Act 1994* are to be maintained by the owner for inspection by authorised officers. The biennial period is to commence from the effective date of this plan.

(g) The EPA may undertake periodic site inspections to monitor the site in relation to the above



ditions.

This SMP has been developed to manage residual site contamination at the effective date. Subsequent uses of the site may result in the need to review the plan.

This SMP makes reference to a plan attachment that is available from the EPA if required

## **Table 1. Minimum Specifications for Construction of Vapour Barrier**

### **1.1 General Specifications**

- a. Sufficient preparation needs to be completed prior to installation of the liner to provide a graded surface to direct vapours to areas outside buildings or sealed surfaces.
- b. The liner should be placed such that any vapours that may accumulate beneath the liner are directed toward a point outside of buildings where vapours can migrate to the surface and diffuse through a garden bed or vapour vents.
- c. The liner should be placed at least 0.6m depth below grade to ensure that the barrier is protected from vehicular traffic and other post construction surface loads (ANZECC 1999).
- d. The liner material should have a permeability (K) of  $10^{-9}$  m/s or less (USEPA 1998).
- e. A gas drainage blanket consisting of a highly permeable sand should be placed beneath the liner to collect rising vapours. The blanket should have a minimum thickness of 0.15m (ANZECC 1999).
- f. Construction Quality Assurance (CQA) for liner material Manufacturing and Field Control Inspection and Tests should follow USEPA (1998) Guidelines.
- g. CQA inspections should be completed and documented by an independent qualified company.

### **1.2 Clay Liner Specifications**

- a. The compacted clay barrier should have a minimum thickness of 0.6m (ANZECC 1999).
- b. Clay parameters (ANZECC 1999): Plasticity Index: 10%-30%; <75 micron >30%; <2 micron >15%; Compaction Moisture Content: optimum to optimum + 6%; Compaction Density: >94% standard dry density.
- c. Results of testing will be required to be submitted to the Administering Authority to ensure compliance with the above.
- d. Clay should be compacted in a minimum of 4 lifts (layers) (ANZECC 1999).

### **1.3 Geomembrane Liner Specifications**

- a. Liner material should be compatible with hydrocarbon compounds present within vapours (see ANZECC 1999 for review of materials). High density polyethylene (HDPE) is the preferable Geomembrane material.
- b. Considerable care should be taken during construction to prevent liner puncture. If the liner is punctured during construction, the liner should be replaced or satisfactorily repaired ensuring quality control protocols are not compromised.

c. Liner sheets should be welded in accordance with the manufacturer's specification and relevant Guidelines (ANZECC 1999, USEPA 1998).

Refs: 1. ANZECC Australian and New Zealand Environment and Conservation Council *Guidelines for the Assessment of On-site Containment of Contaminated Soil*, Sept 1999.

2. USEPA United States Environmental Protection Agency *Evaluation of Subsurface Engineered Barriers at Waste Sites* August 1998.

Note: Given that no relevant Australian Guidelines exist for the construction of sub-building vapour barriers, guidelines for the construction of landfill caps/liners have been referenced. Where applicable, the ANZECC Guideline has been referenced. USEPA have been referenced where no ANZECC Guidelines exist. Both documents should be read as a guide prior to liner construction.

# LEGEND

INFERRED GROUNDWATER FLOW DIRECTION

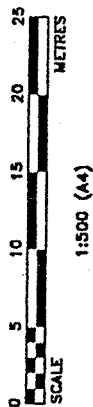
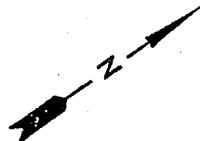
MONITORING WELL LOCATION

BENZENE µg/L	TOLUENE µg/L	ETHYL BENZENE µg/L	XYLENES µg/L	C <sub>10</sub> - C <sub>16</sub> µg/L
PSH	µg/L	µg/L	µg/L	µg/L

PHASE SEPARATED HYDROCARBONS  
MICROGRAMS PER LITRE  
LEVEL OF REPORTING

PROPOSED LINER LOCATION

NO TPH FRACTIONS WERE DETECTED



NOTES: 1. ALL LOCATIONS ARE APPROXIMATE.  
2. DATA COLLECTION DATE 07/07/99.  
SOURCE: SHELL DRAWINGS J188-42/G & J188-54/C  
IT ENVIRONMENTAL

REV. NO.: 1  
DRAWING DATE: 26/6/01  
ACAD FILE: J207632B-D03

FORMER SHELL KEDRON SERVICE STATION

## PROPOSED LINER LOCATION

CLIENT: SHELL ENGINEERING PTY LTD

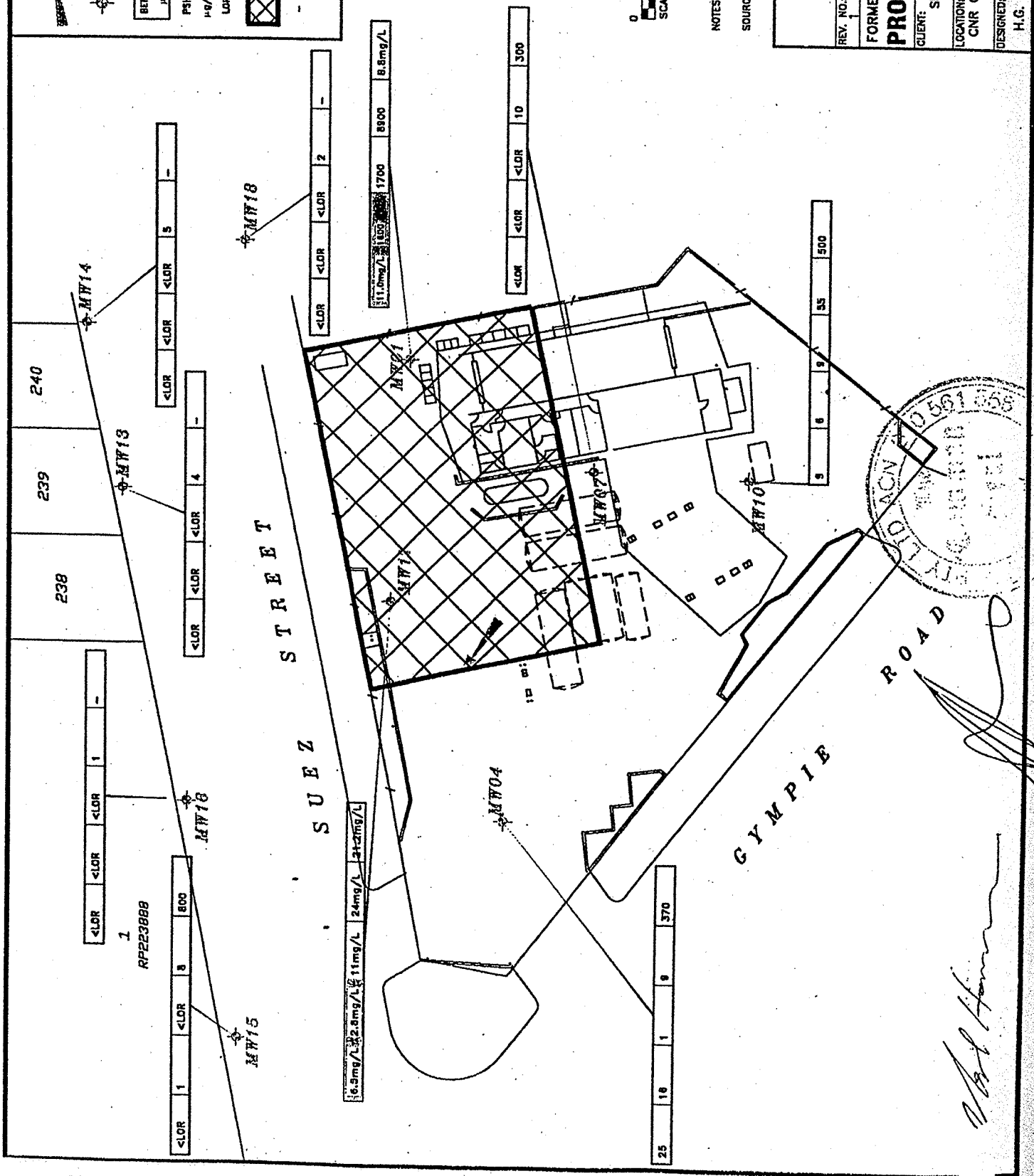
PM:

LOCATION: CNR GYMPIE ROAD & SUEZ STREET

PS:

DESIGNED: H.G. PROJECT NO: J207632D

FIGURE: 1



Mr S Asker  
268 8773  
268 8755

Additional extinguisher  
for diesel bowser.

(5)314/38/86-MR345/64

2 February 1995

Mistearl Pty Ltd  
GPO Box 2170  
CHERMESIDE QLD 4032

Dear Sir,

I refer to your application for a transfer of the licence to be issued by Council under the Building (Flammable and Combustible Liquids) Regulations 1994, in respect of service station situated at 64 Gympie Road, Kedron described as Lot 733 on SL 7090, Parish of Kedron.

This matter has been considered and I desire to advise that approval has been granted for the licence to be transferred in regard to the existing installations and storages to provide for:-

Licensed Quantities

Flammable Liquid Class 3 Packaging Group I/II (Motor Spirit)

Two (2) 54 000 litre underground tanks.  
Three (3) 18 000 litre underground tanks.

Combustible Liquid C1 (Distillate)

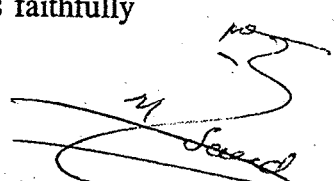
One (1) 54 000 litre underground tank.

Pumpheads

Five (5) dual and two (2) single dispensing pumps for reseller purposes.

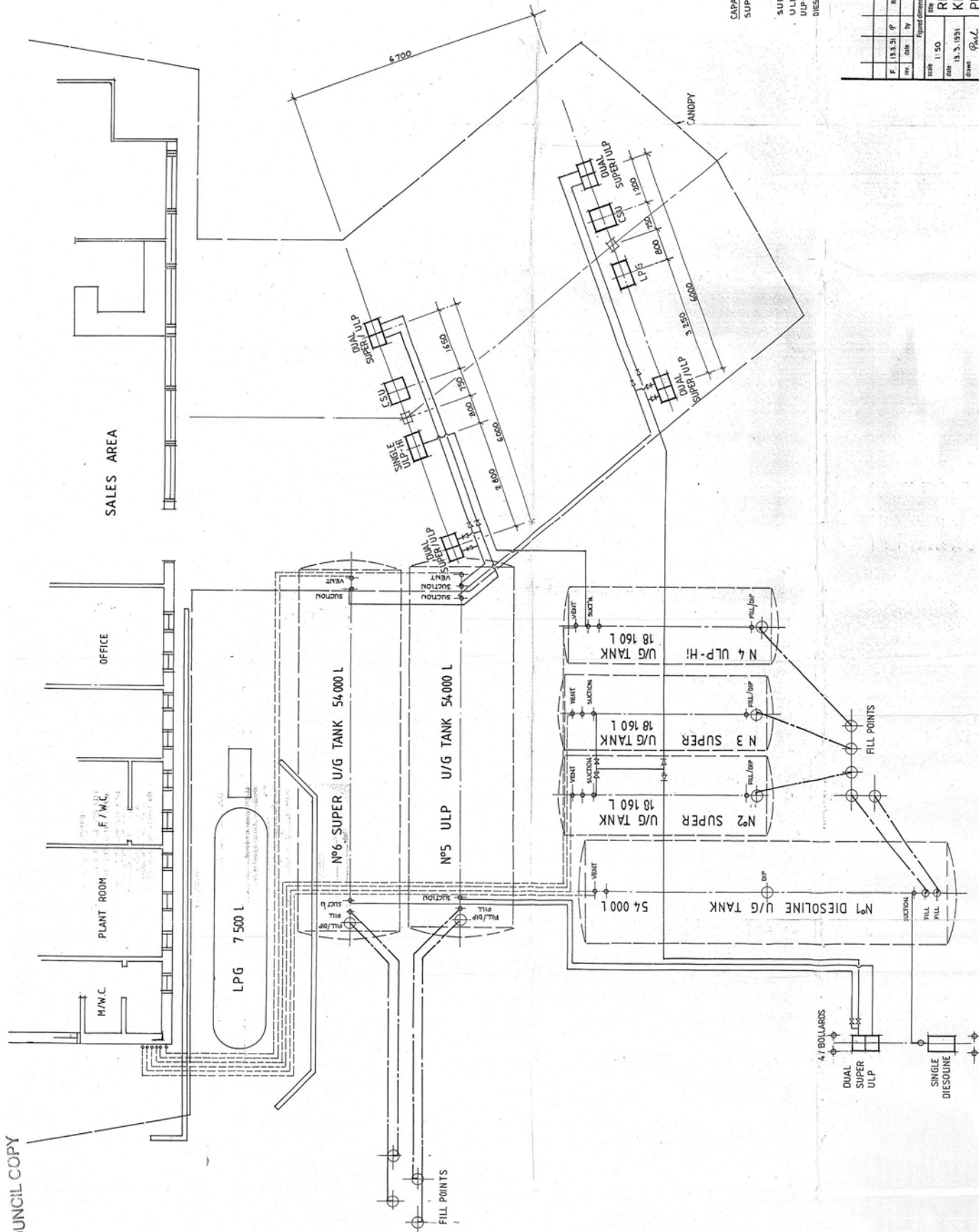
subject to the modifications of the proposal and conditions set out in the attached Appendix "J".

Yours faithfully

  
Saeed Asker  
ENVIRONMENTAL HEALTH OFFICER  
DANGEROUS GOODS MANAGEMENT UNIT

02.02.95.

COUNCIL COPY



COUNCIL COPY

CAPACITY :

SUPER TANK N° 6	54 000 L	5 HOSES
N° 2	18 160 L	5 HOSES
N° 3	18 160 L	5 HOSES
SUPER TOTAL	31 320 L	1 HOSE
ULP TANK N° 5	54 000 L	1 HOSE
ULP-HI TANK N° 4	18 160 L	1 HOSE
DIESEL LINE TANK N° 1	54 000 L	1 HOSE

REV.	DATE	BY	DESCRIPTION	APPROVED
F	13.3.91	P	REDAWN	

SCALE	1:50
DATE	13.3.1991
DRAWN	900/L
CHECKED	

THIS DRAWING IS THE PROPERTY OF THE SHELL COMPANY OF AUSTRALIA LTD. IT IS NOT TO BE REPRODUCED OR USED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE COMPANY.




**THE SHELL COMPANY OF AUSTRALIA LTD.**  
139 CORPORATION DRIVE, MELTON 4564

Sheet size: 1186 - 42  
REV. F









## Appendix B Results of Vehicular Inspection









Site Number	Site Name and Address	Current Land Use	Photograph
1	Citilink Business Centre. Cnr Campbell Street & Lutwyche Road	Commercial	
2	The Mews 121 Campbell Street	Commercial/residential. Next to inner city by-pass with retail shops underneath.	
3	Main Roads Building 63 Campbell Street	Commercial Disused site, abandoned building and car park. Corner of Horace Street, Inner City Bypass	

**SINCLAIR KNIGHT MERZ**


Site Number	Site Name and Address	Current Land Use	Photograph
4	Royal Brisbane Hospital	Commercial	
5	David Jones Auto Campbell Street, corner of Wren Street	Industrial Next to ICB Likely to have BCC licence as a Motor Vehicle Workshop.	
6	Commercial Building Corner Campbell & Waldron Lane	Commercial & Retail	

Site Number	Site Name and Address	Current Land Use	Photograph
7	Empty lot Corner Horace & Campbell Streets On EMR for Petroleum Product Storage	Reserve Disused site, no buildings, fill dumped on-site, some machinery on-site.	
8	BP Corner of Lutwyche Road and Butterfield Streets	Commercial Vacant land behind to the west	
9 F	Vacant 1 Butterfield Street Lot 3 on RP9939	Reserve Next to BP, scrap on-site Unknown site use	




Site Number	Site Name and Address	Current Land Use	Photograph
10	Guides QLD Butterfield Street	Commercial	
11	Main Roads Building 35 Herston Road	Commercial One office building and several demountables. HAZCHEM sign on gate.	
12	Yellow Cabs 35 Butterfield Street, Herston Lot 449 SL4244	Industrial On EMR Between Main Roads building and Auto Repairs. Refuelling, vehicle maintenance and air conditioner repairs.	




<b>Site Number</b>	<b>Site Name and Address</b>	<b>Current Land Use</b>	<b>Photograph</b>
13	Auto Repairs Herston Road	Industrial Vehicle (air conditioner repairs), next door to Yellow Cabs Likely to have ERA 28 as a Motor Vehicle Workshop.	
14	Boral Concrete Horace Street, Corner of Lutwyche Road	Industrial Known to have USTs on eastern portion of the block	
15	Car Yard Horace Street	Commercial	
16	Landscaping & Bitumen Supplies Corner Horace & Earle Streets (north of ICB exit)	Industrial Historical aerial photography search indicated former timber yard on this site	

**SINCLAIR KNIGHT MERZ**




Site Number	Site Name and Address	Current Land Use	Photograph
17	<p>Empire Business Furniture Supplies  95 Lutwyche Road, corner of Horace Street  Lot 11 on SP125074</p>	<p>Commercial  Partly disused site  EMR listed site for former USTs, sampling in 2000 revealed elevated Pb &amp; Zn</p>	
18	<p>Auto Repairer  15 Earle Street, Bowen Hills</p>	<p>Industrial  Listed on EMR</p>	
19	<p>Auto Repairer  10 Earl Street, Bowen Hills</p>	<p>Commercial</p>	



<b>Site Number</b>	<b>Site Name and Address</b>	<b>Current Land Use</b>	<b>Photograph</b>
20 <b>H</b>	Mechanical repairer Byrne Street	Industrial Historical use as industrial, potential risk of hazardous contaminants	
21	Shell Service Station 164 Lutwyche Road Lots 1 & 2 on RP196278	Commercial On EMR	
22 <b>G</b>	Freedom – Homemaker City 214 Lutwyche Road Lot 7 on RP223902	Commercial Location of former ASTs	

<b>Site Number</b>	<b>Site Name and Address</b>	<b>Current Land Use</b>	<b>Photograph</b>
23	Solace hand car wash and detailing 213 Lutwyche Road Lot 1 on RP86312 Cnr Granston & Lutwyche Roads	Commercial On EMR	
24	Train line – Windsor Station Prospect Road	Industrial	
25	Traffic Island Opp. Albion Road on Lutwyche Road	Reserve Historical Society building and possibly old fire station. Parkland	
26	Caltex Service Station 404 Lutwyche Road Lot 1 on RP97924 Cnr Fuller Street & Lutwyche Road	Commercial On EMR	

**SINCLAIR KNIGHT MERZ**


<b>Site Number</b>	<b>Site Name and Address</b>	<b>Current Land Use</b>	<b>Photograph</b>
27	Parkland Bradshaw Street	Reserve Located down slope from Lutwyche Road On EMR for Landfill	
28	Denning Car Audio 607 Lutwyche Road Cnr Felix & Lutwyche Roads Lot 2 on RP19349	Commercial On EMR for service station No info from BCC	
29	Motel Cnr Kedron Park Road & Gympie Road	Commercial	


Site Number	Site Name and Address	Current Land Use	Photograph
30	Emergency Services headquarters Cnr Kedron Park Road & Gympie Road	Commercial	
31	JB Hi-Fi Lot 733 on SL7090 64 Gympie Road, Gordon Road Cnr Suez Street & Gympie Road	Commercial On EMR for service station Servo decommissioned in 1999, SMP current for hydrocarbon impacted soil between 2-4.8mbgs. Groundwater 5.9-7.1 m bgs and flows in a southerly direction	
32	Ampol Service Station (formerly Mobil, Kedron) 110 Gympie Road, Kedron Lot 4 on RP98727 Cnr Gympie & Stafford Roads	Commercial	



Site Number	Site Name and Address	Current Land Use	Photograph
33	Freedom Fuels 295 Gympie Road, Kedron Lot 1 on RP83225 Cnr Gympie Road & Sadlier Street	Commercial	 A photograph showing a commercial site with a paved road, a red brick wall in the foreground, and various buildings and trees in the background under a clear blue sky.
34	BP Service Station Cnr Edinborough & Gympie Roads	Commercial	 A photograph of a BP service station with green and yellow branding, located at a road intersection. A red brick wall is visible in the foreground.

Site Number	Site Name and Address	Current Land Use	Photograph
35	WA Jolly Park Cnr Tobruk Street & Wesley Street	Reserve	East-West facing photo 
36	Brisbane Northside Public Health Unit Lots 20&21 on RP56334 45&46 Bryden Street	Commercial	
37	Park End of Bryden Street Potential former use as landfill	Reserve	



Site Number	Site Name and Address	Current Land Use	Photograph
38	QLD Health Geriatric Assessment & rehab unit Cartwright Street	Commercial	
39	Somerset Villas Cartwright Street Adjoins the QLD Health Geriatric Unit and is a new hospice.	Commercial	
40	Auto Leaders Cnr Lutwyche Road & Breakfast Creek (Opp. Horace Street)	Commercial	

Site Number	Site Name and Address	Current Land Use	Photograph
41 <b>J</b>	21-57 Rosemount Street Block between Nicholas & Northey Streets	Industrial Row of industrial sites, mixture of timber stores, car servicing, surgical storage and printer	  


Site Number	Site Name and Address	Current Land Use	Photograph
			
42	Vacant land next to BP Service Station 64 Bowen Bridge Road, Herston Lot 2 on RP158827	Reserve	

Site Number	Site Name and Address	Current Land Use	Photograph
43	RNA Showgrounds	Commercial Animal stables, car park, exhibition halls, railway	
44	Officeworks 270 Lutwyche Road	Commercial	
45 A	Vacant Land Lot 25 on RP841248 690-4 Lutwyche Road, Windsor	Vacant Lot next-door to Motel on junction of Lutwyche R, Gympie and Kedron Park Roads. Depression in ground possible stormwater collection area.	

Site Number	Site Name and Address	Current Land Use	Photograph
46	Woolwin Veterinarian Surgery Cnr Kent & Rose Streets, Woolwin	Commercial Former service station converted into vet surgery	
47	Melrose Park Cnr Rose & Roseleigh Streets	Reserve	

Site Number	Site Name and Address	Current Land Use	Photograph
48	Matilda Petrol Station Cnr Lodge and Dawson Streets	Commercial	 A photograph of a petrol station with a yellow and red canopy, a tall light pole, and a paved road in the foreground.
49	Dawson Park	Reserve	 A photograph of a grassy park area with a paved path, a large tree, and a clear blue sky.
50	Kalinga Park & surrounds Parkland Street	Commercial Bob Jane T mart, Yamaha dealer on neighbouring properties	 A photograph of a grassy area with a large tree, a paved path, and a building in the background.



Site Number	Site Name and Address	Current Land Use	Photograph
51	Toombul Shopping Centre	Commercial/Retail	

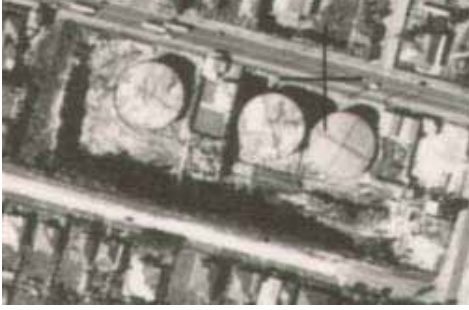
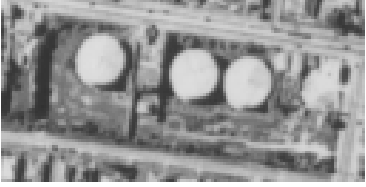
Site Number	Site Name and Address	Current Land Use	Photograph
			
52	Hendra Secondary College	Commercial	

## Appendix C Historical Aerial Photograph Interpretation



Table C.1. Airport Link Study Corridor

# Appendix C



■ Table C-1 Existing Environment Historical Aerial Photograph Interpretation

Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1946	<b>G</b> Lot 7 on RP223902 (16980m2) 214 Lutwyche Road, Windsor (Freedom Furniture)  <b>Petroleum Product Storage</b>	Site contains three (3) large circular above ground storage tanks of similar sizes. The shadows on the western portion of the premises suggest that the storage compound is partially constructed below the surrounding ground surface. One tank is located on the northern portion of the lot and separated from the two southern tanks by a small rectangular compound which contains two possibly a road loading gantry. This building compound is raised to an elevation similar to surrounding road. There is no bunding of the tanks. There is another compound containing two square buildings directly south of the southern most tank. This compound is within the incised tank storage area. There is also significant ground disturbance on the south eastern corner of the site.	North – Commercial/residential properties to the north	
			East – Lutwyche Road and residential properties.	
			South – Residential	
			West - Residential	
1955		Bund around tanks on the southern tanks and fence dividing north and south compounds. No indication of processing infrastructure or extensive above ground pipework suggesting all buried.	No significant changes	
1965		High fence separating northern tank compound from southern tank compound. Ground surface in north west corner is darker, perhaps hydrocarbon	No changes to surrounding land uses.	



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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1978		<p>staining or fill.</p> <p>The bunds surrounding both of the southern tanks have been reinforced and enlarged. The northern tank compound has been surrounded by a high fence, visual barrier for surrounding properties. A building has been constructed between the northern tank and the southern tanks to the right of the pre-existing building and it adjoins Lutwyche Road. This may be a loading gantry or canopy for a service station.</p>	No changes to the surrounding land uses	
1987		<p>Tanks, bunds and old building have been removed. Building still present in central portion of eastern boundary. No evidence of ground excavations/disturbance within vicinity of former tank locations to indicate removal of underground pipework.</p>	<p>North – commercial properties to the north of the site have been redeveloped and larger in scale.</p> <p>East – no significant changes</p> <p>South – no significant changes</p> <p>West- no significant changes</p>	



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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1994		Site has been completely redeveloped to the Freedom Furniture complex consisting of an eastern facing U-shaped building which borders the western boundary with Rosemount Terrace. A bitumen surfaced car park exists on the central-eastern portion of the site bordering Lutwyche Road. The entire site is covered with a hard pavement.		
2005		Freedom Furniture and Homemaker City, retail and commercial precinct		






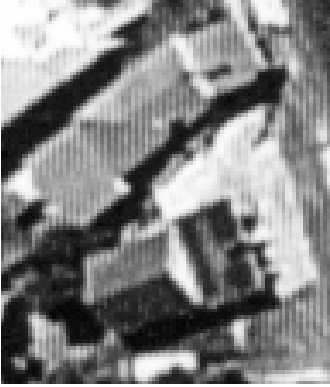
Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1946	Lot 8 on RP72098 189 Lutwyche Road, Windsor  <b>Place of interest</b>	Compound of buildings is located opposite the petroleum product storage facility which is now Freedom furniture. The premises may have been a hospital, army barracks or nursing home. Potential for small scale petroleum product storage.		
2005		Now QLD Health Geriatric Assessment & rehab unit		
1955	Lot 80 on CP816128 (Office Works)	Two large rectangular shaped buildings on the south eastern corner of the site. Directly north of the buildings lies a dam/pool, containing water or another aqueous substance. The north eastern corner is bare ground. The western portion of the site is covered with hard pavement and three buildings.	North - Residential	
		No significant changes	East – Lutwyche Road and Park	
		Substantial vegetation growth but no structural changes.	South – Constitution Road and residential dwellings.	
		Two buildings on south east corner removed and appears to be a carpark. One of the three buildings on the western boundary has been	West – Residential	
1965			No significant changes	
1978			No significant changes	
1987			No significant changes	

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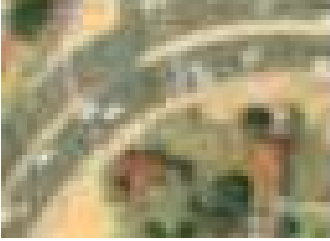

Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
		replaced by a larger dwelling. Dam/pool appears dry or infilled.		
1994		No significant changes.	No significant changes	
2005				
1946		Not on photo.		
1955	Lot 1 on RP19518 Melrose Park  <b>Landfill</b>	<p>Three areas of disturbance on the entire site. The boundary with Thorpe Street in the north eastern corner contains two (one square and one rectangular) tennis courts with a building on their southern border. The central portion of the western boundary with Roseleigh Street contains two buildings and an area of disturbance north of the buildings (most likely a car park). The south western corner of the site bordering on Rose Street contains the area of most disturbance consisting of bare pavement, potentially the landfill area.</p> <p>According to BCC records the site operated as a sanitary landfill between 13/3/1958 and 26/5/1958. Area of 47,849m2 depth of waste is approximately 2mbgs. No record of contents. Site not monitored by BCC.</p>	<p>North – Thorpe Street and low density residential</p> <p>East – Jimbour Street</p> <p>South – Rose Street and low density residential</p> <p>West – Roseleigh Street and low density residential</p>	

Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1965		The amount of disturbance is not significantly greater than previous years. Two grass tennis courts on the north eastern corner of the site.	No significant changes	
1969		The tennis courts still present on north eastern corner. There are isolated patches of scalding on the park, mainly over the cricket ground. Evidence of ground disturbance in south west corner of the site.		
1978		No significant changes		
1987		The tennis court complex in the north eastern corner appears to have been redeveloped and there is a roadway leading into the site.		
1994		No significant changes. Complete area is covered by open space and park.	No significant changes.	

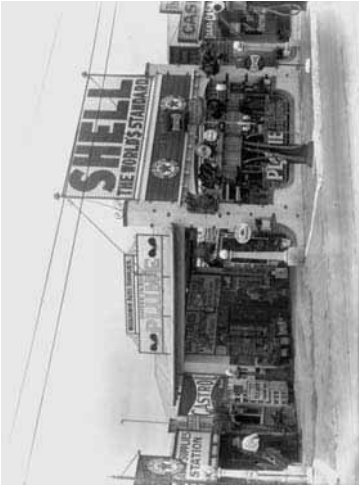

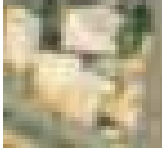

Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1955	Lot 1182 on SL9293 (Emergency Services)  <b>Landfill</b>	The northern portion of the site contains a raceway. Raceway and buildings encircled with a fence/wall. Series of buildings in the south east corner, presumed to be amenities for the raceway. Significance ground disturbance in the south eastern corner, may be location of landfill.	North – Kedron Brook and residential. Large disturbed areas. East – Park Road and residential South – Junction of Lutwyche, Kedron and Park Roads West – Kedron Road and residential	
1965		Raceway divided into three smaller oval fields covering the central and eastern portions of the lot, perhaps sporting ovals. There is a rectangular field north of the ovals and the northern boundary of lot with Kedron Brook contains land disturbance. There is a smaller rectangular field on the southern boundary with Kedron Road. The fence no longer present. Building configuration altered. Additional buildings divided into two compounds on the south east corner.	North – Kedron Brook and two sporting fields and residential.	
1978		There is no change to field configuration. An additional 5 rectangular fields on the southern boundary to the west of the existing fields. Significant additions to the building compounds. Buildings constructed to the east of the rectangular field and field surrounded by a fence.		
1987		Northern rectangular fields reclaimed by Kedron Brook and floodway protection structures have appeared on the northern boundary of the property. The original 1965 rectangular field on the southern boundary has been redeveloped into a swimming pool complex on the eastern side and tennis courts to the west.		



Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1994		No change		
2005		Redevelopment into the Emergency Services Headquarters.		
1955	<b>A</b> Lot 25 on RP841248 690-4 LUTWYCHE RD LUTWYCHE  <b>Service Station</b>	Two rectangular buildings present but low resolution of image prohibits detailed description.	North – Gympie Road and Kedron Park. East – Intersection of Lutwyche, Kedron park and Gympie Roads. Opposite road is Kedron Park Hotel and commercial/residential properties. South – Residential West – Residential and Kedron Brook @ 200m west.	
1965		No significant changes	No significant changes	1969 (Run 10)




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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1969		The lot contains a rectangular shaped building (northern portion of the site) that appears to have two canopies, one on the western side of the building and the other on the eastern side bordering onto intersection with Lutwyche, Kedron Park and Gympie Roads. The building has a chimney or stack and the building is separated from another building by a concrete pavement. The southern building consists of a smaller rectangular shaped building and a canopy on its eastern side.	No significant changes	 1969 (Run 9)
1978		Indeterminate		
1987		Indeterminate		
1994		Buildings have been removed and the adjacent house remains.		 1994 (Run 7)
2005		Vacant land south of the motel/hotel on the corner. Depression in ground, collection of stormwater, potentially location of former USTs.		






Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1935	Lot 2 on RP19349 607 Lutwyche Road, Woolloowin  <b>Petroleum Product Storage</b>	Formerly Woolloowin Auto Supplies. State Library holds this photo. No detail of locations of tanks or other maintenance works conducted on-site.	North – Residential East – residential South – Felix Road and residential West – Lutwyche Road and residential.	
1955		Not enough detail on photo	No significant changes.	
1978		New canopy and forecourt area present on boundary with Lutwyche Road. No evidence of above ground tanks or vents.	No significant changes.	
1987		No significant changes.	No significant changes.	
1994		Canopy structure and forecourt still present.	No significant changes.	
1946	<b>B</b>  Lot 882 on SL8070  <b>Quarry/Petroleum product storage</b>	Significant surface disturbance may be a quarry or landfill.	North – Lutwyche Road and Bowser Road, residential and park.	
	East – Lutwyche Road and residential			
	South – Medium density residential and Lutwyche Road.			
	West – Medium density residential.			

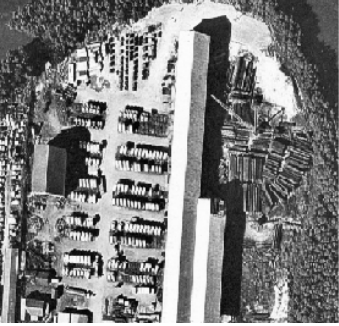

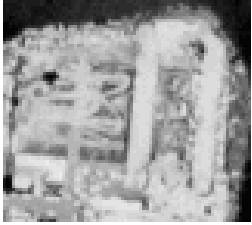
Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1955		There is a larger dwelling on the eastern boundary with Lutwyche Road. The northern section of the site is heavily vegetated around the boundary but the site suffers significant land disturbance the cause is unknown, possibly vehicular disturbance. There are three smaller buildings on the western portion of the site	No significant changes	
1965		Vegetation on northern portion of the block has been significantly reduced. L-shaped building erected on the western boundary. Increased amount of surface disturbance in central portion of the site.	No significant changes	
1978		Three rectangular buildings constructed on the western boundary. Further thinning of vegetation on eastern section of site. Cars parked onsite.	South-east a commercial development has appeared. Large buildings.	
1987		Vegetation reappears	South east- a carpark and significant expansion to buildings evident. North – buildings appear on the northern portion of the park.	
1994		No significant changes	No significant changes	

Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1946	Lot 1 on RP55684 19 Earle Street  <b>Scrap Yard</b>	Small square building in the north western corner. Waste or scrap metal stored in piles on the remainder of the western portion of the site along the boundary line. Eastern portion of the block is relatively vacant and vegetation and mangroves border the Brisbane River.	North – Commercial/light industrial use. East – Brisbane River and opposite bank is railway yard. South – Large allotment. Semi-vacant with the exception of building in the centre of the northern boundary. No defined land use. West – Earle Street. Opposite lot is a commercial/residential and surrounding residential property.	 1946 (Run 15)
1955		No significant change.	No changes	 QASCO Run 2A
1960		Rectangular buildings line the northern boundary. Additional rectangular building along the southern boundary. Stockpiles of scrap metal larger and on the eastern portion of the site. Riparian vegetation and mangroves still present. Staining of surface soils on and over the southern boundary onto Lot 1 RP55684. Is possibly heavy wind blown particles from scrap yard or sawmill dust.	South – Block now occupied by commercial/light industrial land use. Appears to be a sawmill, with piles of material stored on southern portion of the site. West – residential properties now commercial/light industrial.	
1969		No significant change		 Brisbane Floods, 1974
1978		Scrap car bodies removed along with building on the south western corner.		


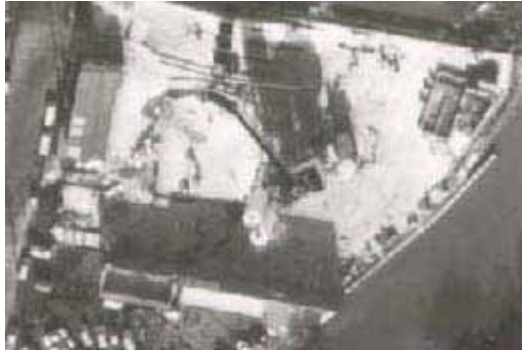
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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1987		No significant changes		
1994		Not on photograph		
2005		Site currently used for an auto repair business.		
1946	<b>C</b>  Lot 2 on RP56087 7 Earle Street, Windsor  <b>Sawmill/Timber treatment</b>	Lot is generally vacant. There are two small buildings (likely to be sheds) on the north western corner of the site. On the central northern boundary there is a larger square building. There is minor surface land disturbance on the eastern boundary. A pipeline crosses Breakfast Creek and onto the property, pipeline is underground. North of the pipeline and directly east of the square building are two circular structures, likely to be fans.	North – northern boundary shared with a scrap yard. Commercial/industrial. East – Breakfast Creek, then vacant land (vegetated) and then railway yards. South – Breakfast Creek and general industry West – Horace Street and Lutwyche Road. Commercial/industrial.	
1955		Minor surface disturbance		
1960		Pipeline across the river has been removed. Significant site disturbance with the development of a timber treatment facility/sawmill. The southern portion of the site contains timber storage and there appears to be a thin depression (perhaps a dip) on the western side of the property. Vehicles are parked on the central/northern portion of the lot.	East – the opposite bank of Breakfast Creek has been developed into an extension of the rail yards.	



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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1969		Two long, thin rectangular buildings have been constructed in the centre of the lot, covering the area otherwise covered by the dip.		 <p>QASCO Run 2A (1969)</p>
1974		Extensions to the major sawmill/treatment building on the southern boundary. Timber stockpiles moved to the northern-central portion of the site. Riparian vegetation still in tact.		 <p>Brisbane Floods (1974)</p>
1978		Site has been demolished with buildings and stockpiles removed.		



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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1987		No significant changes	North – Horace Street and commercial/Industrial East – Vacant land South – Breakfast Creek West – Commercial/Industrial	
1994		Not on photograph		
1946		Concrete batching plant. Three buildings along the northern boundary of the site with Horace Street. Riparian vegetation on southern boundary with Breakfast creek.		
1955	Lot 2-5 on RP152604 Lot 4 on RP51885 3-11 Horace Street, Windsor  <b>Concrete Batching Plant</b>	No significant changes		
1960		No significant changes		
1974		Loss of riparian vegetation. BCC records indicate in 1971 1x4,500L UST filled with sand and 2 x 13,600L USTs installed and there location is recorded. Unknown location of sand filled tank.		
1978		No significant changes		
1987		No significant changes		
1995		Not on photograph		





Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1946	<p><b>D</b></p> <p>Lot 153 on RP861394, Lot 1 on RP152622, Lot 65 on RP861394, 61A-67 Lutwyche Road, Bowen Hills</p> <p><b>Scrap Yard</b></p>	<p>A rectangular shaped building runs along the entire eastern boundary. The remainder of the central and southern portions of the lot consists of two and a half rows of scrap metal or tyres. There are a series of smaller square and rectangular shaped buildings on the northern portion of the lot.</p>	<p>North – Breakfast Creek and concrete batching plant</p> <p>East – commercial/industrial</p> <p>South – Campbell Street and residential</p> <p>West – Lutwyche Road and industrial/commercial</p>	
1955		<p>The central and southern portions of the premises are tidier with an area segregated via a fence on the southern side. No materials stockpiled in that corner.</p>		


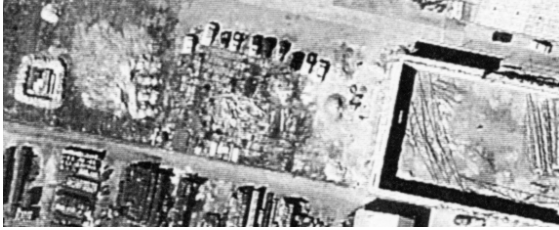
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<b>Year</b>	<b>Real Property Description</b>	<b>Description of Immediate Site</b>	<b>Description of Surrounding Area</b>	<b>Historical Aerial photography</b>
1965		No significant changes		
1978		Minor expansion to buildings and scrap metal/tyres no longer visible.		
1987		Not on photograph		
1994	<b>Lot 1 on RP92589</b> <b>121 Campbell Street</b>  <b>Hazardous Contaminants</b> <b>Scrap Yard/Boat maintenance facility</b>	Not on photograph		
1946		Premises used for ship maintenance and boat building. A dry dock or slipway is present on the north western boundary with Breakfast Creek. The site is heavily disturbed. The southern portion of the site contains numerous items being stockpiled above ground (possibly drums and mechanical parts. A vessel is on dry dock at the end of the slipway and another vessel is present above the high tide mark within the slipway.	North – Breakfast Creek and industrial uses. East – Industrial South – Campbell Street and residential uses. West – scrap yard and Lutwyche Road.	
1955		South western corner of the site vacant. No		



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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1969		<p>other significant changes</p> <p>Rectangular shaped building constructed on the western boundary. The northern portion of the site indicates the presence of six (6) thin, tall tanks and material segregated and stored on the bare ground. This material may be scrap metal or other wastes. Suggesting the cause for listing for hazardous contaminants on the EMR.</p>		
1974		<p>Slipway appears redundant. Six tall vessels still present in the central portion of the site. Possibly a batching plant or high pressurised vessels. Flood waters deem unable to assess whether wastes/materials are stored on the northern portion of the block.</p>		




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<b>Year</b>	<b>Real Property Description</b>	<b>Description of Immediate Site</b>	<b>Description of Surrounding Area</b>	<b>Historical Aerial photography</b>
1987		Tanks and materials stored have been removed.		
1994		Not on photograph		
1946	Lot 2 on RP92589 117 Campbell Street, Bowen Hills  <b>Hazardous Contaminants</b>	Materials stored on the northern portion of the premises closest to Breakfast Creek. A series of low-level buildings in the centre of the premises.	North – Breakfast Creek East – tidal inlet from Breakfast Creek and railway yards South – Campbell Street and residential uses. West - Commercial/Industrial	
1955		No significant change	No significant change	
1969		Buildings removed and new building under construction on the siding with Campbell Street. Waste material stored on the northern section of the premises.	South – Commercial/residential	

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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
1974	Lot 3 on RP890186 49-4 CAMPBELL ST BOWEN HILLS	Building complete. Flood water over the northern portion of the lot prevents identification of whether waste is still stored on the northern portion of the lot.	No significant change	
1987		No significant change	No significant change	
1994		Not on photograph		
1946		General industrial site. Materials stored on ground on north western corner.	North – Breakfast Creek and industrial uses East – Bulk tank storage (hydrocarbons perhaps)Railway yards/tracks South – Campbell Street and residential uses. West – Inlet of Breakfast creek//stormwater drain. Commercial/industrial.	
1955		No significant change	No significant change	
1960		Scrap yard or waste storage appears to have been developed on the south western corner bordering Campbell Street. There are stacks visible in the building on the eastern side of the premises suggesting that there may be a boiler or other device requiring a fuel source from underground fuel storages.	No significant change	

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Year	Real Property Description	Description of Immediate Site	Description of Surrounding Area	Historical Aerial photography
				(John Oxley Library, 1963)
1965		No significant change	No significant change	
1978		Building in south eastern corner of site along boundary with Campbell Street.	No significant change	
1987		No significant change	No significant change	
1994		Not on photograph	Not on photograph	
1965		Five rectangular buildings on site. No evidence of stacks or discharges to air or surface water. Two circular indentations on the ground surface may be representative of a UST or previous AST. Significant ground disturbance no evidence of waste being stored openly on ground surface. Site usage is uncertain from aerial photography.	North – northern boundary with man-made drainage channel. Vacant land East – Vacant land and residential. South – residential. West – residential.	
1978	<b>E</b> 825 on SL10177 4-74 Gellibrand Street, Clayfield East-West Arterial <b>Unknown usage</b> <b>Petroleum product storage</b>	Expansion to building complexes. No visible evidence or waste or hazardous material stored on open ground.	No significant changes.	
1994		<b>Not on photo</b>		
2005		Hendra Secondary College		

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<b>Year</b>	<b>Real Property Description</b>	<b>Description of Immediate Site</b>	<b>Description of Surrounding Area</b>	<b>Historical Aerial photography</b>
1965	Lot 1 on RP852746 & Lot 3 on RP33834 48-64 Lewis Street, Clayfield  <b>Landfill</b>	Significant ground disturbance and potential for site to have been used for a landfill. Adjacent block to the east has been used as a landfill.	North – Kedron Brook and residential. East – railway line and landfill. South – vacant land and residential. West – residential.	
1978		No further significant ground disturbance	No changes	
1994		No further significant disturbance.	No significant changes.	

Table C.2. 1 Kilometre Groundwater Drawdown Area

## Appendix C

Real Property Description	Description	Historical Aerial Photo
Properties within and surrounding Downey Park in Windsor	Majority of land has been cleared and some roads are present. Site appears to be a landfill. Riparian vegetation is present around two existing drainage channels and some vegetation in the south-east of the site. The site contains both commercial/industrial and residential areas. The commercial/industrial areas are heavily developed with large buildings surrounding Newmarket Road and the railway line to the north of the site. Some residential areas throughout the site. A large building is separated from the rest of the commercial/industrial sites, by the residential areas.	 1946
	An increase in the density of commercial/industrial buildings since 1946 and more land has been cleared including pre-existing vegetation at the south-east of the site. Both drainage channels have been filled in and a minor trench has been put in place of the larger channel to the west. No further residential houses have been added to the site.	 1955
	Majority of land now appears as cleared fields/parkland (Downey Park) with some playing fields at the south of the site. Some commercial/industrial works have been cleared to the south of Newmarket Road and carparking added whilst, work still continues to the north. No further residential houses have been added.	 1960





Real Property Description	Description	Historical Aerial Photo
	Buildings have been added to the south of Newmarket Road along with an increase in carparking spaces. The parkland appears to have matured with more trees around the perimeter.	 1969
	Commercial/industrial sites along with all residential lots have been cleared north of Newmarket Road. All residential lots, excluding one, have been cleared from the east of the site. Three paved tennis/netball courts are now in place of large building at the south-east of site.	 1978
	Playing fields are further developed including soccer and baseball fields. Buildings have been erected at the east of the site. More tennis/netball courts have been added to the paved site in the south-east corner of the site. A large commercial area has been added to the north of Newmarket Road with a large structure in place. The remaining residential lots to the north of Newmarket Road have been replaced with commercial properties. South of Newmarket Road, further commercial building have also been erected.	 1987





Real Property Description	Description	Historical Aerial Photo
	Commercial buildings have increased around Newmarket Road. Little change to Downey Park.	 1994
	Commercial precinct further developed south of Newmarket Road since 1994. Downey Park relatively unchanged.	 2001
Lot 19 on RP170266. 60 Bridge St Woolloowin	Holy Cross Catholic School - listed on the EMR as a petroleum/oil storage site.	 1946











Real Property Description	Description	Historical Aerial Photo
		 1955
		 1960
		 1969
		 1978









Real Property Description	Description	Historical Aerial Photo
		 1987
		 1994
		 2001
Lot 4 on RP152644. 71 Legeyt St Windsor	Artificial island, created by short-cutting the meander, is relatively untouched with riparian vegetation and some cover. Houses with jetties to the north-west of the island suggest the meander bend was there for sometime.	 1946

Real Property Description	Description	Historical Aerial Photo
	Island has been cleared of vegetation and a bridge entering from the north-west has been installed. A large structure, possibly 4 or 5 adjoining buildings are present on site with 3 smaller buildings and some vehicles also visible. Riparian vegetation remains intact.	 1955
	Further development of the large building has increased its size to possibly 7 or 8 adjoining buildings. More smaller buildings have been constructed and an there is increase in traffic indicated by the number of vehicles on site. Riparian vegetation remains intact. (According to the EMR, site is/has been used for petroleum product or oil storage).	 1969
	No further construction to the large structure. One of the smaller buildings has been removed and the meander has been infilled removing all riparian vegetation in the process. Houses to the north and west have also been removed.	 1978
	Most of the smaller structures have been removed and larger structures have been put in their place; there are now 3 large buildings on the 'island'. There is some regrowth in the vegetation surrounding the 'island'.	 1987




Real Property Description	Description	Historical Aerial Photo
	Site relatively unchanged since 1987, however; appears overgrown and slightly derelict.	 1994
	Much of the original buildings have been removed or appear abandoned. Surrounding vegetation has grown quite substantially.	 2001
Lot 23 on CP827248. 235-A Lutwyche Road Windsor	Meander bend in river has been previously shortcut to increase flow upstream, has resulted in the formation of an isolated piece of land with riparian vegetation especially on the 'older' western side of the 'island'. The surface of the 'island' appears disturbed possibly by plant traffic.	 1946
	Vegetation has matured and developed on the eastern side of the 'island' and the meander is beginning to silt up.	 1955





Real Property Description	Description	Historical Aerial Photo
	Further maturation of riparian vegetation. A bridge has been constructed on the northern side connecting the 'island' to the 'mainland'. A large pile of sediment has been transported to the island probably via the bridge.	 1969
	The island has been re-connected to the mainland by infilling the meander most likely with the sediment seen in previous photo. All vegetation appears to have been stripped from the site and houses to the north and west of the site have been removed.	 1978
	A railway line has been constructed around the previous meander. These tracks have been implemented to allow trains to turn around in the railway yards. Some riparian vegetation has regrown along the banks of the creek.	 1987
	Site unchanged.	 1994





Real Property Description	Description	Historical Aerial Photo
	Site unchanged.	 2001
Lot 2 on SP116599. 118-4 Abbotsford Road Bowen Hills (Northern Section)	Cleared land for rail yards is almost devoid of vegetation apart from the thin strip of riparian growth along the banks of Enoggera Creek. Area has only a few small shed-like structures in the southwest corner. Bridge across the creek is simple and one track wide in each direction. The yard does not contain many trains at the time of the photograph.	 1946
	A large cluster of structures, consisting of approximately 20 small, independent buildings/sheds, have been constructed in the southwest corner of the railyards. The bridge across Enoggera Ck appears to have been slightly upgraded. Yards contain approximately double the number of trains present in the 1946 photograph. A patch of vegetation has grown in the north of the yards and 2 considerable stockpiles of what may be coal, are apparent in the northwest corner. 3 smaller stockpiles are also present along the western side of the yards.	 1955

Real Property Description	Description	Historical Aerial Photo
	Buildings remain in the southwest corner and tracks appear to have been upgraded slightly. Majority of the vegetation has been stripped apart from riparian vegetation, and 4 structures appear in its place these are likely to again, be stockpiles.	 1960
	Yards appear busy. The bridge has been upgraded to a more significant structure. Stockpiles are far less obvious than in previous photographs. Only a couple of possible stockpiles in the yards.	 1969
	Buildings remain in the southwest corner stockpiles are not evident however; the quality of the photograph is not very high so further interpretation is hindered. It appears that most of the riparian vegetation has either died off or has been removed from the banks of the creek. An overpass track has been constructed in the southwest corner of the photo.	 1978



Real Property Description	Description	Historical Aerial Photo
	<p>Traffic, other than trains appear to use the site more frequently than previously. Piles of what may be scrap-metal, wood or, gravel, are visible on the western half of the yards at various locations. There is now a carpark in the south-western corner of the photograph.</p>	 <p>1987</p>
	<p>At least 4 buildings have been constructed in the northwest corner of the yards. Most of the rest of the yards are relatively unchanged.</p>	 <p>1994</p>
	<p>Riparian vegetation has grown back and some surfaces of the yards are now obviously paved. Some small shed-like structures now sit in the middle of the yards.</p>	 <p>2001</p>

Real Property Description	Description	Historical Aerial Photo
Lot 2 on SP116599. 118-4 Abbotsford Road Bowen Hills (Southern Section)	(Southwest of L) Yards are free from vegetation and consist of railway tracks, 2 large train sheds and 5 smaller structures. Tracks are quite busy. Riparian vegetation is minimal.	 1946
	Little change to the layout of the yards. The southwest corner appears to have a couple of large stockpiles, likely to be coal or gravel. Riparian vegetation as grown and is more dominant than in 1946.	 1955
	Some adjoining buildings have been constructed just northeast of the main train shed. Large stockpiles are now numerous in the yard. Riparian vegetation as further developed along the banks of the Enoggera Creek.	 1960
	Further construction has been undertaken in the yard. A large building now lies north of the large shed and a couple of buildings have also been established in the southwest paralleling the tracks. The stockpiles have been removed from the yard. Riparian vegetation remains intact.	 1969

Real Property Description	Description	Historical Aerial Photo
	The smaller of the 2 train sheds has been removed and a long narrow building now lies in its place. Construction of an overpass, that crosses the creek, has begun to assist with trains turning. Riparian vegetation appears to have been removed from the banks of the creek.	 1978
	Many of the original small buildings have been removed and more train sheds have been constructed. The overpass and turning tracks are now fully functional. A carpark has been established in the north of the photograph. Riparian vegetation has begun to grow back.	 1987
	Further construction of buildings in the north of the photograph and there is a number of small black stockpiles in the centre of the yard. Riparian vegetation has continued to grow.	 1994
	Extensions to the train sheds has been undertaken as a result, the train sheds now take up a large portion of land on the yards. Stockpiles are no longer visible and riparian vegetation is still intact and has thickened.	 2001

## Appendix D Environmental Management Plan

### D.1 EMP Objectives

This EMP is devised to ensure that identified environmental impacts relating to the Airport Link Project design, construction and operation are avoided or minimised. The procedures and objectives of the EMP are to:

- Provide guidance on environmental, health and safety aspects associated with construction and operation of the Airport Link Project;
- Manage the health and environmental risks from contaminated land;
- Manage the way contaminated spoil is removed and disposed to ensure the risk is not relocated to another site; and
- Minimise the potential and risk for hazardous events;

### D.2 Environmental Responsibilities

There are a number of contaminated land project responsibilities involved in the Airport Link Project, with respect to the *EP Act*. All project staff have a general environmental duty under Section 319 of the Act, and must not carry out any activities that cause, or are likely to cause, environmental harm, unless all reasonable and practical measures are taken to prevent or minimise harm. If project staff, while performing their work, notice that serious or material environmental harm is being caused or threatened by their actions or the actions of someone else, they should then report the matter, under section 320 of the Act. Additionally, project staff are required to comply with the following items at all times:

- Contractor's environmental policy and Environmental Management System (EMS);
- Relevant legislation, with particular attention to environmental legislation under this EMP;
- EMP requirements including relevant criteria for design, construction and operation; and
- Training requirements.

Project staff responsible for any baseline, construction or operational stage monitoring should ensure that all monitoring equipment used is regularly calibrated and the results recorded. All monitoring and sampling undertaken should be in accordance with the relevant agency guidelines or Australian Standards. All analytical testing performed should use National Association of Testing Authorities (NATA) approved procedures or if this is unavailable, be performed to the best relevant standard.

### D.3 Guidelines

The methodology used in this EMP is based largely on the following Australian guideline publications:

- d) Environmental Protection Act 1994;
- e) The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) (National Environment Protection Council [NEPC], 1999);

- f) Australian and New Zealand Environment and Conservation Council (ANZECC)/National Health and Medical Research Council (NHMRC). Guidelines for the Assessment and Management of Contaminated Sites;
- g) The Australian Standard AS4482.1-1997 Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds (Standards Australia, 1997); and
- h) Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland. (DoE 1998).

#### **D.4 Design and Construction EMP**

The following section identifies mitigation measures for the Airport Link Project.

- Manage the health and environmental risks from contaminated land;
- Manage the way contaminated spoil is removed and disposed to ensure the risk is not relocated to another site;
- Undertake detailed site history investigations of the study corridor to identify areas of potential soil contamination;
- Undertake a broad contaminated land investigation in locations where earthworks may potentially encounter contaminated soils (i.e. areas that are listed on the EMR and identified areas from a site history and observations analysis);
- Prepare and implement a Remediation Plan for removal, transport and remediation of contaminated soil, in accordance with:
  - ANZECC/NHMRC - Guidelines for Assessment and Management of Contaminated Sites; and
  - the EP Act as amended and other related Acts, Policies and Statutory Regulations of Federal, State and Local Government.
- Develop a Hazardous Materials Register, to include details on:
  - storage location;
  - storage requirements;
  - proper usage;
  - handling information; and
  - disposal procedures.
- Design chemical and fuel storage areas to comply with Australian Standards such as AS1940: Storage and Handling of Flammable and Combustible Liquids, and AS3780: The Storage and Handling of Corrosive Substances;
- Develop emergency response procedures, including Incident Management Plans (IMPs), to incorporate spill response procedures;
- Undertake induction and training regarding contaminated land issues for construction staff;
- Ensure the applicable guidelines are adopted for storage requirements including the adequacy and need for bunding around stores;

- Ensure spills and leaks are cleaned up and remediated as specified in IMPs;
- Ensure spill response and containment equipment is kept on the worksite in close proximity to storage and handling areas;
- Conduct validation sampling following remediation or covering of contaminated soil, and achieve sign-off by the EPA or by a certified, qualified auditor;
- Prepare and implement a Dust and Odour Management System for the duration of the construction activities, which includes:
  - Effective management of dust and odour generation;
  - Effective monitoring of impacts;
  - Effective communications with the local community on issues associated with the construction activities;
  - A clearly identified point of contact should the community have comments or complaints;
  - A well defined process to ensure that any issues are dealt with promptly and to a satisfactory level; and
  - A well defined system of recording any incidents or complaints.
- Utilise appropriate dust control measures while undertaking demolition activities;
- Install a truck wheel wash station at the worksites and construction zones, at locations where trucks will be moving from unsealed areas of pavement to sealed roads and mechanisms for cleaning out truck wash/dealing with sediment created;
- Keep the sealed access roads to the worksite sheds relatively dust free by regular sweeping and washing as needed;
- Cover trucks transporting excavated material to prevent wind blown dust during transport. Should train transport be utilised, controls on wind blown dust from spoil containers will be required;
- During the first disturbances of potentially odorous soil activities, implement appropriate management measures such as:
  - proceeding slowly during excavation of potentially odorous sites in order to determine whether odour impacts at off-site sensitive receivers will be likely;
  - in the event that it seems odour impacts will be likely, disturbances would only take place if the wind direction is not incident on sensitive receptors; and
  - if excavated soil is stockpiled on-site, it shall be covered with a tarpaulin or mulch to prevent odour release.
- Daily inspection of stockpiles, work areas and work practices to ensure Dust and Odour Management System is being implemented;
- Carry out dust monitoring at approved monitoring locations to assess the levels of dust generation affecting nearby sensitive receptors including increasing frequency if dust complaints occur;
- Formal inspections/audits of stockpiles, work areas and work practices to ensure Dust and Odour Management System is being followed;



- Develop and implement IMPs for the containment and clean up procedures for spillage of fuels and other dangerous goods, including the provision of access and egress of emergency vehicles;
- Develop and implement containment and clean up procedures dealing with the prevention and management of spillage of spoil during transport to spoil placement sites as part of a Sediment and Erosion Control Plan;
- Ensure the transport of regulated wastes and contaminated soils or other materials is conducted by licensed contractors for disposal at licensed facilities, in accordance with legislative requirements;
- Undertake refuelling and maintenance activities in designated bunded areas to minimise the potential for soil and water contamination to result from these activities. Appropriate spill response plans should also be prepared;
- If land is found effected by contamination, a SMP will need to be implemented;
- If spills occur during the transport of contaminated material, the area affected will require remediation.