

CSI ACTION SHEET

Page 1 of 1
Issue Date 16/07/96

Hazardous Waste and Contaminated Sites Section

FEE AMOUNT \$ 900-00 RECEIPT NO. 43508 RP/CoT YES NO FILE NO 902038

Officer	Action	Outcome	Signature & Date
Administration Officer <div style="border: 1px solid red; padding: 2px;">sch 4 - signature</div>	CSI List, UXO List, Mailtracker checked and relevant info attached to file UXO LA area? ☒	☒ Yes - forward to UXO advisor ☐ No - Write 'N/A' in UXO area below & pass to Dep. Registrar	<div style="border: 1px solid red; padding: 2px;">sch 4 - signature</div> 10/10/97
UXO Advisor	Assign classification	No UXO	<div style="border: 1px solid red; padding: 2px;">sch 4 - signature</div> 16/10/97
Deputy Registrar	Initial Entry/Update of CSR (copy to file)	R.T. 20/10/97	

GIVE UXO FILES TO UXO ADVISOR (S14 & Data Validation checks not needed)

Lot & Plan	Report No	Entry Date	Initial Status	Reclass. Date	Final Status
23 RP193152	140-037552	02/10/97	PRO		

County STANLEY Parish ENOCCERA

Is there a CHEM prescribed purpose on UXO site? YES NO

Officer	Action	Signature & Date
S14	Check for previous correspondence & attach to file	<div style="border: 1px solid red; padding: 2px;">sch 4 - signature</div> 22/10/97
Data Validation	Check Notification & General files for previous correspondence & attach to file	JO 21/10/97

PLACE CHEM FILES IN APPROPRIATE ORDER IN QUEUE

Officer	Action	Signature & Date
Contact Advisor	Review Assessment & check typed draft SCR	
<p>Date Final Submission Received _____ Key Contaminants _____</p> <p>Groundwater Contaminants _____</p> <p>Studies Undertaken: _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>		
Peer Review Advisor	Review Assessment & check typed draft SCR	
Contact Advisor	Check final SCR	
Manager	Final approval & sign SCR	
Deputy Registrar	Final check, update, reclassification on CSR	
GIS Officer	Enter relevant information to CSR-GIS	
Administration Officer	Mail SCR, copy to file, check CSI Action Sheet is complete, check file, update CSI file List, archive file	

[illegible]

Application for Site Contamination Report

FM37 OCT95



Queensland
Department of
Environment and
Heritage

Please note: Failure to lodge all required information will result in your application being rejected and returned to you for completion and re-submission.

HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

08 OCT 1997

Hazardous Waste and
Contaminated Sites Section
Department of Environment
and Heritage
PO Box 155
BRISBANE ALBERT STREET
QLD 4002

Complete both sides of this document: (attach a separate sheet if more space required)

1. Applicant details

(This is the contact person to whom the Site Contamination Report will be sent and to whom all enquiries will be directed)

Contact name s78(B)(2) Telephone (07) 3832 3222
Company name (if applicable) DAMES & MOORE
Postal address P.O. Box 251
SPRING HILL Postcode 4004

2. Lodging details (Complete this section only if form not lodged by applicant)

Contact name _____ Telephone _____
Company name (if applicable) _____
Postal address _____
Postcode _____

3. Owner's details (Agent's address not acceptable)

Full name QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD ✓
Postal address GWA HOUSE, 10 MARKET STREET
BRISBANE Postcode 4000

4. Site details

Name of local government BRISBANE CITY COUNCIL (BCC)
Suburb/town/city BRISBANE ADMINISTRATION CENTRE - BRISBANE Postcode 4000
Prescribed purpose/possible contaminating activity OLD SERVICE STATION SITE
Intended use of the site COMMERCIAL DEVELOPMENT

5. Location and zoning details of each parcel in the site

Street number	Street name	Lot on Plan description	Current zoning	Proposed zoning
5	CRIBB STREET	LOT 23 - RP193152	SPECIAL DEVELOPMENT	-
157	CORONATION DRIVE	LOT 23 - RP193152	COMMERCIAL RETAIL	-

Checklist — tick each box when complete

- ☒ Completed items 1-5 and written name and address in return slip (*you must answer each item*).
- ☒ Enclosed statutory fee.
- ☒ Enclosed consultants' report (as per *Guidelines for the Assessment of Contaminated Land in Queensland* or *Report Contents for the Investigation or Remediation of UXO Contamination*).
- ☒ Enclosed **legible** copy/copies of proof of ownership of site/s clearly showing the full name/s of the registered proprietor/s e.g. current Certificates of Title or Title Search/es. (Order in Council (Crown Land) and Form 100 (Change of Ownership Notification) may be accepted if the above are not available.)
- ☒ Enclosed **legible** copy/copies of all relevant registered plans (available from the Titles Section, Department of Lands) **clearly showing location of the site/s** and current registered plan details.
- ☒ Enclosed copy of a street map/area map clearly showing location of property.

refer
enclosed
reports

Office use only ▼

Date received	Date rejected (if applicable)	Date accepted	Initials

Enquiries to: B Ramirez
Telephone: 3227 7715 fax 3247 3278
Your reference:
Our reference: 902038

Permit to Remove and Dispose of Contaminated Soil

Pursuant to Section 424 of the *Environment Protection Act* 1994 (EP Act) permission is given to the applicant

Lisa Grannum

Brisbane City Council

Locked Mail Bag 6996

ALBION QLD 4010

Telephone: 3403 0418

Fax: 3403 0438

to remove and dispose of soil contaminated with

Lead

from 159 Coronation Drive, Milton

on Lot 16 on SP135243 and described in the following correspondence:

Application for Disposal Permit dated 07 August 2001.

The permit holder is responsible for ensuring that the specific and standard conditions in Schedules 1 and 2 of this permit are complied with by all personnel involved in the excavation, removal and disposal.

Signed

sch 4 - signature

Maack Dreyer

Chief Scientific Advisor (Contaminated Land Unit)

7/8/01

cc: S Region Attn: Hugh Wright

cc: BCC Nudgee Hardfill Attn: Cameron Jackson Fax 3403 2603

Notice to Applicant

The conditions on this permit have been decided after consideration of the standard criteria (EP Act) and for the purpose of preventing environmental harm. The applicant may apply for a review or appeal against the decision within 14 days of receipt of this notice (s521 and s531).

160 Ann Street Brisbane
Queensland 4000 Australia
PO Box 155, Brisbane Albert St
Queensland 4002 Australia
Telephone (07) 3225 1827
Facsimile (07) 3247 3278
Website www.env.qld.gov.au
ABN 87 221 158 786 5

Schedule 1 of 2 – Specific Conditions

The volume or mass of the contaminated soil shall not exceed 20 cubic metres.

The soil is to be disposed in accordance with the disposal facility approval letter dated 06/08/2001 at Brisbane City Council's Nudgee Hardfill.

The soil must be disposed between 07/08/2001 and 30/11/2001.

Other Conditions:

Nil.

Published on DES
Disclosure Log
RTI Act 2009

Schedule 2 of 2 – Standard Conditions

1. Volume / mass of contaminated soil

This permit applies to the specified volume or mass only. Any increases to the specified quantity will require a new disposal permit.

2. Disposal time period

Disposal must occur within the dates specified or a new disposal permit must be sought.

3. Excavation and loading

The holder of this disposal permit must take all reasonable precautions necessary to prevent the spillage of contaminated soil during loading and prevent contaminated soil being transported from the site of origin on vehicle tyres and plant and equipment.

4. Transportation

(a) *Transporter to be advised of permit conditions*

Prior to the removal of contaminated soil, the permit holder must provide a copy of the permit and conditions to the transporter.

(b) *Load to be secured*

The contaminated soil must be covered in the transportation vehicle to ensure that the contaminated soil or offensive or noxious gases are not released during transport.

(c) *Cleaning of vehicles and plant equipment*

An effective system must be employed for cleaning of vehicles and plant and equipment which are used to transport or handle contaminated soil which prevents release of contaminants onto any roadway or to any waters or stormwater drainage system.

(d) *Spillage*

Any spillage of contaminants must be cleaned up as quickly as practicable. Spillages must not be cleaned up by hosing, sweeping or otherwise releasing such contaminants or material to any stormwater drainage system, roadside gutter or waters.

5. Receival and disposal

(a) *Licence conditions*

The acceptance and disposal of the contaminated soil must comply with the licence conditions and the specific requirements of the disposal facility.

(b) *Disposal receipts*

Copies of disposal acceptance receipts are to be submitted to the Administering Authority within 10 working days of the date of disposal. The holder of, or person acting under a disposal permit, must comply with the conditions of the permit (s425 of the *Environmental Protection Act 1994*).

Maximum penalty - 100 penalty units.

6. Interim storage

Contaminated soil which is temporarily stored at the site of origin or approved for storage at a separate property must be stockpiled and securely covered and/or managed to ensure that:

- (a) rainwater is drained away from the stockpiles;
- (b) contaminated soil is not transported from the stockpile by wind or rainwater;
- (c) offensive odours or noxious gases are not released; and
- (d) soil underlying the stockpiles is not affected by contamination.

A report is to be provided to the Administering Authority within 28 days of final disposal that verifies that the storage area is fully cleared of contamination.

7. Treatment of soil

(a) Licensed facility

When treatment is to be undertaken at a licensed general waste disposal facility or regulated waste treatment and disposal facility, acceptance receipts must be provided to the Administering Authority within 10 days of contaminated soil delivery. The contamination level in the soil must be reduced to a level agreed by the Administering Authority. When contaminated soil is stored at such facility pending treatment, storage is to be undertaken according to condition 6.

(b) Other treatment sites

(i) Soil remediation and validation report.

The permit holder must provide a report of the soil remediation including chemical test results that validate that the contamination has been lowered to levels agreed with the Administering Authority. The report must provide evidence that the land underlying the treatment activity is not affected by contamination.

(ii) Environmental harm.

Treatment activities must be carried out to ensure that environmental harm is not caused and that contaminants including treatment agents are not released from the site by wind, stormwater or as offensive or noxious gases. The requirements of condition 6 also apply.

(c) Final disposal

When soil contamination has been reduced to levels acceptable to the Administering Authority, the soil may be disposed of as general fill unless otherwise specified in Schedule 1. The location of the final disposal site of the soil is to be identified after treatment by written advice to the Administering Authority.

****End of Document****

FACSIMILE



City Design

TO:	Mr B. Ramirez Contaminated Land Unit, EPA	DATE:	07/08/01
CC:		FAX:	3247 3278
FROM:	Lisa Grannum	PH:	3403 0418
RE:	Permit to Remove and Dispose of Contaminated Soil Coronation Drive, Milton	PAGES:	
		REF:	9802767

Level 3, T.C. Beirne Centre
315 Brunswick Street Mail
Fortitude Valley Qld 4006

Water and Environment
City Design
Locked Mail Bag 6996
Albion Qld 4010

Ph: 07 3403 0418
Fax: 07 3403 0438

Dear Mr Ramirez

Further to our disposal permit issued 27/06/01 we would like to apply for the disposal of an additional 20m³ of contaminated soil from Lot 16, SP135243. Attached please find a complete application for a Permit to Remove and Dispose of Contaminated Soil.

Additional services are being installed this Wednesday and the following Monday adjacent to 159 Coronation Drive (Fujitsu House), Milton (Lot 16, SP135243). The works will involve the excavation and subsequent disposal of approximately 20 m³ of contaminated soil. Testing of the area has been undertaken and the test results encompass the project area. Please refer to the previous applications for construction drawings and geotechnical test results.

Permission to dispose of the contaminated soil has been granted by City Waste Services (refer to attached memo).

If you require any further information, I may be contacted on 3403 0418.

Sincerely

sch 4 - signature

Lisa Grannum
Environmental Scientist
Water and Environment
CITY DESIGN





QUEENSLAND GOVERNMENT

Department of Environment

Hazardous Waste and Contaminated Sites Section
 Department of Environment
 PO Box 155
 BRISBANE ALBERT STREET
 QLD 4002
 Ph: (07) 3225 1827 Fax: (07) 3227 8341

Application for Disposal Permit

Section 118ZZF Environmental Protection Act (1994)

Please note: Failure to lodge all required information can result in your application being rejected and returned to you for completion and resubmission.

Important information (please read before completing this form)

A decision on an application will be made within 14 days of receipt, with a further 10 days allowed for preparation of the permit.

Complete the following: (Attach a separate sheet if more space required)

1. Applicant details

(This is the contact person to whom the disposal permit will be sent and to whom all enquiries will be directed)

Contact name Lisa Grannum Telephone 34030418 Fax 34030438
 Company name (if applicable) Brisbane City Council
 Postal address Locked Bag 6996 Albion Q Postcode 4010

2. Details of site(s) from which soil is to be removed

Has a site investigation report been submitted to DoE?

☒ Yes DoE file number 902038
☐ No

Real Property Description (Lot on Registered Plan) Lot 16 on Plan SP 135243

Street address of site(s) 159 Coronation Dr, Milton
 (adjacent to Fujitsu House)

Copy of current Certificate of Title

☐ Enclosed with this application
☒ Submitted previously to DoE within a site investigation report

Has the site been used for a notifiable activity as per Schedule 3 of the Environmental Protection Act 1994?

☒ Yes (please specify) Former service station
☐ No

Is the site presently being used for a notifiable activity?

☐ Yes (please specify) _____
☒ No

Is the site currently on the Environmental Management Register or Contaminated Land Register?

☒ Yes
☐ No (if no, a notification form must be submitted to DoE)

Has contaminated soil been removed from this site in the past?

☒ Yes (if yes, was an application for off-site disposal sought?) ☒ Yes ☐ No
☐ No

CONTAMINATED
 LAND NOTIFICATION
 07 AUG 2001

3. Approximate volume (in m³) of soil to be removed (allowing for excavation building)20 m³

Describe how the volume of soil to be removed was calculated _____

4. Dates between which soil will be moved to the disposal location (as per section 118ZZF(7), permits will only be valid between dates stipulated in the disposal permit)7/8/01 - 7/9/01**5. Justification of request**Reason(s) why on-site treatment or management not proposed lead
contamination

Will validation sampling be undertaken to ensure that contaminated soil is removed? _____

No, already validated via sampling**6. Description of contamination present in soil to be removed**Contaminants present Lead (Pb) 350 mg/kg

Please enclose with your application:

- ☐ Scaled diagram showing soil sampling locations and contamination source(s)
- ☐ Tabulation of soil analysis results
- ☐ TCLP results from relevant soil samples
- ☐ Laboratory reports and sample receipt advices for all soil analyses
- ☐ Explanation of location and depths of samples, how samples were collected, and how sample integrity was maintained.

See
previous
application

7. Written acceptance from the owner of site receiving soil

Is the soil being removed to a local government-administered landfill?

- ☒ Yes ☒ Written acceptance from the local government authority is enclosed
☐ No (Please complete section 8 of this application form).

Name and address of local government-administered landfill Nudgee Hardfill,
Nudgee Rd, Nudgee**8. Description of site receiving soil (complete this section only if soil not going to a local government-administered landfill)**

Real Property Description (Lot on Registered Plan) Lot _____ on Plan _____

Street address of site _____

Local government authority _____

- ☐ Copy of Certificate of Title provided
☐ Written acceptance from registered owner of site is enclosed with this application

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To: City Design	Date: 06/08/2001
Attn: Lisa Grannum	
CC: Lea McShane - City Waste Services	
From: Cameron Jackson	
Re: Disposal of Contaminated Soil - 159 Coronation Drive, Milton (Lot 16 SP135243)	

**Operations Branch
Industrial Waste
Management Services**

Oxley Ck. WWTP
240 Donaldson Road
Rocklea Qld 4108
Tel.: 07-3403 2609
Fax: 07-3403 2603
Mobile: 0419 707 055
E-Mail: bcc34bw@brisbane.qld.gov.au

In response to your request on 6 August 2001 regarding the disposal of an additional 20 cubic metres of heavy metals impacted soil from the abovementioned site, I am able to confirm that based on the chemical analysis results supplied by yourself, the soil will be accepted for disposal at Brisbane City Council's (BCC's) Nudgee Hardfill, Nudgee Road, Nudgee, as a Class 13 waste (\$25.00 per tonne FY02 [including GST]) subject to the following conditions:

- loads of dry soil must be wetted with water and all loads of soil must be covered prior to transportation for suppression of dusts;
- waste approved for disposal to landfill must be accompanied by a completed BCC solid waste manifest docket for each waste Class during transportation and disposal operations; and
- BCC reserves the right to immediately suspend and/or terminate the disposal of any material to its landfills if, in the opinion of BCC, such material creates either a public nuisance or an environmental nuisance or poses occupational health and safety concerns for landfill staff.

For disposal arrangements (ie. waste manifest) and confirmation of charges, contact Leanne McShane from BCC City Waste Services on (07) 3403 7784. Please note that City Waste Services require 24 hours notice to organise disposals to Hardfill sites.

Yours faithfully,

sch 4 - signature

Cameron Jackson
Supervising Chemist Hazardous Waste

Reference Number: E11081A



OUR BUSINESS - A BETTER BRISBANE

\\SOCKNWT1\GROUPS\TRADEWASTE\B50348\W\WMP\CONT\SOIL\BCC\CITYDESIGN\E11081A_CLASS13_METALS.DOC

160 Ann Street . Brisbane Queensland . PO Box 155 . BRISBANE ALBERT STREET QLD 4002
Telephone (07) 3227 6422 . Facsimile (07) 3247 3278

Enquiries to: B Ramirez
Telephone: 3227 7715 fax 3247 3278
Your reference:
Our reference: 902038

Permit to Remove and Dispose of Contaminated Soil

Pursuant to Section 424 of the *Environment Protection Act* 1994 (EP Act) permission is given to the applicant

Lisa Grannum
Brisbane City Council
Locked Mail Bag 6996
ALBION QLD 4010
Telephone: 3403 0418
Fax: 3403 0438

Rayna,
Pls update EPRD, then back to me.
Thanks

sch 4 - signature

27/6/01

to remove and dispose of soil contaminated with
Lead

from 159 Coronation Drive, Milton
on Lot 16 on SP135243 and described in the following correspondence:

Application for Disposal Permit dated 27 June 2001.

The permit holder is responsible for ensuring that the specific and standard conditions in Schedules 1 and 2 of this permit are complied with by all personnel involved in the excavation, removal and disposal.

Signed

sch 4 - signature

Toni Groves
Principal Scientific Advisor (Contaminated Land Unit)

27/6/01

cc: S Region attn Hugh Wright

cc: BCC Nudgee Hardfill attn Matthew Armistead fax 3403 7781

Notice to Applicant

The conditions on this permit have been decided after consideration of the standard criteria (EP Act) and for the purpose of preventing environmental harm. The applicant may apply for a review or appeal against the decision within 14 days of receipt of this notice (s521 and s531).

Schedule 1 of 2 – Specific Conditions

The volume or mass of the contaminated soil shall not exceed 20 cubic metres.

The soil is to be disposed in accordance with the disposal facility approval letter dated 27 June 2001 at Brisbane City Council's Nudgee Hardfill.

The soil must be disposed between 27/06/2001 and 26/09/2001.

Other Conditions:

Nil.

Published on DES
Disclosure Log
RTI Act 2009

Schedule 2 of 2 – Standard Conditions

1. Volume / mass of contaminated soil

This permit applies to the specified volume or mass only. Any increases to the specified quantity will require a new disposal permit.

2. Disposal time period

Disposal must occur within the dates specified or a new disposal permit must be sought.

3. Excavation and loading

The holder of this disposal permit must take all reasonable precautions necessary to prevent the spillage of contaminated soil during loading and prevent contaminated soil being transported from the site of origin on vehicle tyres and plant and equipment.

4. Transportation

(a) *Transporter to be advised of permit conditions*

Prior to the removal of contaminated soil, the permit holder must provide a copy of the permit and conditions to the transporter.

(b) *Load to be secured*

The contaminated soil must be covered in the transportation vehicle to ensure that the contaminated soil or offensive or noxious gases are not released during transport.

(c) *Cleaning of vehicles and plant equipment*

An effective system must be employed for cleaning of vehicles and plant and equipment which are used to transport or handle contaminated soil which prevents release of contaminants onto any roadway or to any waters or stormwater drainage system.

(d) *Spillage*

Any spillage of contaminants must be cleaned up as quickly as practicable. Spillages must not be cleaned up by hosing, sweeping or otherwise releasing such contaminants or material to any stormwater drainage system, roadside gutter or waters.

5. Receival and disposal

(a) *Licence conditions*

The acceptance and disposal of the contaminated soil must comply with the licence conditions and the specific requirements of the disposal facility.

(b) *Disposal receipts*

Copies of disposal acceptance receipts are to be submitted to the Administering Authority within 10 working days of the date of disposal. The holder of, or person acting under a disposal permit, must comply with the conditions of the permit (s425 of the *Environmental Protection Act 1994*).

Maximum penalty - 100 penalty units.

6. Interim storage

Contaminated soil which is temporarily stored at the site of origin or approved for storage at a separate property must be stockpiled and securely covered and/or managed to ensure that:

- (a) rainwater is drained away from the stockpiles;
- (b) contaminated soil is not transported from the stockpile by wind or rainwater;
- (c) offensive odours or noxious gases are not released; and
- (d) soil underlying the stockpiles is not affected by contamination.

A report is to be provided to the Administering Authority within 28 days of final disposal that verifies that the storage area is fully cleared of contamination.

7. Treatment of soil

(a) Licensed facility

When treatment is to be undertaken at a licensed general waste disposal facility or regulated waste treatment and disposal facility, acceptance receipts must be provided to the Administering Authority within 10 days of contaminated soil delivery. The contamination level in the soil must be reduced to a level agreed by the Administering Authority. When contaminated soil is stored at such facility pending treatment, storage is to be undertaken according to condition 6.

(b) Other treatment sites

(i) Soil remediation and validation report.

The permit holder must provide a report of the soil remediation including chemical test results that validate that the contamination has been lowered to levels agreed with the Administering Authority. The report must provide evidence that the land underlying the treatment activity is not affected by contamination.

(ii) Environmental harm.

Treatment activities must be carried out to ensure that environmental harm is not caused and that contaminants including treatment agents are not released from the site by wind, stormwater or as offensive or noxious gases. The requirements of condition 6 also apply.

(c) Final disposal

When soil contamination has been reduced to levels acceptable to the Administering Authority, the soil may be disposed of as general fill unless otherwise specified in Schedule 1. The location of the final disposal site of the soil is to be identified after treatment by written advice to the Administering Authority.

****End of Document****

FACSIMILE

**City Design**

TO:	Mr B. Ramirez Contaminated Land Unit, EPA	DATE:	27/06/01
CC:		FAX:	3247 3278
FROM:	Lisa Grannum	PH:	3403 0418
RE:	Permit to Remove and Dispose of Contaminated Soil Coronation Drive, Milton	PAGES:	
		REF:	9802767

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

Water and Environment
City Design
Locked Mail Bag 6996
Albion Qld 4010

Ph: 07 3403 0418
Fax: 07 3403 0438

Dear Mr Ramirez

Further to my facsimile date 27 June 2001, please note that the water main will be installed within Lot 16, SP135243 and **not** Lot 17. This is an area of land reclaimed by Brisbane City Council and is the area described as the "nature strip".

If you require any further information, I may be contacted on **3403 0418**.

Sincerely

Lisa Grannum
Environmental Scientist
Water and Environment
CITY DESIGN

**CONTAMINATED
LAND SECTION**

27 JUN 2001

FACSIMILE



City Design

TO:	Mr B. Ramirez Contaminated Land Unit, EPA	DATE:	27/06/01
CC:		FAX:	3247 3278
FROM:	Lisa Grannum	PH:	3403 0418
RE:	Permit to Remove and Dispose of Contaminated Soil Coronation Drive, Milton	PAGES:	
		REF:	9802767

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

Water and Environment
City Design
Locked Mail Bag 6996
Albion Qld 4010

Ph: 07 3403 0418
Fax: 07 3403 0438

Dear Mr Ramirez

Attached please find a complete application for a Permit to Remove and Dispose of Contaminated Soil and a copy of construction Drawing No 9802767 Sheet 36.

Further to our telephone conversation on 25 June, would you please consider issuing a permit for further works occurring adjacent to 159 Coronation Drive, Milton (Lot 17, SP135243). These works are scheduled to commence Wednesday, June 27th (today) and are anticipated to conclude in two (2) weeks.

The works include the upgrading of a water main from within the "nature strip" adjacent to 159 Coronation Drive and will involve the excavation and subsequent disposal of approximately 20 m³ (20 tonnes) of contaminated soil. Testing of the area has been undertaken and the test results will encompass the project area. Please refer to the permit granted to BCC 14 Feb 2001 (your Reference No 902038) for the Contaminated Land Investigation and Title Searches.

Permission to dispose of the contaminated soil has been granted by City Waste Services (refer to attached memo).

If you require any further information, I may be contacted on 3403 0418.

Sincerely

sch 4 - signature

Lisa Grannum
Environmental Scientist
Water and Environment
CITY DESIGN



FACSIMILE



To: **City Design** Date: **27/06/01**
 Attn: **Lisa Grannum** Fax: **30438**
 CC: **Lea McShane - City Waste Services** Pages:
 From: **Matthew Armistead**
 Re: **Disposal of Contaminated Soils -**
 159 Coronation Drive
 Milton.

Brisbane City Council**City Waste Services**
City Business174 Gardner Road
Rosedale QLD 4123
GPO Box 1434
Brisbane Qld 4001

Phone: 07 3403 7742

Facsimile: 07 3403 7781

E-mail: tcowm@brisbane.qld.gov.auInternet: www.brisbane.qld.gov.au

Dear Lisa,

In response to your request on 27 June 2001 for the disposal of 20 cubic meters of heavy metals impacted soil from the abovementioned site, I am able to confirm that based on the chemical analysis results supplied by yourself, the soil will be accepted for disposal at Brisbane City Council's Nudgee Hardfill, Nudgee Road, Nudgee, as Class 13 Material (Waste Type 83). Charged at \$25 per tonne.

The following conditions apply.

- dry loads of sediment must be wetted with water and all loads of sediment must be covered prior to transportation for suppression of dust;
- waste approved for disposal to BCC's Hardfill/Landfill must be accompanied by a completed BCC solid waste manifest docket for each waste Class during transportation and disposal operations; and
- BCC reserves the right to immediately suspend and/or terminate the disposal of any material to its landfills if, in the opinion of BCC, such material creates either a public nuisance or an environmental nuisance or poses occupational health and safety concerns for landfill staff.

For disposal arrangements (ie waste manifest) and confirmation of charges, contact Lea McShane from BCC City Waste Services (CWS) on (07) 3403 7784. Please note that CWS require 24 hours notice to organise acceptance of waste to the Brisbane Landfill/Hardfill sites.

Regards, // //

sch 4 - signature

 Matthew Armistead
 Environmental Scientist
 City Waste Services

**CONTAMINATED
 LAND SECTION**
 27 JUN 2001

Reference Number: 010127

IF THIS FACSIMILE TRANSMISSION IS INCOMPLETE OR ILLEGIBLE, PLEASE TELEPHONE THE ABOVE SENDER, THANK YOU.

Our Business - A Better Brisbane



QUEENSLAND GOVERNMENT

Department of Environment

Hazardous Waste and Contaminated Sites Section
Department of Environment
PO Box 155
BRISBANE ALBERT STREET
QLD 4002
Ph: (07) 3225 1827 Fax: (07) 3227 8341

Application for Disposal Permit

Section 118ZZF Environmental Protection Act (1994)

Please note: Failure to lodge all required information can result in your application being rejected and returned to you for completion and resubmission.

Important information (please read before completing this form)

A decision on an application will be made within 14 days of receipt, with a further 10 days allowed for preparation of the permit.

Complete the following: (Attach a separate sheet if more space required)

1. Applicant details

(This is the contact person to whom the disposal permit will be sent and to whom all enquiries will be directed)

Contact name Lisa Grannum Telephone 34030418 Fax 3403 0438
Company name (if applicable) Brisbane City Council
Postal address Locked Bag 6996, Albion Q
Postcode 4010

2. Details of site(s) from which soil is to be removed

Has a site investigation report been submitted to DoE?

☒ Yes DoE file number 902038
☐ No

Real Property Description (Lot on Registered Plan) Lot 16 on Plan SP 135243

Street address of site(s) 159 Coronation Dr, Milton

Copy of current Certificate of Title

☐ Enclosed with this application
☒ Submitted previously to DoE within a site investigation report

Has the site been used for a notifiable activity as per Schedule 3 of the Environmental Protection Act 1994?

☒ Yes (please specify) Former service station
☐ No

Is the site presently being used for a notifiable activity?

☐ Yes (please specify) _____
☒ No

Is the site currently on the Environmental Management Register or Contaminated Land Register?

☒ Yes
☐ No (if no, a notification form must be submitted to DoE)

Has contaminated soil been removed from this site in the past?

☒ Yes (if yes, was an application for off-site disposal sought?) ☒ Yes ☐ No
☐ No



3. Approximate volume (in m³) of soil to be removed (allowing for excavation bulking)

20 m³ (20 tonnes)

Describe how the volume of soil to be removed was calculated _____

4. Dates between which soil will be moved to the disposal location (as per section 118ZZF(7), permits will only be valid between dates stipulated in the disposal permit)

27/6/01 - 11/7/01

5. Justification of request

Reason(s) why on-site treatment or management not proposed Lead contamination

Will validation sampling be undertaken to ensure that contaminated soil is removed? _____

No, already validated via sampling.

6. Description of contamination present in soil to be removed

Contaminants present Lead (Pb) 350 mg/kg

Please enclose with your application:

- ☐ Scaled diagram showing soil sampling locations and contamination source(s)
- ☐ Tabulation of soil analysis results
- ☐ TCLP results from relevant soil samples
- ☐ Laboratory reports and sample receipt advices for all soil analyses
- ☐ Explanation of location and depths of samples, how samples were collected, and how sample integrity was maintained.

See previous application

7. Written acceptance from the owner of site receiving soil

Is the soil being removed to a local government-administered landfill?

- ☒ Yes ☐ Written acceptance from the local government authority is enclosed
- ☐ No (Please complete section 8 of this application form).

Name and address of local government-administered landfill Nudgee Hardfill, Nudgee Rd, Nudgee

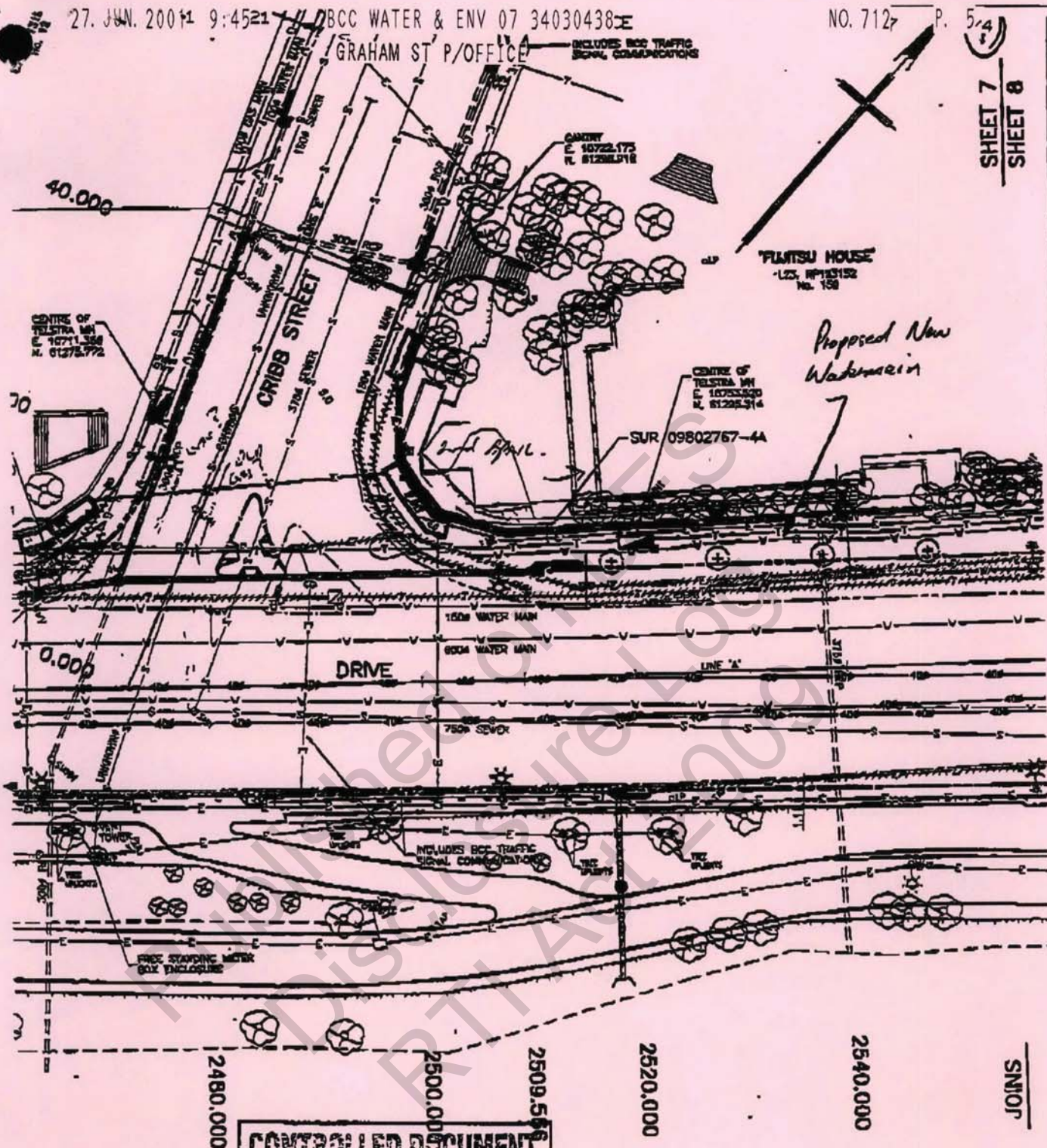
8. Description of site receiving soil (complete this section only if soil not going to a local government-administered landfill)

Real Property Description (Lot on Registered Plan) Lot _____ on Plan _____

Street address of site _____

Local government authority _____

- ☐ Copy of Certificate of Title provided
- ☐ Written acceptance from registered owner of site is enclosed with this application

SHEET 7
SHEET 8

CONTROLLED DOCUMENT

- 5 FEB 2001 RIVER

Graham St Project Office
Brisbane City Works

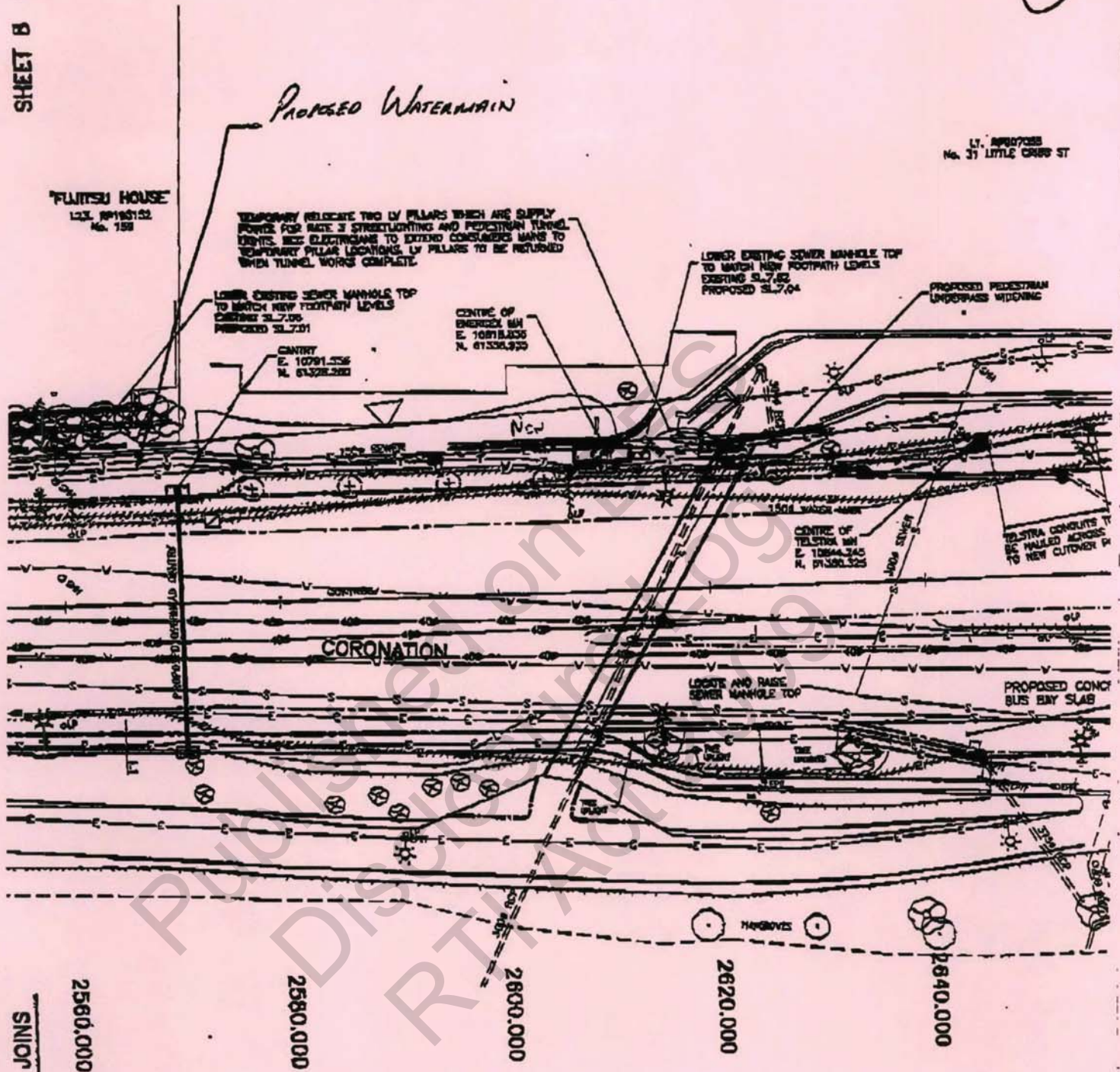
NOTES:

1. NOTWITHSTANDING THAT THE PRESENT AND/OR PROPOSED POSITIONS OF PUBLIC UTILITIES, FITTINGS, PIPES, POLES, MANHOLES ETC. MAY BE INDICATED ON THE DRAWINGS, NO RESPONSIBILITY WILL BE ACCEPTED BY THE PRINCIPAL FOR THE ACCURACY OF THE REPRESENTATION OR THE OMISSION THEREOF.
2. FOR SIZE, CONFIGURATION, LEVELS AND NUMBER OF CONDUITS/PIPES REFER RELEVANT SERVICE AUTHORITIES' DETAILED DRAWINGS.
3. MANHOLE CO-ORDINATES ARE TO CENTRE OF FIT RELATIVE TO CHAINAGE. FIT OFFSETS TO BE CONFIRMED ON SITE.

15 20 25 METRES
(REDUCED)

Project	Title	Design	Drawn	Checked	Authorised for Issue
ROADWORKS AND DRAINAGE CORONATION DRIVE TIDAL FLOW BUS LANES MILTON	EXISTING AND RELOCATED SERVICE PLANS CHASELY STREET TO BOOMERANG STREET SHEET 7 OF 9	DES Nov'00	MOP Nov'00	AE Nov'00	ORIGINAL SIGNED BY J. EDGER 16 Nov'00 BCC No. 724
Drawing no.		36		5	
9802767					

SHEET B



SERVICES LEGEND

S	EXIST. CURB/CHANCE	Y	EXIST. TRAIL FLOW CONDUIT	X	PROP. TRAFFIC SIGNALS CONDUIT
E	EXIST. 0/4 ELECTRICITY	E	EXIST. TRAIL FLOW LOOPS	0/4	PROP. TRAIL FLOW CONDUIT
T	EXIST. TELSTRA	E	RELOCATED 0/4 ELECTRICITY	Y	TRAIL 0/4 RELINQUISH AND FILL (TRAIL 0/4 TELSTRA CONDUIT)
G	EXIST. GAS	T	RELOCATED TELSTRA	*	PROP. STREET LIGHT
C	EXIST. WATER MAIN	E	RELOCATED GAS	+	PROP. STORMWATER MANHOLE
+	EXIST. STORMWATER	Y	RELOCATED WATER MAIN	+	PROP. STORMWATER CULVERT
*	EXIST. STREET LIGHT	///	ABANDONED SERVICE	+	PROP. TREE
+	EXIST. TRAIL FLOW CONDUIT	///	PROP. STORMWATER		

BRISBANE

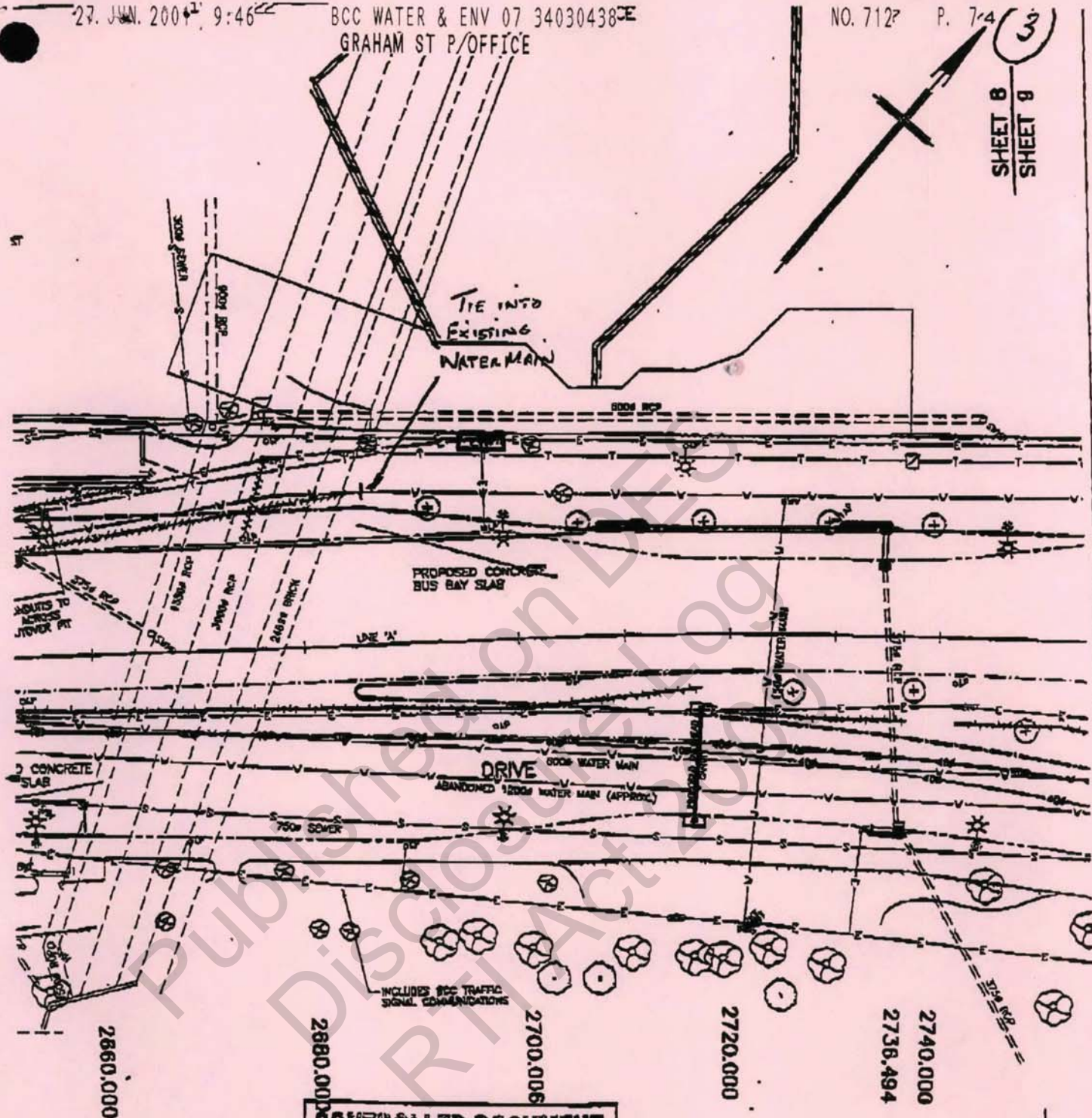
 5 0 5 10
 SCALE 1:250 (BEFORE)

City Design
 Brisbane City Council

 Lead: [Name]
 Designer: [Name]
 Checker: [Name]
 Approver: [Name]


Item	Description	Date	Drawn	Auth	Issue	Description	Date	Drawn	Auth	Design Information
1	ISSUED TO SERVICE AUTHORITIES	27/10/00								
2	NO ISSUE									
3	ISSUED TO SERVICE AUTHORITIES FOR FINAL APPROVAL & DESIGN	14/10/00								
4	NO ISSUE									
5	ENERGEX WORKS CHANGED, MH CO-CROSS ADDED, ISSUED FOR CONSTRUCTION	2/6/01	DES	OFF						
										Design Information Design: [Name] File: [Name] A.M.D.

GRAHAM ST P/OFFICE

SHEET 8
SHEET 9**CONTROLLED DOCUMENT**

- 5 FEB 2001

Graham St Project Office
Brisbane City Works**NOTES:**

1. NOTWITHSTANDING THAT THE PRESENT AND/OR PROPOSED POSITIONS OF PUBLIC UTILITIES, FITTINGS, PIPES, POLES, MANHOLES ETC. MAY BE INDICATED ON THE DRAWINGS NO RESPONSIBILITY WILL BE ACCEPTED BY THE PRINCIPAL FOR THE ACCURACY OF THE REPRESENTATION OR THE DIMENSION THEREOF.
2. FOR SIZE, CONFIGURATION, LEVELS AND NUMBER OF CONDUITS/PIPES REFER RELEVANT SERVICE AUTHORITIES DETAILED DRAWINGS.
3. MANHOLE CO-ORDINATES ARE TO CENTRE OF PIT RELATIVE TO CHANGELINE. PIT OFFSETS TO BE CONFIRMED ON SITE.

RIVER

JOINS

0 5 10 15 20 25 METRES
(BEFORE REDUCTION)

Project		Title		Design	Drawn	Checked	Authorised for Issue
ROADWORKS AND DRAINAGE		EXISTING AND RELOCATED		DBS	MAP	AE	ORIGINAL SIGNED BY
CORONATION DRIVE		SERVICE PLANS		Nov/00	Nov/00	Nov/00	J. EDSER 16 Nov/00
TIDAL FLOW BUS LANES		CHASLEY STREET TO		Reference no.		Drawing no.	
MILTON		BOOMERANG STREET		9802767		37	
SHEET 8 OF 9							

160 Ann Street . Brisbane Queensland . PO Box 155 . BRISBANE ALBERT STREET QLD 4002
Telephone (07) 3227 6422 . Facsimile (07) 3247 3278

Enquiries to: B Ramirez
Telephone: 3227 7715 fax 3247 3278
Your reference:
Our reference: 902038

Permit to Remove and Dispose of Contaminated Soil

Pursuant to Section 424 of the *Environment Protection Act* 1994 (EP Act) permission is given to the applicant

Max Kitson

Brisbane City Council

Locked Mail Bag 6996

ALBION QLD 4010

Telephone: 3403 0886

Fax: 3403 0691

to remove and dispose of soil contaminated with

Lead

from 159 Coronation Drive, Milton

on Lot 17 on SP135243 and described in the following correspondence:

Application for Disposal Permit dated 13 February 2001.

The permit holder is responsible for ensuring that the specific and standard conditions in Schedules 1 and 2 of this permit are complied with by all personnel involved in the excavation, removal and disposal.

Signed

sch 4 - signature

Mack Dreyer

Chief Scientific Advisor (Contaminated Land Unit)

14/2/01

cc: S Region attn Hugh Wright

cc: BCC Nudgee Hardfill attn Cameron Jackson fax 3403 2603

Notice to Applicant

The conditions on this permit have been decided after consideration of the standard criteria (EP Act) and for the purpose of preventing environmental harm. The applicant may apply for a review or appeal against the decision within 14 days of receipt of this notice (s521 and s531).

Schedule 1 of 2 – Specific Conditions

The volume or mass of the contaminated soil shall not exceed 79 cubic metres.

The soil is to be disposed in accordance with the disposal facility approval letter dated 13 February 2001 at Brisbane City Council's Nudgee Hardfill.

The soil must be disposed between 14/02/2001 and 14/05/2001.

Other Conditions:

Nil.

Published on DES
Disclosure Log
RTI Act 2009

Schedule 2 of 2 – Standard Conditions

1. Volume / mass of contaminated soil

This permit applies to the specified volume or mass only. Any increases to the specified quantity will require a new disposal permit.

2. Disposal time period

Disposal must occur within the dates specified or a new disposal permit must be sought.

3. Excavation and loading

The holder of this disposal permit must take all reasonable precautions necessary to prevent the spillage of contaminated soil during loading and prevent contaminated soil being transported from the site of origin on vehicle tyres and plant and equipment.

4. Transportation

(a) *Transporter to be advised of permit conditions*

Prior to the removal of contaminated soil, the permit holder must provide a copy of the permit and conditions to the transporter.

(b) *Load to be secured*

The contaminated soil must be covered in the transportation vehicle to ensure that the contaminated soil or offensive or noxious gases are not released during transport.

(c) *Cleaning of vehicles and plant equipment*

An effective system must be employed for cleaning of vehicles and plant and equipment which are used to transport or handle contaminated soil which prevents release of contaminants onto any roadway or to any waters or stormwater drainage system.

(d) *Spillage*

Any spillage of contaminants must be cleaned up as quickly as practicable. Spillages must not be cleaned up by hosing, sweeping or otherwise releasing such contaminants or material to any stormwater drainage system, roadside gutter or waters.

5. Receival and disposal

(a) *Licence conditions*

The acceptance and disposal of the contaminated soil must comply with the licence conditions and the specific requirements of the disposal facility.

(b) *Disposal receipts*

Copies of disposal acceptance receipts are to be submitted to the Administering Authority within 10 working days of the date of disposal. The holder of, or person acting under a disposal permit, must comply with the conditions of the permit (s425 of the *Environmental Protection Act 1994*).

Maximum penalty - 100 penalty units.

6. Interim storage

Contaminated soil which is temporarily stored at the site of origin or approved for storage at a separate property must be stockpiled and securely covered and/or managed to ensure that:

- (a) rainwater is drained away from the stockpiles;
- (b) contaminated soil is not transported from the stockpile by wind or rainwater;
- (c) offensive odours or noxious gases are not released; and
- (d) soil underlying the stockpiles is not affected by contamination.

A report is to be provided to the Administering Authority within 28 days of final disposal that verifies that the storage area is fully cleared of contamination.

7. Treatment of soil

(a) Licensed facility

When treatment is to be undertaken at a licensed general waste disposal facility or regulated waste treatment and disposal facility, acceptance receipts must be provided to the Administering Authority within 10 days of contaminated soil delivery. The contamination level in the soil must be reduced to a level agreed by the Administering Authority. When contaminated soil is stored at such facility pending treatment, storage is to be undertaken according to condition 6.

(b) Other treatment sites

(i) Soil remediation and validation report.

The permit holder must provide a report of the soil remediation including chemical test results that validate that the contamination has been lowered to levels agreed with the Administering Authority. The report must provide evidence that the land underlying the treatment activity is not affected by contamination.

(ii) Environmental harm.

Treatment activities must be carried out to ensure that environmental harm is not caused and that contaminants including treatment agents are not released from the site by wind, stormwater or as offensive or noxious gases. The requirements of condition 6 also apply.

(c) Final disposal

When soil contamination has been reduced to levels acceptable to the Administering Authority, the soil may be disposed of as general fill unless otherwise specified in Schedule 1. The location of the final disposal site of the soil is to be identified after treatment by written advice to the Administering Authority.

****End of Document****



Brisbane City

City Design

TO: Bal Ramirez
EPA

DATE: 13/2/01

503 St Pauls Terrace
Fortitude Valley Qld 4006

CC:

FAX: 3247 3278

Locked Mail Bag 6996
Albion Qld 4010

FROM: Max Kitson

PH: 3403 0886

Ph: 07 3403 0788
Fax: 07 3403 0633

RE: Disposal Permit
159 Coronation Drive
Milton

PAGES: 16

Mobile:
Email: gme@brisbane.qld.gov.au

REF:

Please find attached Letter of acceptance at BCC Nudgee Hardfill/Land Fill, and disposal permit application, and other material.

Should you require further information, do not hesitate to contact myself.

Thanks

sch 4 - signature



Max Kitson
Geotechnical & Environmental Engineering
City Design
#3403 0886



QUEENSLAND GOVERNMENT
Department of Environment

Hazardous Waste and Contaminated Sites Section
Department of Environment
PO Box 155
BRISBANE ALBERT STREET
QLD 4002

Ph: (07) 3225 1827 Fax: (07) 3247 3278

Attn
Max
2 pages

Application for Disposal Permit

Section 113ZZF Environmental Protection Act (1994)

Please note: Failure to lodge all required information can result in your application being rejected and returned to you for completion and resubmission.

Important information (please read before completing this form)

A decision on an application will be made within 14 days of receipt, with a further 10 days allowed for preparation of the permit.

Complete the following: (Attach a separate sheet if more space required)

1. Applicant details

(This is the contact person to whom the disposal permit will be sent, and to whom all enquiries will be directed)

Contact name Max KITSON Telephone 3403 0886 Fax 3403 0691
Company name (if applicable) BRISBANE CITY COUNCIL
Postal address Locked Mail Bag 6996
Albion, QLD Postcode 4010

2. Details of site(s) from which soil is to be removed

Has a site investigation report been submitted to DoE?

- ☐ Yes DoE file number _____
☒ No

Real Property Description (Lot on Registered Plan) Lot 17 on Plan SP135243
Street address of site(s) 159 Coronation Drive, Milton, QLD

Copy of current Certificate of Title

- ☒ Enclosed with this application
☐ Submitted previously to DoE within a site investigation report

Has the site been used for a notifiable activity as per Schedule 3 of the Environmental Protection Act 1994?

- ☒ Yes (please specify) Former Service Station - Removed > 10 years ago
☐ No

Is the site presently being used for a notifiable activity?

- ☐ Yes (please specify) _____
☒ No

Is the site currently on the Environmental Management Register or Contaminated Land Register?

- ☒ Yes
☒ No (if no, a notification form must be submitted to DoE)

Has contaminated soil been removed from this site in the past?

- ☒ Yes (if yes, was an application for off-site disposal sought?) ☐ Yes ☒ No
☐ No

CONTAMINATED
LAND SECTION

13 FEB 2001

902038

3979 u2
Pore Porel
L23 RP193152
ID 2998 27/06/98

Construction of
underground car park
> 10 years ago

3. Approximate volume (in m³) of soil to be removed (allowing for excavation bulking)

78.75 m³

Describe how the volume of soil to be removed was calculated

(Area + Area) ×
(70 m² + 35 m²) ×

depth (0.75 m) = 78.75 m³

4. Dates between which soil will be moved to the disposal location (as per section 118ZZF(7), permits will only be valid between dates stipulated in the disposal permit)

14/2/2001 - 15/2/2001

5. Justification of request

Reason(s) why on-site treatment or management not proposed

Lead contamination

Will validation sampling be undertaken to confirm that all contaminated soil has been removed?

No - validation samples have already been taken.

6. Description of contamination present in soil to be removed

Contaminants present

Lead(Pb) (350 mg/kg).

Please enclose with your application:

- ☒ Scaled diagram showing soil sampling locations and contamination source(s)
- ☒ Tabulation of soil analysis results
- ☒ TCLP results from relevant soil samples
- ☒ Laboratory reports and sample receipt advices for all soil analyses
- ☒ Explanation of location and depths of samples, how samples were collected, and how sample integrity was maintained.

7. Written acceptance from the owner of site receiving soil

Is the soil being removed to a local government-administered landfill?

- ☒ Yes ☒ Written acceptance from the local government authority is enclosed
- ☐ No (Please complete section 8 of this application form).

Name and address of local government-administered landfill Nudgee Land Fill, Nudgee
Land Fill, Nudgee Road, Nudgee

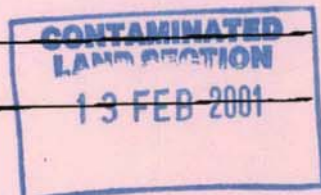
8. Description of site receiving soil (complete this section only if soil not going to a local government-administered landfill)

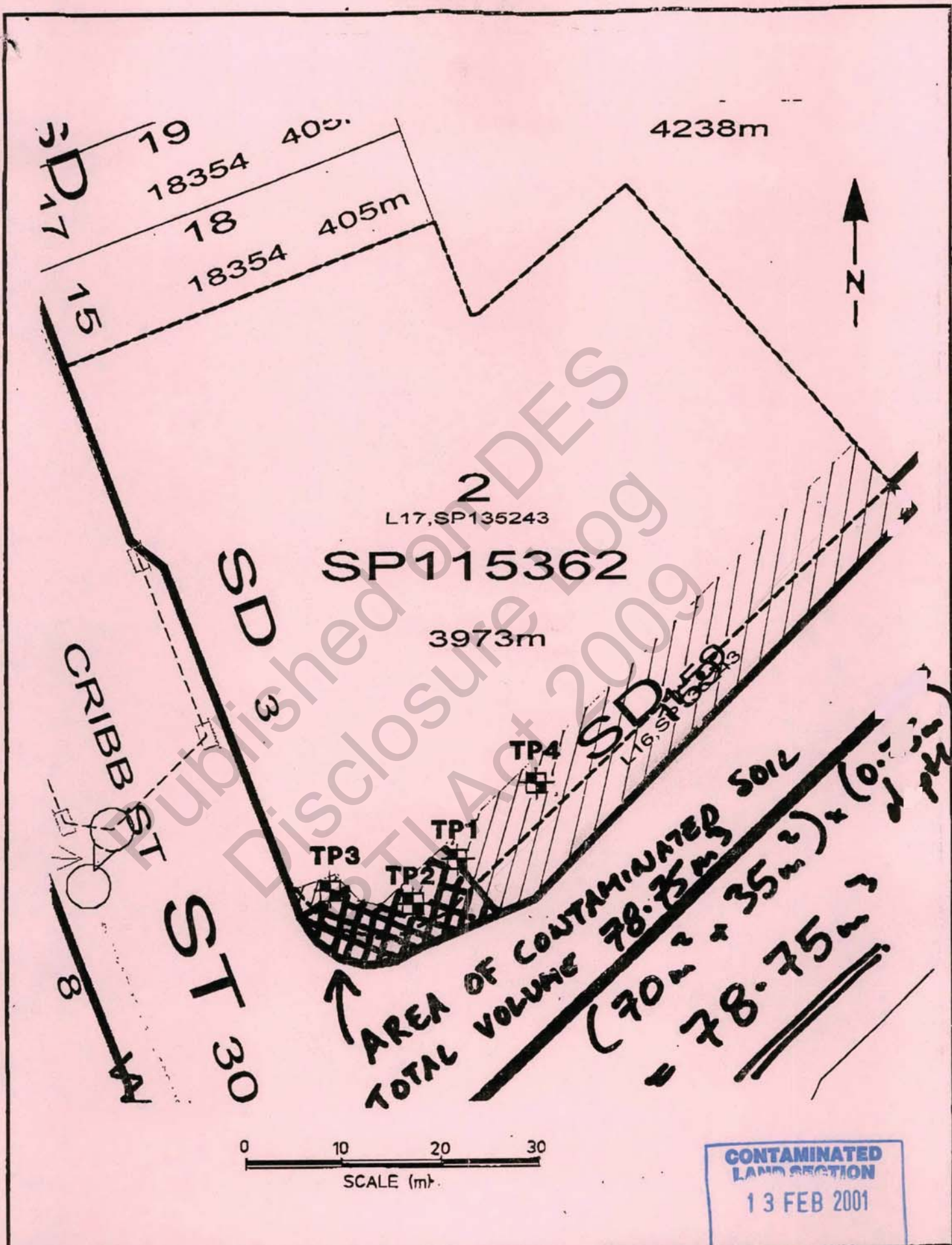
Real Property Description (Lot on Registered Plan) Lot _____ on Plan _____

Street address of site _____

Local government authority _____

- ☐ Copy of Certificate of Title provided
- ☐ Written acceptance from registered owner of site is enclosed with this application





Design	MK	Feb 2001
Drawn	PEB	Feb 2001
Checked		
Scale	1 : 500	

CITY DESIGN
TRANSPORT & STRUCTURES
SITE CONTAMINATION ASSESSMENT
159 CORONATION DRIVE E, MILTON
TEST PIT LOCATIONS



BRISBANE CITY COUNCIL City Design Geotechnical & Environmental Engineering	
Project No. CD/T0-G1/9802767	Fig. 1

18-xxx
FEB 13 '01 04:40PM
P.4/16

File A
FEB 13 '01 04:43PM GEOTECHNICAL SERVICES 0734030691
32

CURRENT TITLE SEARCH

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Request No: 104177140
Search Date: 13/02/2001 4:31 pm

Title Reference: 50340710
Date Created: 03/01/2001

Previous Title: 50258550

REGISTERED OWNER

Interest

Dealing No: 704496772 20/12/2000

CORO 1 PTY LTD A.C.N. 093 424 634
CORO 2 PTY LTD A.C.N. 093 424 643
CORO 3 PTY LTD A.C.N. 093 424 367
CORO 4 PTY LTD A.C.N. 093 424 376

1/4
1/4
1/4
1/4

AS TENANTS IN COMMON

ESTATE AND LAND

Estate in Fee Simple

LOT 17 SURVEY PLAN 135243
County of STANLEY Parish of ENOGGERA
Local Government: BRISBANE

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10941126 (POR 1N)
2. LEASE No 701503223 20/08/1996 at 12:02
to
FUJITSU AUSTRALIA LTD ACN 001 011 427
Original term commencing
01/11/1996
Terminating
31/10/2001
with options as therein stated
OVER PART OF THE 1ST, 2ND AND 3RD FLOORS OF THE BUILDING.
3. SUB LEASE No 702766705 03/07/1998 at 13:57
LEASE: 701503223
STAR SYSTEMS PTY LTD A.C.N. 010 488 874
OF PART OF THE 2ND FLOOR
4. EASEMENT No 703132274 25/01/1999 at 11:03
burdening the land to
LOT 1 ON SP115362 OVER
EASEMENT A ON SP115362
5. EASEMENT No 703132282 25/01/1999 at 11:04
benefiting the land over
EASEMENT B ON SP115362

CONTAMINATED
LAND SECTION
13 FEB 2001

CURRENT TITLE SEARCH

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Request No: 104177140

Search Date: 13/02/2001 4:31 pm

Title Reference: 50340710

Date Created: 03/01/2001

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

6. EASEMENT No 703132284 25/01/1999 at 11:05
benefiting the land over
EASEMENT C ON SP115362
7. EASEMENT No 703132288 25/01/1999 at 11:05
burdening the land to
LOT 1 ON SP115362 OVER
EASEMENT D ON SP115362
8. EASEMENT No 703132290 25/01/1999 at 11:05
benefiting the land over
EASEMENT E ON SP115362
9. BUILDING MANAGEMENT STATEMENT No 703132313 25/01/1999 at 11:08
benefiting and burdening the lot
10. MORTGAGE No 704301857 11/09/2000 at 09:47
SUNCORP-METWAY LIMITED A.C.N. 010 831 722

ADMINISTRATIVE ADVICES - NIL

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Copyright The State of Queensland (Department of Natural Resources) [2001]
Requested By: CITEC CONFIRM



TABLE 1 ANALYTICAL SUMMARY

				Metals										Organics									
Sample No.	No. of sub samples	Date Sampled	Units	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)	TPH (<C6-C9)	TPH(C10-C14)	TPH(C15-C28)	TPH(C29-C36)	MAHs (BTEX)	Benzene	Toluene	OCs	OPs	Total PAH	BAP	
TP1/0.5	1	08/02/01	mg/kg	12.0	<1.0	17.0	18.0	130.0	<0.50	9.2	67.0	<25	<50	<100	<100	nd	<0.5	<0.5	-	-	-	nd	
TP2/0.5	1	08/02/01	mg/kg	5.2	<1.0	11.0	21.0	350.0	<0.50	8.9	220.0	<25	<50	<100	<100	nd	<0.5	<0.5	-	-	-	-	
TP2/0.75	1	08/02/01	mg/kg	<5.0	<1.0	22.0	12.0	47.0	<0.50	8.1	43.0	-	-	-	-	-	-	-	-	-	-	-	
TP3/0.5	1	08/02/01	mg/kg	<5.0	<1.0	5.7	3.3	<5.0	<0.50	3.1	15.0	-	-	-	-	-	-	<0.5	<0.5	nd	nd	-	
TP4/0.5	1	08/02/01	mg/kg	9.9	<1.0	8.9	29.0	63.0	<0.50	19.0	66.0	<25	<50	<100	<100	nd	-	-	-	-	-	-	
TP4/0.75	1	08/02/01	mg/kg	<5.0	<1.0	25.0	18.0	48.0	0.53	17.0	66.0	-	-	-	<100	-	-	-	-	-	-	-	
Environmental Investigation Threshold				20	3	50	80	300	1	60	200	100	100	1000	1000	7	1	3	1	NE	NE	20	1
Health-based investigation level A				100	20	12%	1000	300	15	600	7000	50	80	5600	5600	NE	NE	NE	NE	NE	NE	80	1
Health-based investigation level D				400	80	48%	4000	1200	60	2400	28000	360	360	22400	22400	NE	NE	NE	NE	NE	NE	40	4
Health-based investigation level E				200	40	24%	2000	600	30	600	14000	180	180	11200	11200	NE	NE	NE	NE	NE	NE	2	2
Health-based investigation level F				500	100	50%	5000	1500	75	3000	35000	450	450	28000	28000	NE	NE	NE	NE	NE	NE	100	5
Minimum				mg/kg	0	5.7	3.3	47	0.53	3.1	15	0	0	0	0	0	0	0	0	0	0	0	0
Maximum				mg/kg	12	25	29	350	0.53	19	220	0	0	0	0	0	0	0	0	0	0	0	0
Average				mg/kg	#DIV/0!	14.83333	16.88333	127.6	0.53	10.88333	78.5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#REF!	#REF!	#DIV/0!	#DIV/0!	#DIV/0!	#REF!	#REF!
STD DEV				mg/kg	7.650795	8.65573	128.912	5.973078	74.78638	71.78838	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#REF!	#REF!	#DIV/0!	#DIV/0!	#DIV/0!	#REF!	#REF!

National Environmental Protection (Assessment of Site Contamination Measure) Guidelines on Investigation Levels for soil and groundwater: A = Standard residential with garden/accessible soil (home-grown produce contributing less than 10% of fruit and vegetable intake; no poultry); this category include children's day care centres, preschools and primary schools; B = Residential with minimum opportunities for soil access; includes high rise apartments and flats; C = Parks, recreational open spaces and playing fields, including secondary schools; D = Commercial/Industrial; includes premises such as shops and offices as well as factories and industrial sites; (if however, a commercial site is also used for residential purposes or regular soil access by children is possible, then the appropriate 'residential' setting should be used.) It is assumed that thirty years is the duration of exposure.

E - Parks, recreational open spaces and playing fields, including secondary schools.
F - Commercial/Industrial; includes premises such as shops and offices as well as factories and industrial sites. (if however, a commercial site is also used for residential purposes or regular soil access by children is possible, then the appropriate 'residential' setting should be used.) It is assumed that thirty years is the duration of exposure.

CONTAMINATED
LAND SECTION
13 FEB 2001

M
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To: City Design	Date: 13/02/2001
Attn: Max Kitson	
CC: Leanne McShane - City Waste Services	
From: Cameron Jackson	
Re: Disposal of Contaminated Soil - 159 Coronation Drive, Milton (Lot 2 SP115362)	

**Operations Branch
Industrial Waste
Management Services**

Oxley Ck. WWTP
240 Donaldson Road
Rocklea Qld 4106
Tel.: 07-3403 2609
Fax: 07-3403 2603
Mobile: 0419 707 055
E-Mail: bso34bw@brisbane.qld.gov.au

In response to your request on 13 February 2001 regarding the disposal of 80 cubic metres of heavy metals impacted soil from the abovementioned site, I am able to confirm that based on the chemical analysis results supplied by yourself, the soil will be accepted for disposal at Brisbane City Councils (BCC's) Nudgee Hardfill, Nudgee Road, Nudgee, as a Hardfill Class 3 waste (\$24.20 per tonne FY01 [including GST]) subject to the following conditions:

- loads of dry soil must be wetted with water and all loads of soil must be covered prior to transportation for suppression of dusts;
- waste approved for disposal to landfill must be accompanied by a completed BCC solid waste manifest docket for each waste Class during transportation and disposal operations; and
- BCC reserves the right to immediately suspend and/or terminate the disposal of any material to its landfills if, in the opinion of BCC, such material creates either a public nuisance or an environmental nuisance or poses occupational health and safety concerns for landfill staff.

For disposal arrangements (ie. waste manifest) and confirmation of charges, contact Leanne McShane from BCC City Waste Services on (07) 3403 7784. Please note that City Waste Services require 24 hours notice to organise disposals to Hardfill sites.

Yours faithfully

sch 4 - signature

Cameron Jackson
Supervising Chemist Hazardous Waste

Reference Number: E11081

**CONTAMINATED
LAND SECTION**
13 FEB 2001

OUR BUSINESS - A BETTER BRISBANE

\\SOCKNW1\GROUPS\TRADE\WASTE\B30346\WMB\CONTSOIL\BCC\CITYDESIGN\E11081_CLASS13_METALS.DOC

AWARD
 Car Wynnman and Creek Roads, CANNON HILL QLD 4170
 Ph: 3214 2161 Fax: 3214 2166

12/2/2001

Client COCs

10-XXX
JAN 16 10, 51 AM

RESULTS OF ANALYSIS**AGAL**

ATTENTION:	MAX KITSON
COMPANY:	CITY DESIGN - GEOTECHNICAL
DATE:	12/2/01

CLIENT JOB NUMBER:	FO31PML 159 CORONATION DR
AGAL JOB NUMBER:	GEOT03/010208

PAGES: 7 (including cover).

Please find attached report of above analysis. Hardcopy of results will follow by mail.

If this fax is unclear or you have any queries regarding the results, please do not hesitate to call Jenny or Andrew on (07) 3214 2161.

COMMENTS:

K:\Brisbane\Controlled Docs\RESULTS OF ANALYSIS.doc

Version 2 8/8/00

**CONTAMINATED
LAND SECTION**
13 FEB 2001**AUSTRALIAN GOVERNMENT ANALYTICAL LABORATORIES**

11nr Wynnum & Creek Roads, Cannon Hill QLD 4170 PO Box 3312 Tingalpa DC QLD 4173

Tel: +61 7 3214 2161 Fax: +61 7 3214 2166 www.agal.gov.au

FEB 13 '01 04:45PM GEOTECHNICAL SERVICES 0734030691

38

FEB 13 '01 04:42PM 18-xxx

AGAL

REPORT OF ANALYSIS

Page: 1 of 2

Report No. RN205738

Client	GEOTECHNICAL & ENV ENGINEERING	Job No.	GEOT03/010208
	503 ST PAUL'S TERRACE	Quote No.	QT-00699
	FORTITUDE VALLEY QLD 4006	Order No.	F03181ML
Attention	Max Kitson	Date Sampled	8-FEB-2001
Project Name		Date Received	8-FEB-2001
Your Client Services Manager	Andrew Bradbury	Sampled By	CLIENT
		Phone	07 3214 2161

Lab Reg No.	Sample Ref	Sample Description
Q01/000815	TP1/0.5	Soil Coronation Drive
Q01/000816	TP2/0.5	Soil Coronation Drive
Q01/000819	TP4/0.5	Soil Coronation Drive

Lab Reg No.	Sample Reference	Units	Q01/000815 TP1/0.5	Q01/000816 TP2/0.5	Q01/000819 TP4/0.5	Method
Trace Elements						
Arsenic	mg/kg	17	5.2	9.9		VL239
Cadmium	mg/kg	<1.0	<1.0	<1.0		VL239
Chromium	mg/kg	17	11	8.9		VL239
Copper	mg/kg	18	21	29		VL239
Lead	mg/kg	130	350	63		VL239
Mercury	mg/kg	<0.50	<0.50	<0.50		VL239
Nickel	mg/kg	9.2	8.9	19		VL239
Zinc	mg/kg	67	220	66		VL239

Signed:

sch 4 - signature

Roger Cromie, Trace Elements - Vic

Date: 12-FEB-2001

Lab Reg No.	Sample Reference	Units	Q01/000815 TP1/0.5	Q01/000816 TP2/0.5	Q01/000819 TP4/0.5	Method
Miscellaneous						
Total Solids	%	88.1	89.5	92.7		QLM1_60
BTEX						
Benzene	mg/kg	<0.5	<0.5	<0.5		QLM2_02
Toluene	mg/kg	<0.5	<0.5	<0.5		QLM2_02
Ethyl Benzene	mg/kg	<0.5	<0.5	<0.5		QLM2_02
Xylene	mg/kg	<1.0	<1.0	<1.0		QLM2_02
Total Petroleum Hydrocarbons						
TPH C6-C9	mg/kg	<25	<25	<25		QLM2_04
TPH C10-C14	mg/kg	<50	<50	<50		QLM2_04
TPH C15-C28	mg/kg	<100	<100	<100		QLM2_04
TPH C29-C36	mg/kg	<100	<100	<100		QLM2_04
Poly Aromatic Hydrocarbons						
Naphthalene	mg/kg	<0.5	Not Tested	Not Tested		QLM2_06

AUSTRALIAN GOVERNMENT ANALYTICAL LABORATORIES

Cnr Wynnham & Creek Roads, Cannon Hill QLD 4170 PO Box 3312 Tingalpa DC QLD 4173

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CONTAMINATED
LAND SECTION
13 FEB 2001

18-xxx
FEB 13 '01 04:42PM
P.11/16

1699300691 0734030691 39
FEB 13 '01 04:46PM GEOTECHNICAL SERVICES

AGAIL

Page: 2 of 2
Report No. RN205738

FEB 13 '01 04:46PM GEOTECHNICAL SERVICES 0734030691

AGAL

REPORT OF ANALYSIS

Page: 1 of 2

Report No. RN205739

Client	: GEOTECHNICAL & ENV ENGINEERING 503 ST PAUL'S TERRACE FORTITUDE VALLEY QLD 4006	Job No.	: GEOT03/010208
		Quote No.	: QT-00699
		Order No.	: F03181ML
		Date Sampled	: 8-FEB-2001
		Date Received	: 8-FEB-2001
		Sampled By	: CLIENT
Attention	: Max Kitson	Phone	: 07 3214 2161
Project Name	:		
Your Client Services Manager	: Andrew Bradbury		

Lab Reg No.	Sample Ref	Sample Description
Q01/000817	TP2/0.75	Soil Corotation Drive
Q01/000820	TP4/0.75	Soil Corotation Drive

Lab Reg No.		Q01/000817	Q01/000820		
Sample Reference	Units	TP2/0.75	TP4/0.75		Method
Trace Elements					
Arsenic	mg/kg	<6.0	<6.0		VL239
Cadmium	mg/kg	<1.0	<1.0		VL239
Chromium	mg/kg	22	25		VL239
Copper	mg/kg	12	18		VL239
Lead	mg/kg	47	48		VL239
Mercury	mg/kg	<0.50	0.53		VL239
Nickel	mg/kg	8.1	17		VL239
Zinc	mg/kg	43	66		VL239

Signed:

sch 4 - signature

Roger Cromie, Trace Elements - Vic

Date: 12-FEB-2001

Lab Reg No.		Q01/000817	Q01/000820		
Sample Reference	Units	TP2/0.75	TP4/0.75		Method
Miscellaneous					
Total Solids	%	89.8	84.7		QLM1_60

Signed:

sch 4 - signature

Andrew Bradbury, Environmental - Qld

Date: 12-FEB-2001

AUSTRALIAN GOVERNMENT ANALYTICAL LABORATORIES

Chr Wynnum & Cree Roads, Cannon Hill QLD 4170 PO Box 3312 Tingalpa DC QLD 4173

Tel: +61 7 3214 2161 Fax: +61 7 3214 2166 www.agal.gov.au

CONTAMINATED
LAND SECTION
13 FEB 200118-xxx
FEB 13 '01 04:43PM
P.13/161699
FEB 13 '01 04:46PM GEOTECHNICAL SERVICES 0734030691

AGAL

REPORT OF ANALYSIS

Page: 2 of 2
Report No. RN205739

All results are expressed on a dry weight basis.



This Laboratory is accredited by the National Association of Testing Authorities, Australia.
[Accreditation No 11891/B9].
The tests reported herein have been performed in accordance with its terms of accreditation.

Sample/s analysed as received.

This Report supersedes reports: RN205493 RN205676

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RTI Act 2009

**CONTAMINATED
LAND SECTION**

13 FEB 2001

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18-xxx
FEB 13 '01 04:43PM
P.14/16

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FEB 13 '01 04:47PM GEOTECHNICAL SERVICES 0734030691

AGAL

REPORT OF ANALYSIS

Page: 1 of 2

Report No. RN205740

Client	: GEOTECHNICAL & ENV ENGINEERING 503 ST PAUL'S TERRACE FORTITUDE VALLEY QLD 4006	Job No.	: GEOT03/010208
		Quote No.	: QT-00699
		Order No.	: F03181ML
		Date Sampled	: 8-FEB-2001
		Date Received	: 8-FEB-2001
		Sampled By	: CLIENT
Attention	: Max Kitson	Phone	: 07 3214 2161
Project Name	:		
Your Client Services Manager	: Andrew Bradbury		

Lab Reg No.	Sample Ref	Sample Description
Q01/000818	TP3/0.5	Soil Coronation Drive

Lab Reg No.	Sample Reference	Units	Q01/000818	TP3/0.5	Method
Trace Elements					
Arsenic	mg/kg	<6.0			VL239
Cadmium	mg/kg	<1.0			VL239
Chromium	mg/kg	6.7			VL239
Copper	mg/kg	3.3			VL239
Lead	mg/kg	<5.0			VL239
Mercury	mg/kg	<0.50			VL239
Nickel	mg/kg	3.1			VL239
Zinc	mg/kg	16			VL239

Signed:

sch 4 - signature

Roger Cromie, Trace Elements - Vic

Date: 12-FEB-2001

Lab Reg No.	Sample Reference	Units	Q01/000818	TP3/0.5	Method
Miscellaneous					
Total Solids	%	97.0			QLM1_80
Organochlorine (OC) Pesticides					
a-BHC	mg/kg	<0.2			QLM2_10
Hexachlorobenzene	mg/kg	<0.2			QLM2_10
b-BHC	mg/kg	<0.2			QLM2_10
g-BHC(Linlanel)	mg/kg	<0.2			QLM2_10
d-BHC	mg/kg	<0.2			QLM2_10
Heptachlor	mg/kg	<0.2			QLM2_10
Aldrin	mg/kg	<0.2			QLM2_10
Heptachlor epoxide	mg/kg	<0.2			QLM2_10
cis-Chlordane	mg/kg	<0.2			QLM2_10
trans-Chlordane	mg/kg	<0.2			QLM2_10
Endosulfan I	mg/kg	<0.5			QLM2_10
p,p'-DDE	mg/kg	<0.2			QLM2_10

**CONTAMINATED
LAND SECTION**
13 FEB 2001

AUSTRALIAN GOVERNMENT ANALYTICAL LABORATORIES

120r Wynnum & Creek Roads, Cannon Hill QLD 4170 PO Box 3312 Tingalpa DC QLD 4173

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FEB 13 '01 04:44PM

FEB 13 '01 04:47PM GEOTECHNICAL SERVICES 0734030691

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REPORT OF ANALYSIS

Page: 2 of 2
Report No. RN205740

Lab Reg No.	Units	Q01/000818	Method
Sample Reference		TP3/0.5	
Organochlorine (OC) Pesticides			
Dieldrin	mg/kg	<0.2	QLM2_10
Endrin	mg/kg	<0.2	QLM2_10
Endosulfan II	mg/kg	<0.5	QLM2_10
p,p'-DDD	mg/kg	<0.2	QLM2_10
Endosulfan Sulphate	mg/kg	<0.5	QLM2_10
p,p'-DDT	mg/kg	<0.2	QLM2_10
Methoxychlor	mg/kg	<0.2	QLM2_10
Organophosphate (OP) Pesticides			
Demeton-S-Methyl	mg/kg	<0.5	QLM2_10
Diazinon	mg/kg	<0.5	QLM2_10
Dimethoate	mg/kg	<0.5	QLM2_10
Pirimiphos-Ethyl	mg/kg	<0.5	QLM2_10
Chlorpyrifos	mg/kg	<0.5	QLM2_10
Parathion	mg/kg	<0.5	QLM2_10
Malathion	mg/kg	<0.5	QLM2_10
Fenthion	mg/kg	<0.5	QLM2_10
Ethion	mg/kg	<0.5	QLM2_10
Azinphos-Methyl	mg/kg	<0.5	QLM2_10
Surrogate Recoveries			
Pesticides Surrogate 1 Recovery%		100	QLM2_10
Pesticides Surrogate 2 Recovery%		93	QLM2_10
Dates			
Date extracted		8-FEB-2001	
Date analysed		9-FEB-2001	

Signed:

sch 4 - signature

Andrew Bradbury, Environmental - Qld

Date:

12-FEB-2001

All results are expressed on a dry weight basis.



This Laboratory is accredited by the National Association of Testing Authorities, Australia.
Accreditation No 11891/B91.
The tests reported herein have been performed in accordance with its terms of accreditation.

Sample/s analysed as received.

This Report supersedes reports: RN205493 RN205675

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**CONTAMINATED
LAND SECTION**
13 FEB 2001

REPRINT - 23/09/1999

21 September 1999

Site ID: 25585
File Number: 902038
Enquiries to: Contaminated Land Unit
Telephone: (07) 3227 6870

STAR SYSTEMS INVESTMENTS PTY LTD
5 CRIBB STREET
MILTON
QLD 4064

NOTICE OF DECISION NOT TO RECORD LAND ON THE ENVIRONMENTAL
MANAGEMENT REGISTER.

In accordance with section 118H of the *Environmental Protection Act 1994*,
following investigation, the parcel of land described below will not be recorded on the
Environmental Management Register as it has been determined that the land is not, or
has not been, used as a notifiable activity, or it is not contaminated land.

Lot: 1 Plan: SP115362
BRISBANE CITY COUNCIL

157 CORONATION DRIVE
MILTON 4064

SERVICE STATIONS

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

Kim

Could you please leave Lot 2 on SP115362 on the EMR with no status change
Could you please ~~remove~~ Lot 1 on SP115362 from the EMR.

delete
Date final submission: 27/8/99.

Key Cont: TPH & BTEX
Groundwater: TPH & BTEX

Studies:

Phase I Environmental Due Diligence Assessment 159 Coronation Drive, Milton,
prepared by Dames & Moore Pty Ltd in August 1996 (Doc No SM26101008/BBN).

Stage II Contaminated Land Assessment 159 Coronation Drive, Milton, prepared by
Dames & Moore Pty Ltd in October 1996 (Ref: 33287-005-074)

Stage II Site Investigation 159 Coronation Drive, Milton, prepared by Dames &
Moore Pty Ltd in December 1997 (Ref: 33287-005-074)

Additional information supplied in correspondence from Dames & Moore Pty Ltd
dated 6&11 March 1998 and 20 & 27 August 1999.

17/09/99
sch 4 - signature

Kim

*Owner may have changed, pl check π
Council Rates*

17/09/99
sch 4 - signature

Final Summary

A Shell service station formerly occupied the Coronation Drive frontage portion of lot L23 RP193152 (parent parcel). No plans are available from Shell. The portion fronting Cribb Street contained a Better Brakes service centre and no notifiable activities have been conducted in that area.

The site now contains 2 commercial buildings and has been subdivided into 2 volumetric parcels lots 1&2 on SP115362 (fire escapes, building overhangs each block etc).

The land has a commercial / retail zoning.

Geology is alluvium and phyllites overlain by fill.

Groundwater is at approx 1m and is impacted with hydrocarbons lot 2 SP115362. Soil is also impacted with hydrocarbons on lot 2 SP115362.

Site has an underground carpark ~1m below street level - material obviously removed at the time of carpark and building construction.

Dames & Moore assessed the site for the property owner of the Cribb Street frontage property. This included sampling on the portion of the block fronting Coronation Street.

Recommend

Lot 2 on SP115362 to remain on the EMR without a change in status.

Lot 1 on SP115362 is suitable for any use.

sch 4 - signature

21/9/99 - No plans available from Shell concerning locality previous service station. Sampling conducted on lot 1 indicating all clean results. Site history indicates 'Better Brakes' warehouse on area of Lot 1 & s/s limited to Ld. Contam (TPH) ID on lot 2. Therefore support recommendation as above

sch 4 - signature

ie delete

Summary of information for

John 10045

NOTES

File No: 902038

Name: Stage II Site Investigation, 159 Coronation Drive & 5 Cribb Street
Milton

Consultant: Dames & Moore

One property to be subdivided (strata titles).

Real property address - Lot 23 RP193152

Area 3,973m² (covers both sites)

Zoned special development or Commercial and retail

Geology - fill overlain by alluvium and phyllites

Depth to groundwater 2.0mbgl. GW encountered at 1.1m in DMMB2 in basement of Coronation Drive. - Unlikely to be used as a supply

Previous Investigations - Stage 1 1996 - walkover survey and 4 bores. No contamination identified, however, site history determined a Shell service station was located in 159 coronation drive and a warehouse 'better brakes' in Cribb street.

Stage II investigation in 1996 investigated the former service station - 5 bores 3 of which were completed as monitoring wells, handaugering of six bores in the carpark. Elevated TPH was recorded in the soil and GW. Horizontal extent unknown

Further stage II investigation (ie this one)

13 bores to a nominal depth of 1.5mc

2 GW wells to 5.0m

Soils-

Metal results results all below except Cu in BH24 S1 and Hg in BH22 S1

TPH below in all samples except DMMB2-S3 (C10-C14)

GW -

Hydrocarbon odour detected near BH1 but no sample could be obtained.

Results

Metals

BH17 S1 - 33mg/kg As, BH24 S1 25mg/kg As, Cu 89mg/kg, BH22 S1 Hg 1.4mg/kg, BH22 S2 Cd 4mg/kg, BH22 S3 4mg/kg,

Organics

DMMB2-S3 162 C10-C14

Additional notes to file

09-03-98

- Proposed subdivision plans submitted 06/03/98. Now awaiting approval of same.
- Lot 1 appears to have never been contaminated therefore recommend its removal from the CSR.

16/09/99

Plans now endorsed by DNR with only very minor variation from the proposed subdivision, recommend removal of lot 1 SP115362 from the EMR and Lot 2 to remain listed without an Site Management Plan (SMP).

sch 4 - signature

**DAMES & MOORE** PTY LTD

A DAMES & MOORE COMPANY

Fax Sheet**CONTAMINATED
LAND SECTION****27 AUG 1999**

135 Wickham Terrace, Brisbane
Queensland, Australia
PO Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
dmbbn@ozemail.com.au E-mail

To	Company	Fax Number
Kim Barry	Environmental Protection Agency	(07) 3227 7677
Cc		
Kent Robbins	AMP Asset Management	(02) 9257 7929
From	s78(B)(2)	Job Number 33287-005-074
Date	27 August 1999	Reference 19-98-2458
Subject	5 CRIBB STREET & 159 CORONATION DRIVE - MILTON SITE CONTAMINATION REPORT QEPA FILE NO. 902038	

No. of Pages 1 including this cover

Kim,

Further to submission of our Stage II Site Investigation Report (12 December 1997) and recent submission of the Registration Confirmation Statements in relation to subdivision of the site, we understand that due to the protracted intervening period you require a statement with respect to site activities during this period.

We confirm that both properties are occupied by office buildings with concrete lined basements – and as such there have been no site activities during this period that would have resulted in either soil or groundwater contamination at the site.

We trust that this is adequate for your requirements. Should you have any queries or require any further information please do not hesitate to contact me in our Brisbane office

Regards,

sch 4 - signature

s78(B)(2)

This facsimile transmission is intended for the persons named above. If you are not one of those persons we do not waive any privilege attaching to this facsimile transmission, and any disclosure or use of this transmission by you is prohibited. If you receive this transmission in error please notify the sender immediately and return the original transmission by mail.





DAMES & MOORE PTY LTD

A DAMES & MOORE COMPANY

**CONTAMINATED
LAND SECTION**

26 AUG 1999

Level 22, 127 Creek Street,
Brisbane, Queensland 4000 Australia
P.O. Box 251, Spring Hill, Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

20 August 1999

Ref: 33287-005-074
BBNDOEGEPL04.doc

Contaminated Sites Section
Environmental Protection Agency
Level 11, 160 Ann Street
BRISBANE 4000

Attention: Ms. Kim Barry

Dear Kim,

**SUBDIVISION REGISTRATION
5 CRIBB STREET & 159 CORONATION DRIVE, MILTON**

Further to our previous correspondence, please find herewith a copy of the Registration Confirmation Statements and accompanying documents lodged for registration in relation to the subdivision of the above site.

Should you have any queries or require more information please do not hesitate to contact the undersigned in our Brisbane office.

Yours faithfully
DAMES & MOORE

sch 4 - signature

s78(B)(2)

Principal

L1-2 SP 115362

was L23 RP 193152

90 2038

HUNT & HUNT LAWYERS



LAND TITLE ACT

REGISTRATION CONFIRMATION STATEMENT

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Title Reference : 50258549

This is the current status of the title as at 11:34 on 09/03/1999

REGISTERED OWNER

Dealing No: 703132254 25/01/1999

THE QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD
NOW STAR SYSTEMS5 CRIBS
ST

ESTATE AND LAND

Estate in Fee Simple

LOT 1 SURVEY PLAN 115362
County of STANLEY

Parish of ENOGGERA

SOLD

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by Deed of Grant No. 10941126 (FOR LN)
2. LEASE No 701474416 02/08/1996 at 14:37 to J.J.B. CONSTRUCTIONS PTY. LTD. ACN 005 420 664 Original term commencing 11/04/1996 Terminating 10/04/1999 with options as therein stated PART OF THE GROUND FLOOR (LEASE GB) OF A BUILDING
3. LEASE No 702056496 26/06/1997 at 14:50 BPT SOUTH PACIFIC HOLDINGS PTY LIMITED A.C.N. 050 105 443 OVER PART OF THE THIRD FLOOR OF THE BUILDING LEASE NO.700267755 IS SURRENDERED BY OPERATION OF LAW.
4. EASEMENT No 703132274 25/01/1999 at 11:03 benefiting the land over EASEMENT A ON SP115362
5. EASEMENT No 703132282 25/01/1999 at 11:04 burdening the land to LOT 2 ON SP115362 OVER EASEMENT B ON SP115362
6. EASEMENT No 703132284 25/01/1999 at 11:05 burdening the land to LOT 2 ON SP115362 OVER EASEMENT C ON SP115362

HUNT & HUNT LAWYERS



LAND TITLE ACT

REGISTRATION CONFIRMATION STATEMENT

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Title Reference : 50258549

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

7. EASEMENT No 703132288 25/01/1999 at 11:05
benefiting the land over
EASEMENT D ON SP115362
8. EASEMENT No 703132290 25/01/1999 at 11:05
burdening the land to
LOT 2 ON SP115362 OVER
EASEMENT E ON SP115362

ADMINISTRATIVE ADVICES - NIL**UNREGISTERED DEALINGS**

Dealing Type
703132313 BLD MAN STM

Lodgement Date Status
25/01/1999 11:08 UNREGISTERED

CERTIFICATE OF TITLE ISSUED - No**DEALINGS REGISTERED**

703132274 EASEMENT
703132288 EASEMENT

703132282 EASEMENT
703132290 EASEMENT

703132284 EASEMENT

Caution - Charges do not necessarily appear in order of priority

** End of Confirmation Statement **

G. Mitchell
Registrar Of Titles

Lodgement No: 839790

HUNT & HUNT
Office: BRISBANE
Box: 131

HUNT & HUNT LAWYERS



LAND TITLE ACT

REGISTRATION CONFIRMATION STATEMENT

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Title Reference : 50258550

This is the current status of the title as at 11:35 on 09/03/1999

REGISTERED OWNER

Dealing No: 703132254 25/01/1999

THE QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD

ESTATE AND LAND

Estate in Fee Simple

LOT 2 SURVEY PLAN 115362
County of STANLEY

Parish of ENOGGERA

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by Deed of Grant No. 10941126 (POR 1N)
2. LEASE No 701503223 20/08/1996 at 12:02 to FUJITSU AUSTRALIA LTD ACN 001 011 427 Original term commencing 01/11/1996 Terminating 31/10/2001 with options as therein stated OVER PART OF THE 1ST, 2ND AND 3RD FLOORS OF THE BUILDING.
3. SUB LEASE No 702766705 03/07/1998 at 13:57 LEASE: 701503223 STAR SYSTEMS PTY LTD A.C.N. 010 488 874 OF PART OF THE 2ND FLOOR
4. LEASE No 702032234 13/06/1997 at 14:09 COVEY LEADERSHIP CENTER PTY LTD A.C.N. 077 093 960 OVER PART OF THE GROUND FLOOR.
5. LEASE No 702367324 01/12/1997 at 13:50 FRANKLIN COVEY PTY LTD A.C.N. 077 093 960 OF PART OF THE GROUND FLOOR OF A BUILDING
6. EASEMENT No 703132274 25/01/1999 at 11:03 burdening the land to LOT 1 ON SP115362 OVER EASEMENT A ON SP115362

159
CORONATION
DRIVE
QLCSB
Owned

HUNT & HUNT



LAND TITLE ACT

REGISTRATION CONFIRMATION STATEMENT

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Title Reference : 50258550

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

7. EASEMENT No 703132282 25/01/1999 at 11:04
benefiting the land over
EASEMENT B ON SP115362
8. EASEMENT No 703132284 25/01/1999 at 11:05
benefiting the land over
EASEMENT C ON SP115362
9. EASEMENT No 703132288 25/01/1999 at 11:05
burdening the land to
LOT 1 ON SP115362 OVER
EASEMENT D ON SP115362
10. EASEMENT No 703132290 25/01/1999 at 11:05
benefiting the land over
EASEMENT E ON SP115362

ADMINISTRATIVE ADVICES - NIL

UNREGISTERED DEALINGS

Dealing	Type
703132313	BLD MAN STM

Lodgement Date	Status
25/01/1999 11:00	UNREGISTERED

CERTIFICATE OF TITLE ISSUED - No**DEALINGS REGISTERED**

703132274 EASEMENT
703132288 EASEMENT

703132282 EASEMENT
703132290 EASEMENT

703132284 EASEMENT

Caution - Charges do not necessarily appear in order of priority

** End of Confirmation Statement **

G. Mitchell
Registrar of Titles

Lodgement No: 839790

HUNT & HUNT
Office: BRISBANE
Box: 131

COPY SURVEY PLAN

DIAGRAM A
SCALE 1:1000

Sheet 1 of 4

DATUM FOR LEVELS

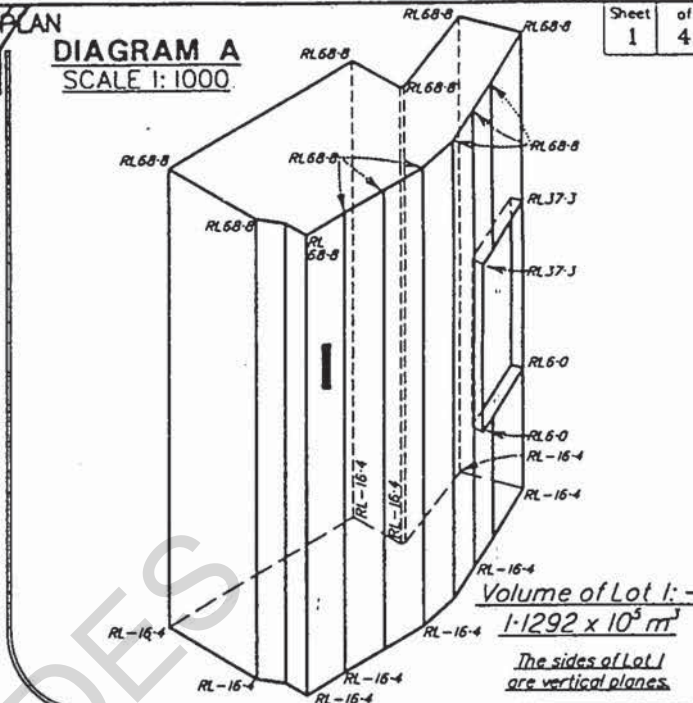
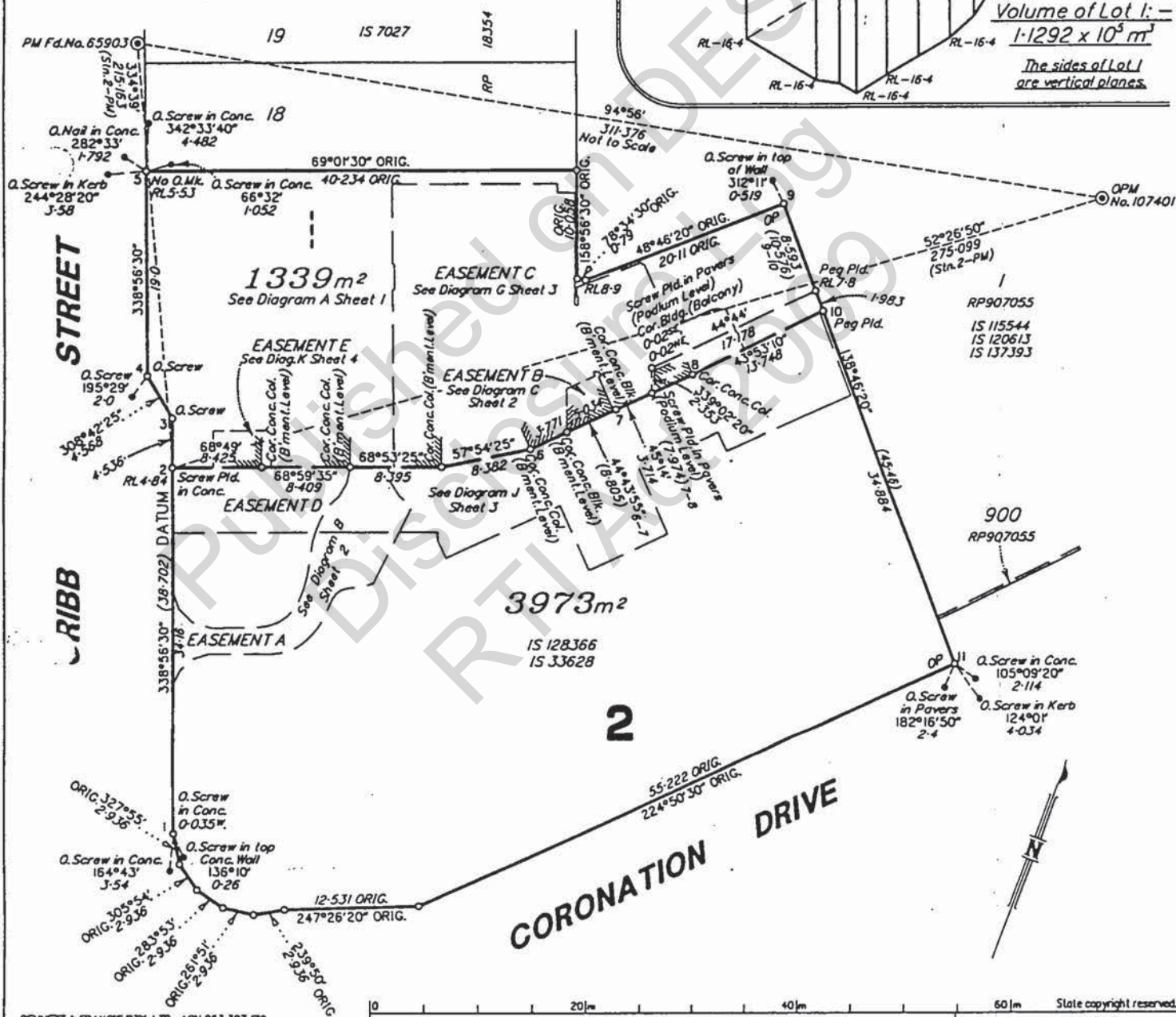
PM No. 65903, located on the southwest corner of the Railway Bridge at the corner of Cribb Street and Milton Road, R.L. 10.394m AHD

Lot 2 is a Standard Format Lot.

General Level of Basement is R.L. 7.6

General Level of Padium is R.L. 7.6

Original information compiled from RP193152 in the Department of Natural Resources.



BENNETT & FRANCIS PTY. LTD. ACN 053 307 172
herby certify that the Company has surveyed the land comprised in this plan by Philip Anthony James POZZI, Licensed Surveyor, for whose work the company accepts responsibility, that the plan is accurate, that the said survey was performed in accordance with the Surveyors Act 1977 and the Survey Regulation 1982 and that the said survey was completed on 13-10-1998.

BENNETT AND FRANCIS
sch 4 - signature

Plan of Lots 1 & 2, Proposed Easements A & D in Lot 2 and Proposed Easements C, B & E in Lot 1

Cancelling Lot 23 on RP193152

PARISH: **ENOGGERA** COUNTY: **Stanley**

Markings: **RP193152**

File A

F/N: **NO**

Scale: **1:400**

Format: **VOLUMETRIC**



SP115362

Plan Status:

55

18-xxx

Date: 14-10-98

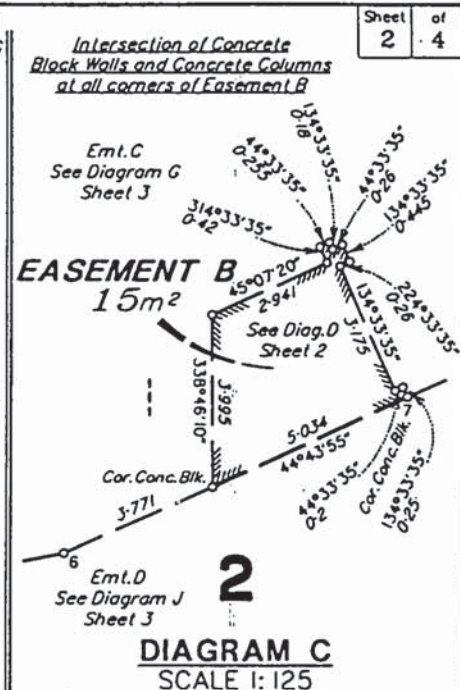
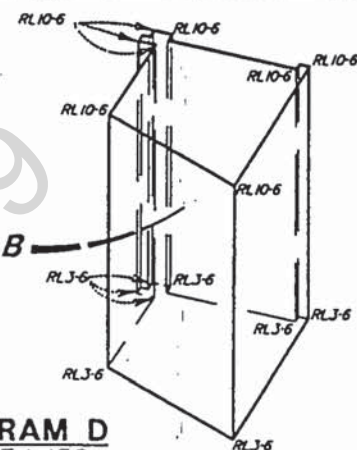


DIAGRAM D
SCALE 1:150

The sides of Easement B are vertical planes.

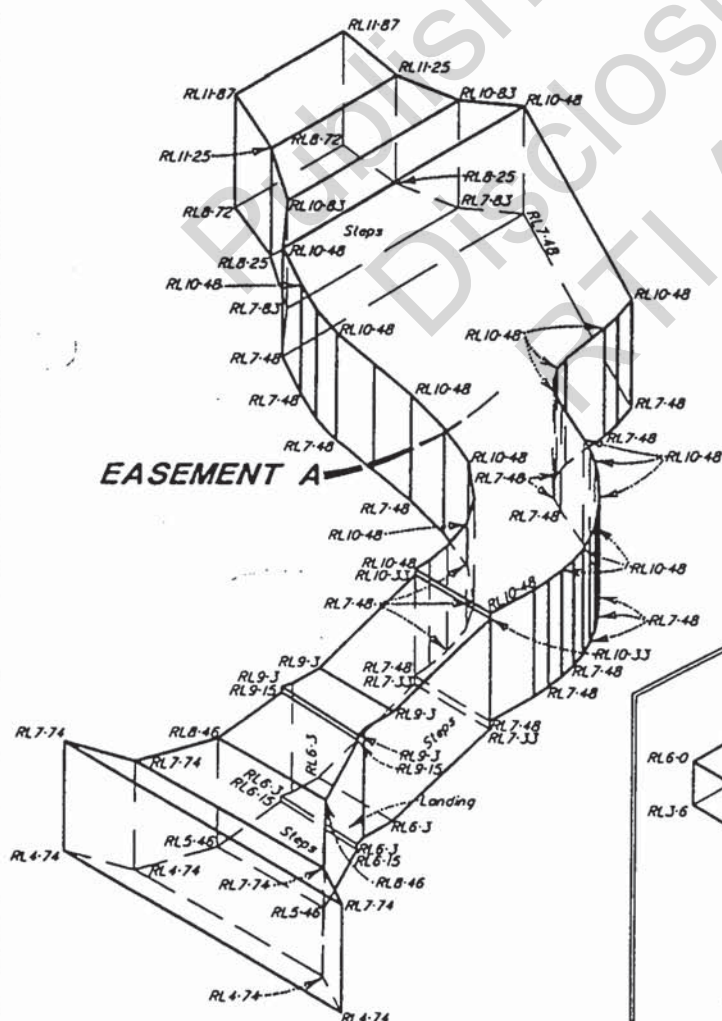


DIAGRAM E
SCALE 1:150

The sides of Easement A are vertical planes.

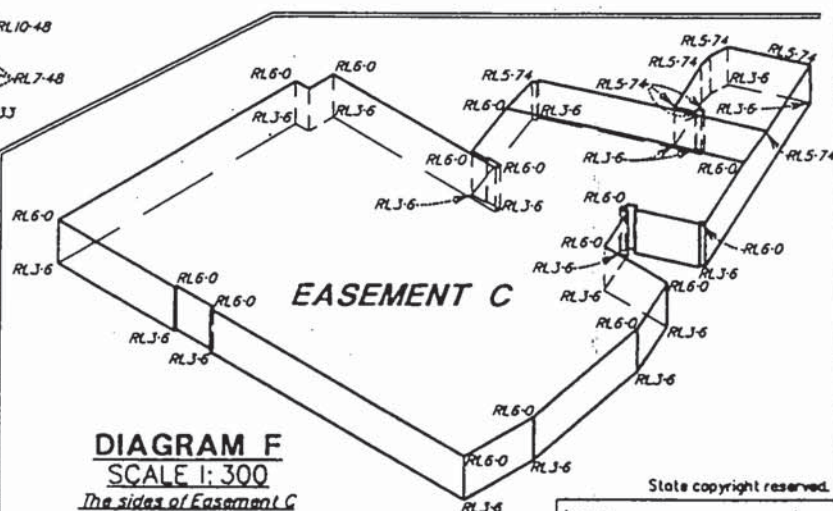


DIAGRAM F
SCALE 1:300

The sides of Easement G
are vertical planes.

State copyright reserved.

Insert
Plan
Number **SP 56 5362**

DIAGRAM G

SCALE 1:200

Intersection of Concrete Walls
and Columns at all corners
of Easement C unless
otherwise shown.

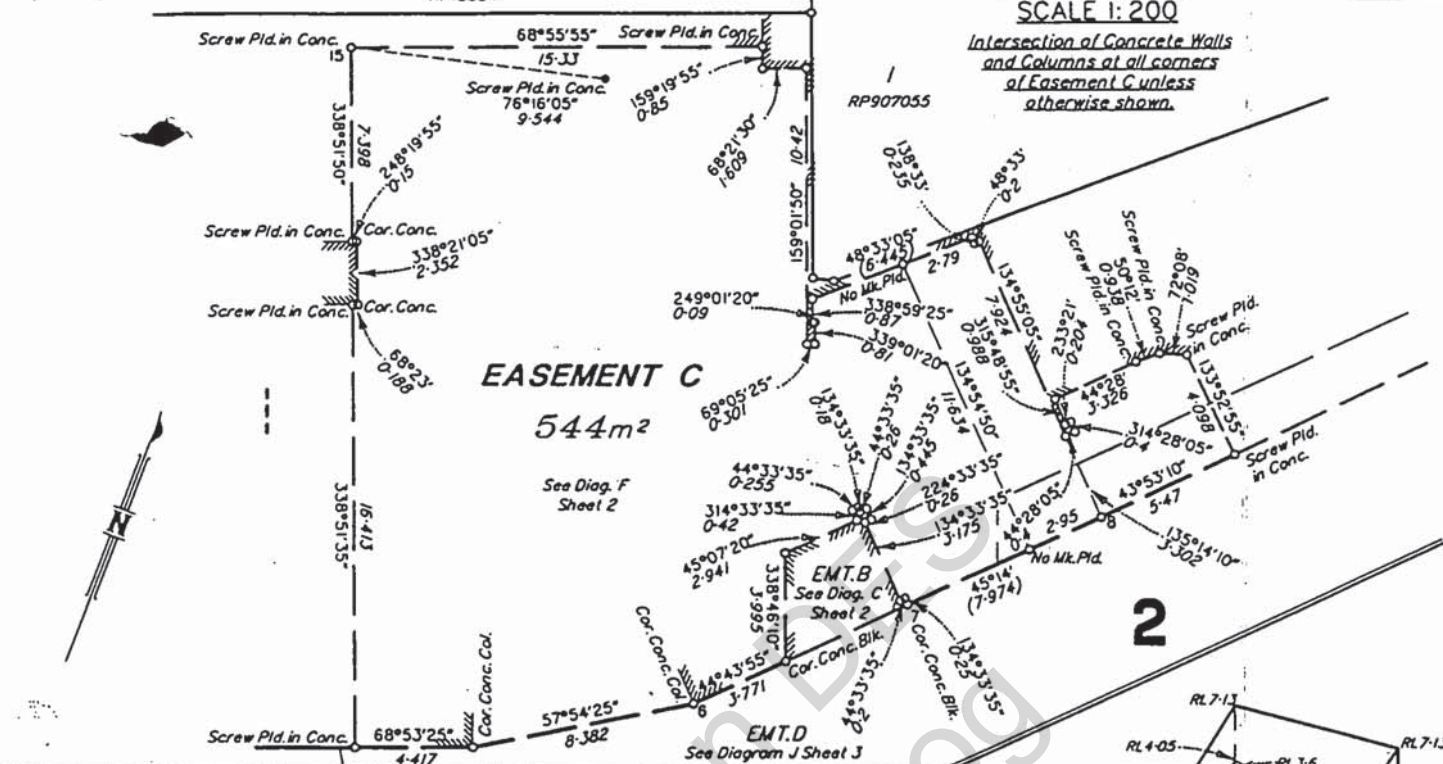


DIAGRAM H

SCALE 1:300

The sides of Easement B
are vertical planes.

EASEMENT D

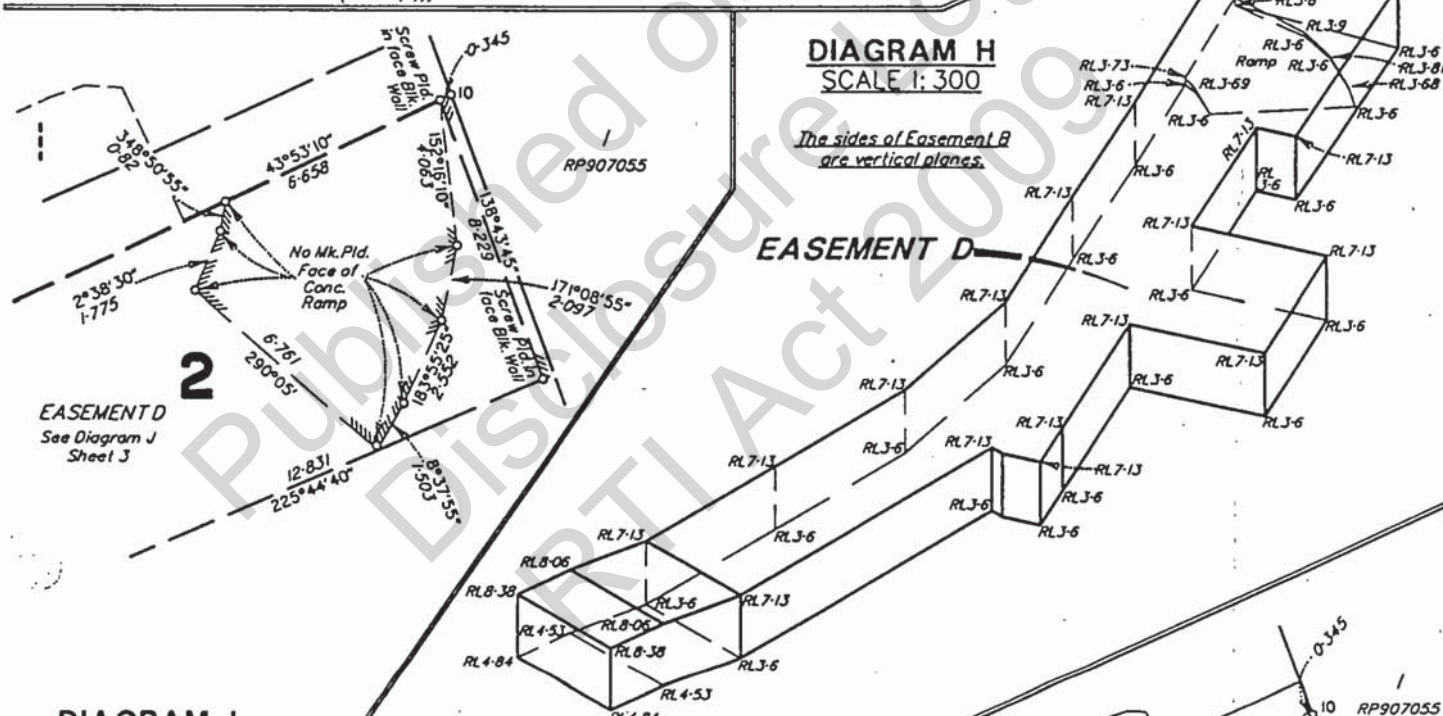


DIAGRAM I

SCALE 1:150

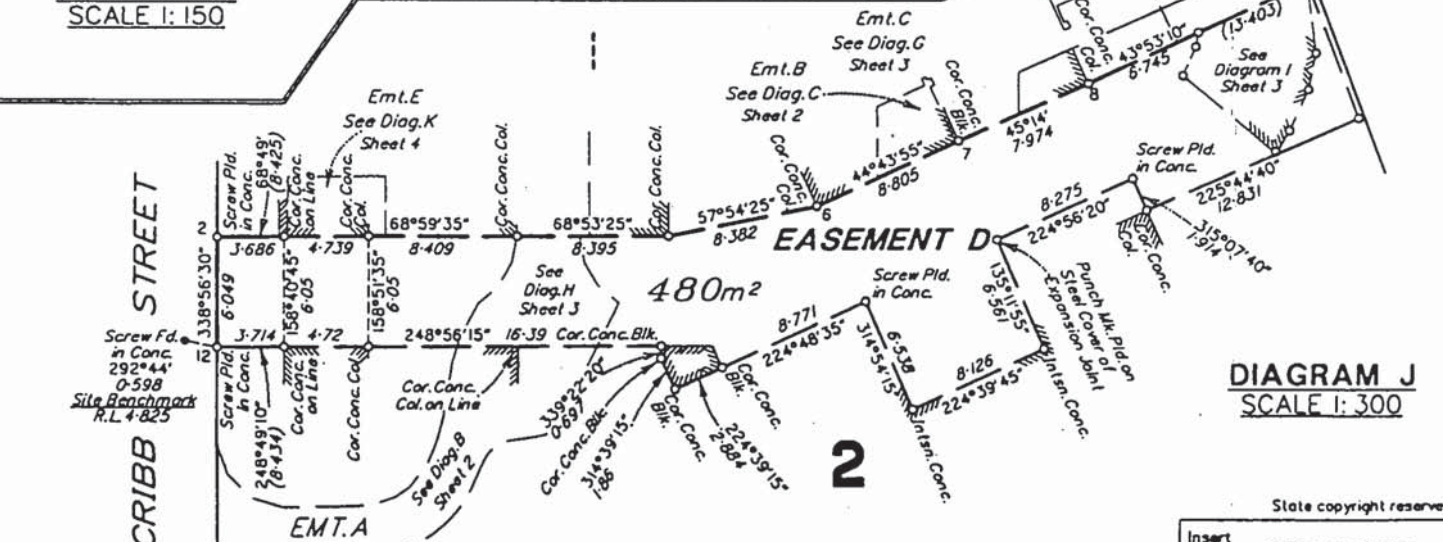
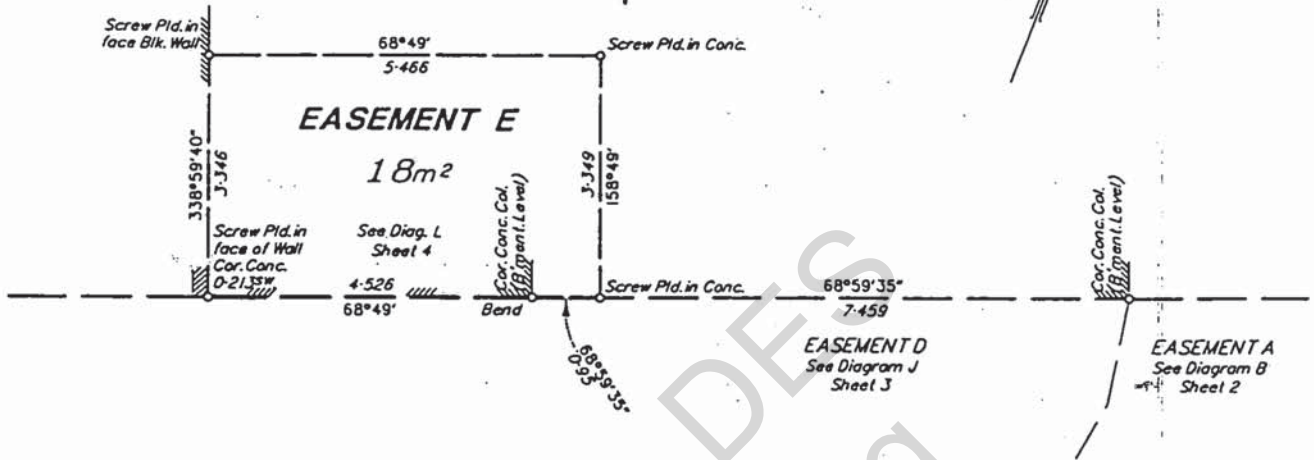


DIAGRAM J

SCALE 1:300



DIAGRAM K
SCALE 1:75



2

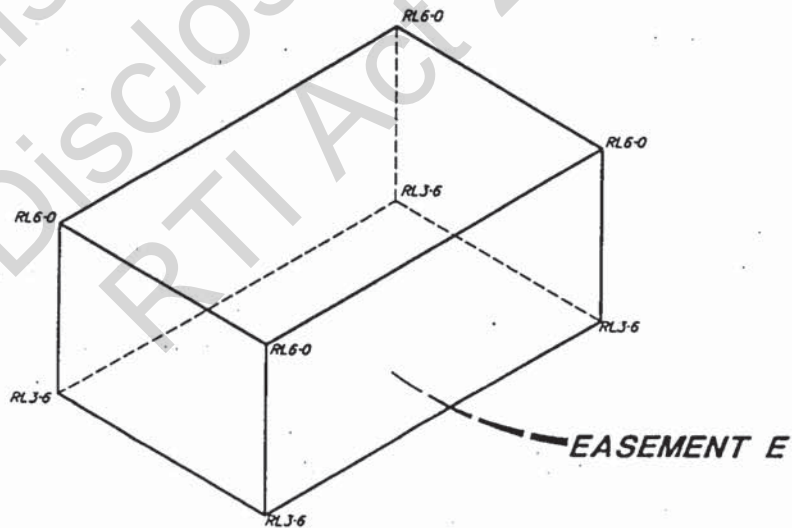
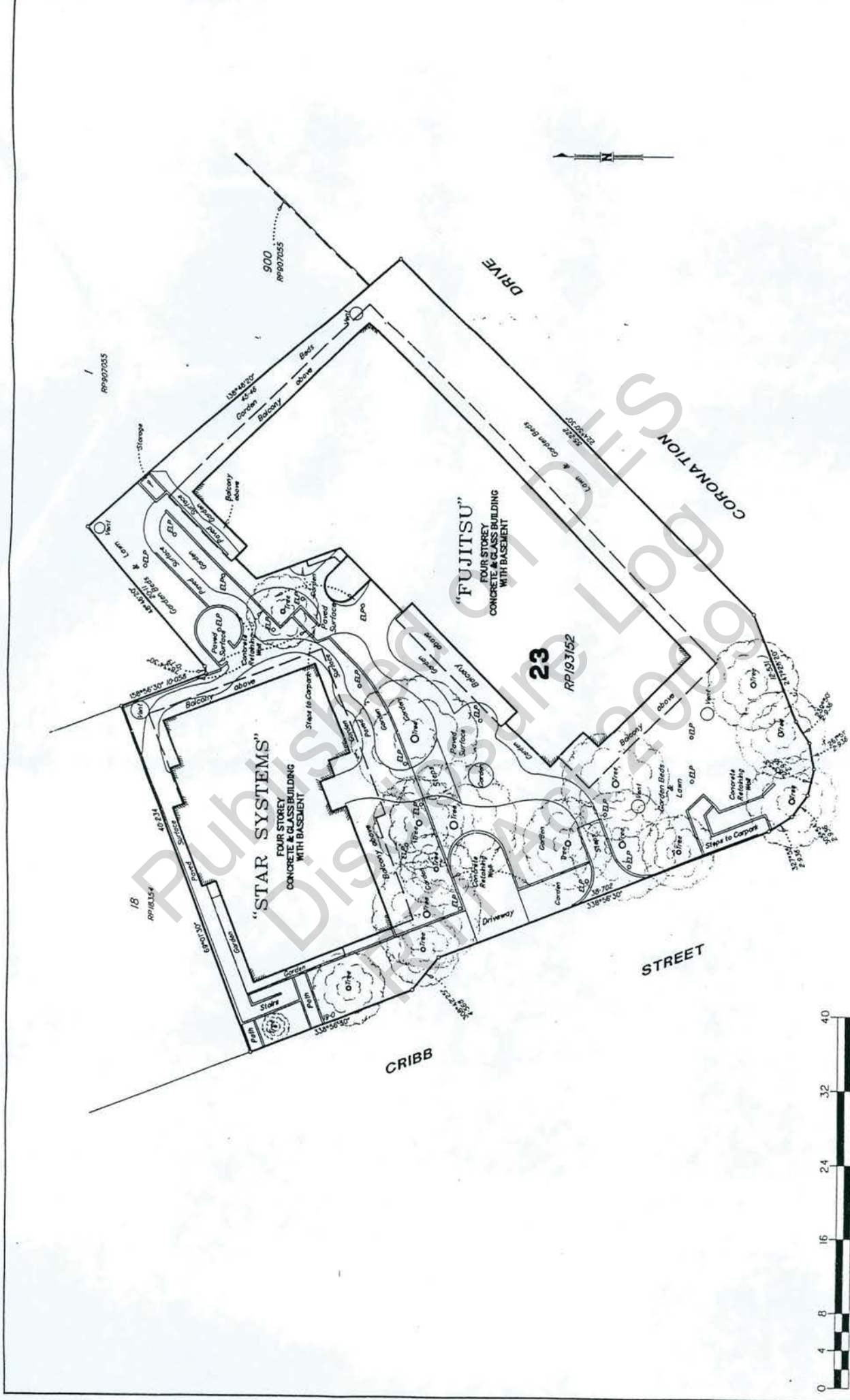


DIAGRAM L
SCALE 1:75

The sides of Easement E
are vertical planes.



Client	STAR SYSTEMS PTY. LTD.			
	Project			
	PODIUM LEVEL SURVEY			
	DETAIL SURVEY in part of Lot 23 on RP/19/152, Original Portion IN, Parish of Enoggera, County of Stanley, Local Authority: — Brisbane City Council.			
Bennett & Francis Pty Ltd	Drawn	R.G.	PP	18/5/98
	F.W.	PP	F/B. 98-013 L/B.	Check
	File	A3697801	Date	2-5-98
	SCALE	1:400	PLAN REFERENCE	006978.01

Memorandum

To

File reference 902038

From

Date 19/3/98

Subject

Notes

Fill deposits - mud, sand, rubble
unknown thickness
underlain by sand, silt, clay + gravel.

Depth glw 5-10m BGL

→ unconfirmed.

1946 - occ several bldgs - sev stones in hgt
W side side (adj Gibb st) - old warehouse
Adj - bldg res app
Land to east v/L - 1 bldg comm
Stn - adj Corp Driv - 1 lge comm.

1958 - site of five erected adj remaining bldg
- remainder site unchanged.

1972 - lge bldg to stn removed - no of bldgs
(high-rise) taking its place.

1972-82 - ↑ rise erected to stn.

82-94 - existing bldgs removed + redvel - comm

Interviews

- present bldg const 1984
- soil/rock removed for vlg car park
1m below street level.

Site insp 23/8/96 - 2 bldgs + vlg carpark

W portion site - gardens + lawn

N ✓

- gravel bed landscaping

S

- several multi-storey comm bldgs

Memorandum

To

File reference

From

Subject

Date

Notes

(2)

* CoC, SRA, results? →

* Where is summary? →

* Where were MIL1, MIL2 taken?

Fill? - what depth etc.

- past use - Better Brakes

Activity likely to have been in area of old car park →

? Stg II Report

→ site used for pp? - s/s or brake servicing

→ 3 wells cnr prev acc by s/s?

* G/W $\approx$ 2m BGL →?

12/9/96 - 3 b/h

- TPH cont soil btwn 1.5-3.5m bgs

- ↑ odour + PID readings near bottom of b/h.

* has the footpath been investigated? —

26/9/97 - Letter from BCC stating s/s built around 1940's - demolished in 83.

* check status of rules on register.

* any plans from Shell?

Memorandum

To

File reference

From

Date

Subject

Notes

(3)

Final Report.

2-9/10/97 - BH12-24 - up to 1.5m.

2 x m/w - DMMB1, DMMB2

* BH1 + DMMB1 - excessive silt - couldn't sample →

→ strong H/C odours BH1 + Sheen

- basement 5 Cribb St - imported sandy base layer over phyllite. →

- pg 6 - likely cont overburden soil removed prev during earthworks for const basement.

- depth overburden soil increases beneath 159 Cono Dr - sthly direction

- imported sandy gravel base layer - up to 0.6m thick high plas - clay

- b/h outside bldg - 0.8m loose silty sand.

B1 - 3.9 m g/w

B2 - 1.2 m

BH1 - 3.5 m

BH4 - 2.9 m

* pg 7 - g/w cont, but couldn't bones not be sampled. - re silt → ?

* need to clarify entry b/L - b/h 16.

Kim,

my concerns

① odour/wst ent @ BH16

② no plans from Shell

} ie how can we be certain no activities were conducted in this area?

Department of Environment

File A

sch 4 - signature

FM267 December 1997

③ Did you check results, CoC's, SRA's etc ④ Summary - Vonne

addressed by
DMM
06/04/97

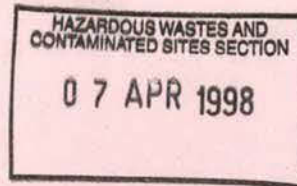
sch 4 - signature



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

Fax Sheet

902038



135 Wickham Terrace, Brisbane
Queensland, Australia
PO Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
dmmbn@ozemail.com.au E-mail

To Kym Barry
Company Department of Environment
Fax Number 3227 8341

From s78(B)(2)
Job Number 33287-005-074
Date 6 April 1997
Reference 19-98-1332
Subject 5 CRIBB STREET & 159 CORONATION DRIVE - MILTON

No. of Pages 1 including this cover

Kim,

In response to your inquiry of 23 March 1998, please note the following.

- Dames & Moore have in the past, and again recently, made considerable effort to locate plans of the former Shell service station. Shell have informed Dames & Moore that there are no plans of this service station in their records. However, recent inquiries have revealed some detail about the existence of the service station. The site was leased to Datsun from 1951. There were 4 x 2000 gallon (9000 L) underground tanks on the site, with 2 Shell pumps. Trading ceased in 1978, the tanks were removed and the site was sold in 1981. The exact location of the tanks is unknown.
- At borehole BH16 a petrochemical odour was recorded, and a sample taken at this location resulted in no contaminants being detected. The odour threshold for petrochemicals is below detectable limits. It is possible that small amounts of these chemicals were present and laboratory tests did not detect them.

If you have any further questions please contact Karina Berry or Geoff Perryman in our Brisbane office.

Regards

sch 4 - signature

s78(B)(2)

Engineer

This facsimile transmission is intended for the persons named above. If you are not one of those persons we do not waive any privilege attaching to this facsimile transmission, and any disclosure or use of this transmission by you is prohibited. If you receive this transmission in error please notify the sender immediately and return the original transmission by mail.



TABLE 2
SUMMARY OF SOIL SAMPLE RESULTS
ORGANIC ANALYSES

Sample No.	Date	From	To	C ₈ - C ₉	C ₁₀ - C ₁₄	C ₁₅ - C ₂₈	C ₂₉ - C ₃₂	Benzene	Toluene	Chloro benzene	Ethyl benzene	Xylene	Phenols	PAHs	OCOP Pesticides	MAHs	Halogenated Hydrocarbons	Fumigants	Oxygenated Hydrocarbons	Sulphonated Compounds
Units	dd/mm/yyyy	m	m	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SCC				100	2,500	1,000	5,000	60	500	40	500	500								
Response Level				500	500	500	500	500	500	500	500	500								
DMMB1-S2	6/10/97	0.9	1.1	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB1-S6	6/10/97	2.9	3.1	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB1-S7	6/10/97	3.4	3.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB1-S9	6/10/97	4.4	4.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB1-S10	6/10/97	5.4	5.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH12-S1	2/10/97	0.2	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH13-S1	2/10/97	0.3	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH14-S1	2/10/97	0.2	0.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH15-S1	2/10/97	0.3	0.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH16-S1	2/10/97	0.2	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH20-S1	6/10/97	0.3	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH20-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB2-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB2-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB2-S4	6/10/97	1.9	2.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB2-S6	6/10/97	2.9	3.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
DMMB2-S9	6/10/97	4.9	5.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH17-S1	3/10/97	0.4	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH17-S2	3/10/97	0.7	0.9	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH17-S4	3/10/97	1.3	1.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH18-S1	3/10/97	0.4	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH18-S2	3/10/97	0.5	0.7	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH18-S4	3/10/97	1.5	1.8	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH19-S3	7/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH21-S1	6/10/97	0.4	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH21-S3	6/10/97	1.2	1.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH22-S1	6/10/97	0.4	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH22-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH22-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH23-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH23-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH24-S1	7/10/97	0.5	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
BH24-S4	7/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

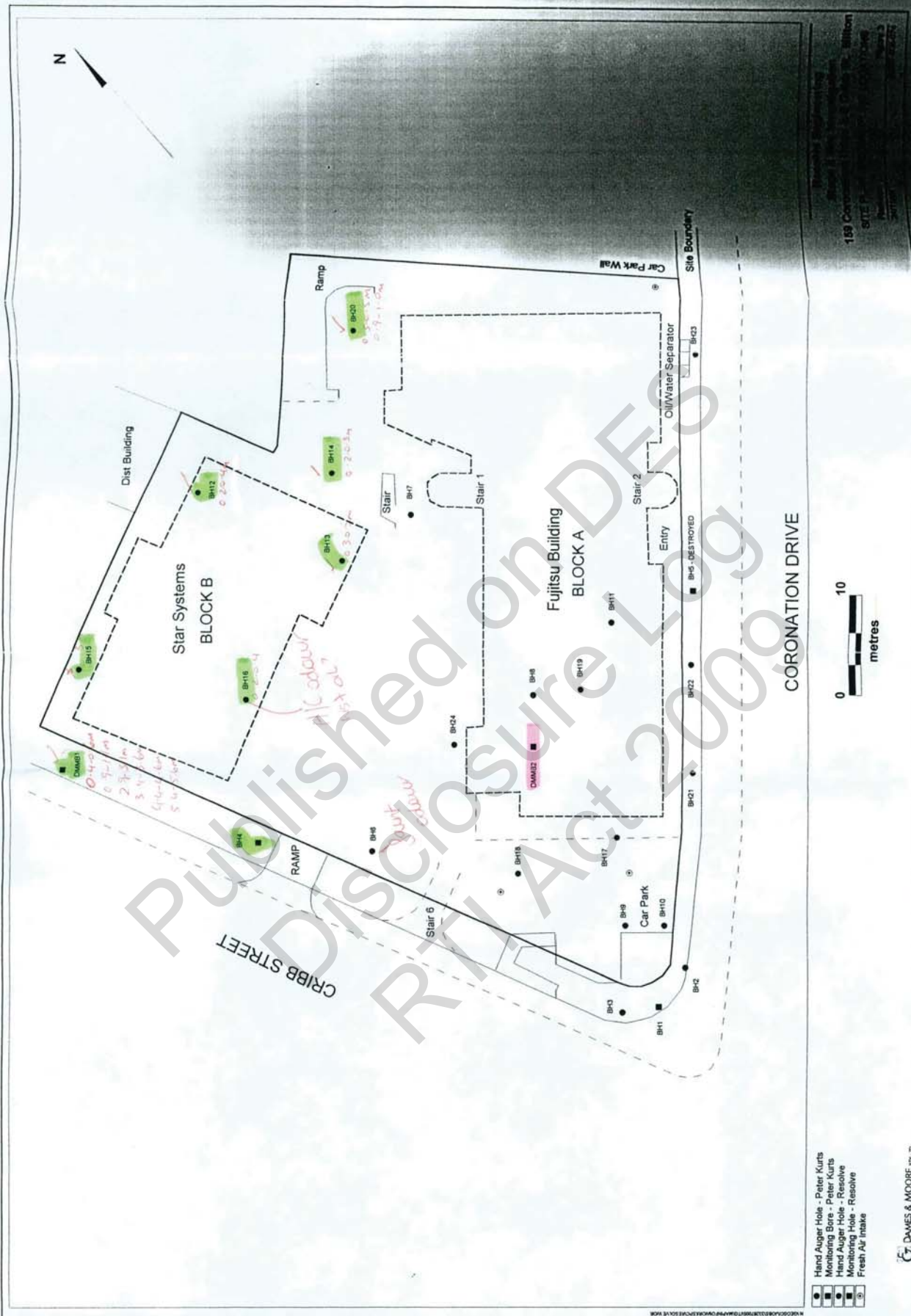
Notes:
1. SCC - Soil Contamination Criteria.
2. Shaded boxes exceed SCC
3. Response Level based on a - Imray & Langley, 1996 (use "F" Industrial) or
b - MDEP MCP Level for Soil Type S2 + Groundwater Type GW2/GW3
4. Black boxes exceed Response Levels

TABLE 1
SUMMARY OF SOIL SAMPLE RESULTS
INORGANIC ANALYSIS

Sample No.	Date	From	To	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
Units	dd/mm/yyyy	m	m	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SCC				20	3	50	60	60	300	200	1.0
DMMB1-S1	6/10/97	0.4	0.6	5	<1	14	18	7	61	66	0.2
DMMB1-S2	6/10/97	0.9	1.1	3	<1	13	13	9	35	55	0.1
DMMB1-S6	6/10/97	2.9	3.1	2	<1	4	14	3	14	20	<0.1
DMMB1-S7	6/10/97	3.4	3.6	2	<1	15	15	6	11	27	<0.1
DMMB1-S9	6/10/97	4.4	4.6	2	<1	14	15	5	11	34	<0.1
DMMB1-S10	6/10/97	5.4	5.6	2	<1	9	17	10	17	45.0	<0.1
BH12-S1	2/10/97	0.2	0.4	1	<1	8	9	12	17	40	<0.1
BH13-S1	2/10/97	0.3	0.5	2	<1	4	10	6	6	28	<0.1
BH14-S1	2/10/97	0.2	0.3	2	<1	2	6	3	14	23	<0.1
BH15-S1	2/10/97	0.3	0.3	2	<1	18	15	10	34	40	<0.1
BH16-S1	2/10/97	0.2	0.4	5	<1	9	11	12	17	40	<0.1
BH20-S1	6/10/97	0.3	0.5	3.0	<1	2	13	3	8	9	<0.1
BH20-S2	6/10/97	0.9	1.0	2	<1	5	10	4	9	10	<0.1
DMMB2-S2	6/10/97	0.9	1.0	4	<1	17	19	14	9	20	<0.1
DMMB2-S3	6/10/97	1.4	1.5	7	<1	29	18	16	21	30	<0.1
DMMB2-S4	6/10/97	1.9	2.0	9	<1	28	12	18	20	30	<0.1
DMMB2-S6	6/10/97	2.9	3.0	6	<1	13	6	12	10	22	0.1
DMMB2-S9	6/10/97	4.9	5.0	7	<1	22	14	10	18	36	<0.1
BH17-S1	3/10/97	0.4	0.4	33	<1	14	44	2	10	3	<0.1
BH17-S2	3/10/97	0.7	0.9	3	<1	24	9	11	14	19	<0.1
BH17-S4	3/10/97	1.3	1.4	7	<1	18	5	9	13	17	<0.1
BH18-S1	3/10/97	0.4	0.4	10	<1	7	30	3	6	6	<0.1
BH18-S2	3/10/97	0.5	0.7	3	<1	27	13	19	15	28	<0.1
BH18-S4	3/10/97	1.5	1.8	1	<1	17	8	17	12	22	<0.1
BH19-S3	7/10/97	1.4	1.5	2	<1	14	7	10	10	16	<0.1
BH21-S1	6/10/97	0.4	0.5	2	1	12	12	9	57	171	<0.1
BH21-S3	6/10/97	1.2	1.3	4	3	32	19	19	48	111	0.4
BH22-S1	6/10/97	0.4	0.5	12	3	31	33	16	213	157	1.4
BH22-S2	6/10/97	0.9	1.0	3	4	32	19	20	44	79	0.2
BH22-S3	6/10/97	1.4	1.5	3	4	40	18	23	28	94	0.4
BH23-S2	6/10/97	0.9	1.0	4	2	24	26	15	50	79	0.4
BH23-S3	6/10/97	1.4	1.5	2	3	36	13	19	12	40	<0.1
BH24-S1	7/10/97	0.5	0.5	25	1	12	89	4	14	11	<0.1
BH24-S4	7/10/97	1.4	1.6	1	2	26	11	16	5	32	<0.1

Notes:

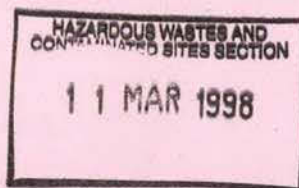
1. SCC - Soil Contamination Criteria
2. Shaded boxes exceed SCC
3. Response Level based on a - Imray & Langley, 1996 (use "F" Industrial) or b - MDEP MCP Level for Soil Type S2 + Groundwater Type GW2/GW3
4. Black boxes exceed Response Levels



Below 100
above 100



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Fax Sheet

135 Wickham Terrace, Brisbane
Queensland, Australia
PO Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
dmbbn@ozemail.com.au E-mail

To	Company	Fax Number	
Kim Barry	Department of Environment	(07) 3227 8341	
Cc			
Julia Andrew	AMP Investments	(02) 9257 7929	
From	s78(B)(2)	Job Number	33287-005-074
Date	11 March 1998	Reference	19-98- 920
Subject	5 CRIBB STREET & 159 CORONATION DRIVE - MILTON SITE CONTAMINATION REPORT QDOE FILE NO. 902038		
No. of Pages	1 including this cover		

Kim,

Further to submission of the Proposed Volumetric Subdivision plan for the above site and our recent telephone conversations we herewith confirm that we have been advised that this plan has been submitted by the surveyors for formal subdivision approval - which is anticipated by the end of next week (20 March 1998). We have also been advised that no amendments are likely to be applied to the proposed subdivision plan. The formal subdivision plan when issued will form an annexure to the contract for sale of the 5 Cribb Street property.

We understand that a formal approved subdivision plan is required before issue of the Site Contamination Report, subject to final review (including peer review) by DoE. As discussed, we wish to request that this final review process proceeds on the basis of the proposed subdivision plan, with issue of the Site Contamination Report subject to submission of the formal approved subdivision plan, as timing of this process is critical.

Thank you for your consideration of this matter.

Regards,

sch 4 - signature

s78(B)(2)

Principal, Geoscience & Engineering

This facsimile transmission is intended for the persons named above. If you are not one of those persons we do not waive any privilege attaching to this facsimile transmission, and any disclosure or use of this transmission by you is prohibited. If you receive this transmission in error please notify the sender immediately and return the original transmission by mail.





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HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

06 MAR 1998

135 Wickham Terrace, Brisbane
Queensland, Australia
PO Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
dmbbn@ozemail.com.au E-mail

To: Contaminated Sites Section, DOE
Attention: Ms Kim Barry
Address: Level 12, 160 Ann St
Brisbane 4000.
From: s78(B)(2)

Date: 6/3/98
Ref: B18-98-474
Job No: 33 287-005-074

The enclosed document(s), listed below, are forwarded for your attention.

Reason for transmittal

☐ as requested ☒ for information ☐ final report ☐ for review ☐ other _____

Item	Document No.	Rev.	Title/Description	No. of Copies
1	BBN1DOE1CBL.doc		PROPOSED VOLUMETRIC SUBDIVISION 5 (RIAB 94 + 159 CORONATION DR.	1
2	005799.15		PROPOSED VOLUMETRIC SUBDIVISION Lots 142, Cancelling Lot 23 RP193152	1

Acknowledgement of receipt required?

☐ No ☒ Yes →

If YES, please sign below and return
copy by mail/fax to Dames & Moore

Distribution: • Original to receiver
• Project General File

Received
by: s78(B)(2) Date 06/03/98



DAMES & MOORE PTY LTD

A DAMES & MOORE COMPANY

135 Wickham Terrace, Brisbane
Queensland, Australia
P.O. Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

6 March 1997

Ref: 33287-005-074
BBNDOEKB01.doc

Contaminated Sites Section
Department of Environment
Level 12, 160 Ann Street
BRISBANE 4000

Attention: Ms Kim Barry

Dear Kim,

**PROPOSED VOLUMETRIC SUBDIVISION
5 CRIBB STREET & 159 CORONATION DRIVE, MILTON**

Please find attached a copy of the A3 plan showing the proposed volumetric subdivision of the above site. This should finalise the documentation required by the Department.

Should you have any queries or require more information please do not hesitate to contact s78(B)(2) s78(B)(2) at our Brisbane office.

Yours faithfully
DAMES & MOORE

sch 4 - signature

s78(B)(2)

*Consultant
Geoscience and Engineering*

cc

s78(B)(2)

AMP Investments Australia Limited

(AUTO)

THE FOLLOWING FILE(S) ERASED

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ERRORS

- 1) HANG UP OR LINE FAIL 2) BUSY 3) NO ANSWER 4) NO FACSIMILE CONNECTION



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DM-FORM-20 - Rev. 2

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by:

s78(B)(2)

Date _____

26/5

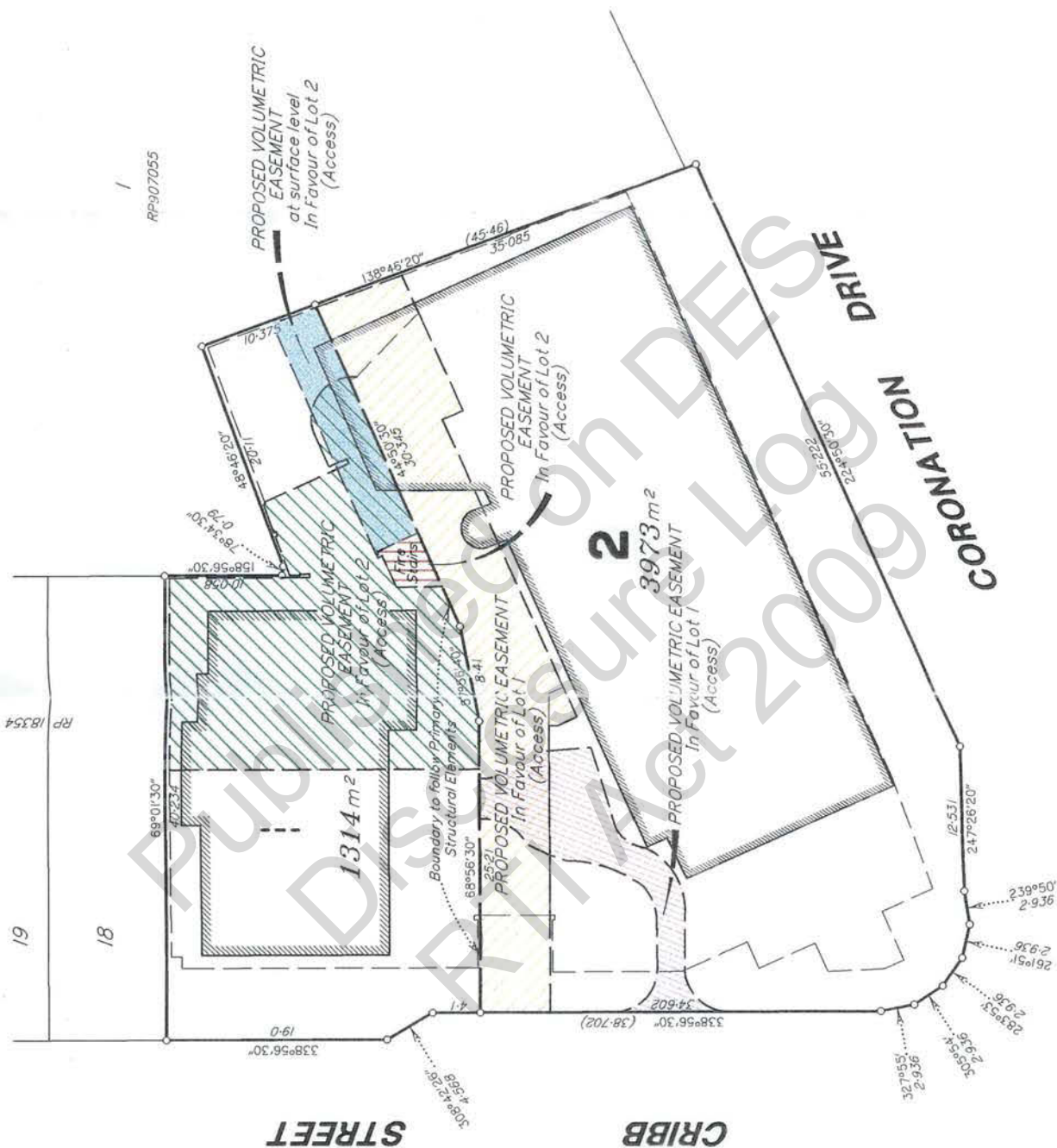
*Distribution: • Original to receiver
• Project General File*

If YES, please sign below and return copy by mail/fax to Darnes & Moore

Acknowledgement of receipt required?

← ses ☐ ON ☐

1	BANDER BLD. dca.	PROPOSED VOLUMETRIC SUBDIVISION 5 LOTS + 159 CORNACIO DE	18-xx
2	005999.15	PROPOSED VOLUMETRIC SUBDIVISION 1 LOTS + 2, CORNACIO DE	18-xx



Lot 1 is a volumetric lot restricted in height from 20.0m below the lower basement level to 40.0m above the uppermost level of the improvements thereon.

Lot 2 is a standard format lot which is the balance of Lot 23 on RP 193152 excluding Proposed Lot 1.

<p>Dimensions and areas are subject to survey.</p> <p>— — — Denotes existing basement outline</p>	<p>Client STAR SYSTEMS PTY. LTD.</p> <p>Project COR. CORONATION DRIVE & CRIBB STREET.</p>	<p>PROPOSED VOLUMETRIC SUBDIVISION, Lots 1 & 2, Cancelling Lot 23 on RP 193152, Original Portion IN, Parish of Enoggera, County of Stanley, Local Authority: Brisbane C. C.</p>	<p>Bennett & Francis Pty. Ltd. Surveying, Cartography, Computing, Mapping, Town Planning. A.C.N. 053 307 172 35 Peel Street, South Brisbane Q 4101 Phone (07) 3844 5600</p>	<p>Drawn NB PP F.W. L./B. F./B. 00599915 File 00599915 SCALE 1:400 PLAN REFERENCE 005999.15</p> <p>Date 29-7-97 Check [Signature] Date 19-12-97</p>
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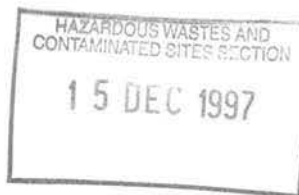
sch 4 - signature



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902038



135 Wickham Terrace, Brisbane
Queensland, Australia
P.O. Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

12 December 1997

Ref: 33287-005-074
BBNDOEGPL02.doc

The Director
Hazardous Waste and Contaminated Land Section
Queensland Department of Environment
12th Floor, 160 Ann Street
BRISBANE Q4000

Attention: Ms. Caz Murray

Dear Caz,

**CONTAMINATED LAND EVALUATION
5 CRIBB STREET & 159 CORONATION DRIVE, MILTON
QDOE FILE NO. 902038**

Further to submission of previous report copies for Stage 1 and Preliminary Stage 2 investigations, we are pleased to herewith submit our Final Report for the further Stage 2 investigation recently completed for the above property for your review.

Should you require clarification regarding any issues included in our report please do not hesitate to contact s78(B)(2) at our office..

Yours faithfully
DAMES & MOORE

sch 4 - signature

s78(B)(2)

Principal
Geoscience and Engineering

9th January, 1998

s78(B)(2)

Resolve Facilities Management
Level 28, AMP Place
10 Eagle Street
BRISBANE QLD 4000

Dear s78(B)(2)

RE: SUBDIVISION OF 5 CRIBB STREET & 159 CORONATION DRIVE, MILTON

Further to our discussions and previous correspondence we wish to confirm the status of the abovementioned project:-

- A contract for the sale of 5 Cribb Street is being executed between the current owners, namely the Queensland Local Government Superannuation Board (QLGSB), and the purchaser Star Systems Pty Ltd.
- As part of the conditions for the sale of Cribb Street, obviously the clear volumetric subdivision of the property from 159 Coronation Drive is paramount. The purchaser is responsible for coordinating this exercise, subject to the approval of QLGSB, as naturally we want to protect the asset the Board is retaining.
- Dames & Moore have completed their investigative report regarding the contamination of the site. The report clearly highlights that the site contamination is restricted to the 159 Coronation Drive site, and as such, the Department of Environment has been requested to provide confirmation that upon the subdivision of the site, that the 5 Cribb Street site can be given clearance from the contaminated site register and reclassified. It is also noted, that it is not intended to pursue remediation works on the 159 Coronation Drive site at this stage.

Naturally we are very keen to receive written confirmation from the Department of Environment that 5 Cribb Street will be reclassified from the contaminated site register. Please advise the Department of our desire to expedite this matter, and should they have any queries in your absence please ask them to contact me directly.

Thank you for your assistance, and should you have any queries please do not hesitate to contact me.

Yours sincerely,

sch 4 - signature

s78(B)(2)

ASSET MANAGER

Direct Ph. (02) 9257 2800

email: julia_andrew@invest.amp.com.au

Strength & Innovation

AMP Investments Australia Limited ACN 001 777 591
AMP Building Level 21 33 Alfred Street Sydney NSW 2000
PO Box R227 Royal Exchange NSW 1225
Facsimile (02) 9257 7929 **Telephone 02 9257 7511**

File A

C:\Backup\QLGSB\Wilton\980109b.doc 74 Partner



Site Id: 140-037552

Site Name: SERVICE STATION, MILTON

Official Authorisation for CSR Site: Y

Local Government: BRISBANE CITY

Category: PRO

Entry Date: 02/10/97

Last Altered: 20/10/1997

Location: 157 CORONATION DRIVE
MILTON
4064

Lot: 23 on Plan RP193152

Tenure:

Owner: QLD LOCAL GOVERNMENT SUPERANNUATION BOARD
C/- SAMUT & COMPANY
GPO BOX 808
BRISBANE
QLD
4001

Zoning:

Current Use: 2231

Area: 3973 ha/s

Prescribed Purpose:

File: 902038

UXO region:

Contaminants:

Action Officer:

Vol:

Comments:

UNK

NIL

Status: A

Folio: 0000

NOTIFIED BY BCC - SEE LETTER DATED 26/9/97
(REF:JB:JB). SITE PREVIOUSLY OPERATED AS A SERVICE
STATION. 2/10/97.TMB// CSI APPLICATION RECEIVED
FROM DAMES & MOORE PTY LTD ON 07/10/97
(REF:33287-005-074): STAGE 1 AND PRELIMINARY STAGE
2 INVESTIGATIONS HAVE BEEN CARRIED OUT. A FURTHER
STAGE 2 INVESTIGATION IS CURRENTLY BEING
UNDERTAKEN.-20/10/97.RT.//

** END OF REPORT **





DAMES & MOORE PTY LTD

A DAMES & MOORE COMPANY

REPORT

**STAGE II SITE INVESTIGATION
159 CORONATION DRIVE &
5 CRIBB STREET, MILTON**

for

RESOLVE ENGINEERING

Dames & Moore

Ref: BBN:geosci\jobs\33287005\report.doc

12 December, 1997

135 Wickham Tee

BRISBANE QLD 4000

Pl: (07) 3832 3222

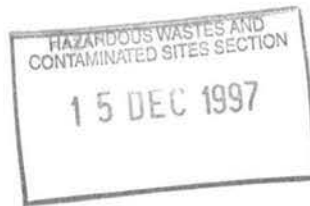
Fax: (07) 3832 1687

A.C.N. 003 293 696



DAMES & MOORE PTY LTD

A DAMES & MOORE COMPANY



135 Wickham Terrace, Brisbane
Queensland, Australia
P.O. Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

12 December 1997

Ref: 33287-005-074
BBN\REGEPL04.doc

Resolve Engineering Pty Ltd
Resolve Facilities Management
AMP Place, Level 28
10 Eagle Street
BRISBANE 4000

Attention: Ms Rachel Estay-Banks
Environmental Officer

Dear Rachel,

**STAGE II SITE CONTAMINATION INVESTIGATION
5 CRIBB STREET & 159 CORONATION DRIVE, MILTON**

Further to submission of our Draft Report we are pleased to herewith submit our Final Report for the Stage II site contamination investigation completed for the above project. A copy of this report is concurrently being submitted to the Queensland Department of Environment.

Please note that a separate Remedial Action Plan (RAP) is also to be prepared for 159 Coronation Drive and submitted for your consideration in accordance with our brief.

Should you have any queries or require clarification regarding any aspect of our report please do not hesitate to contact Geoff Perryman at our office.

Yours faithfully
DAMES & MOORE

sch 4 - signature

PP s78(B)(2)

*Principal
Geoscience and Engineering*

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APPENDIX A	BOREHOLE LOGS AND MONITORING WELL CONSTRUCTION
APPENDIX B	ANALYTICAL DOCUMENTATION

LIST OF ABBREVIATIONS

ANZECC	Australian and New Zealand Environment and Conservation Council
BTEX	Benzene, toluene, ethyl-benzene and xylene
CHEM Unit	Queensland Government's Chemical Hazards and Emergency Management Unit
CSR	Contaminated Sites Register
DoE	Queensland Department of Environment
EIT	Environmental Investigation Threshold
GCC	Ground water Contamination Criteria
HBIT	Health Based Investigation Threshold
HIL	Health Investigation Level
HW&CSS	Hazardous Waste & Contaminated Sites Section (DoE)
LOR	Level of reporting
MCC	Maryborough City Council
NATA	National Association of Testing Authorities
NHMRC	National Health and Medical Research Council
OCP	Organochlorine pesticides
OPP	Organophosphorus pesticides
pH	Hydrogen ion activity
PAH	Polycyclic aromatic hydrocarbons
SCC	Soil Contamination Criteria
SVOC	Semi-volatile organic compounds
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total petroleum hydrocarbons
UST	Underground Storage Tank
VOC	Volatile organic compounds (solvents)
WMB	Waste Management Branch (DoE)

REPORT
STAGE II SITE INVESTIGATION
159 CORONATION DRIVE & 5 CRIBB STREET, MILTON

for
RESOLVE ENGINEERING

EXECUTIVE SUMMARY

Dames & Moore was commissioned by Resolve Engineering to carry out a further Stage II Site Investigation for the properties at 159 Coronation Drive and 5 Cribb St, Milton. The site is a corner allotment comprising the Fujitsu Building at 159 Coronation Drive and the Star Systems Building at 5 Cribb Street. We understand that it is proposed to sub-divide the property and create Strata Titles for the separate buildings located at these respective addresses.

This investigation suggested that the only significant contamination on the property is restricted to the southern corner of 159 Coronation Drive near the intersection with Cribb Street and comprises hydrocarbon contamination of soil and groundwater. The only contamination encountered at 5 Cribb Street is below soil contamination criteria and not considered to be significant risk to health or the environment.

It is recommended that pending subdivision of the land as Strata Titles:

- 159 Coronation Drive may be listed as a 'Restricted' site without remediation or a 'Former' site subject to effective remediation; and
- 5 Cribb Street is not included on the Contaminated Land Register (CSR).

Some additional investigation for this site is recommended in order to more effectively delineate the extent of soil contamination beneath the car park area and more accurately develop solutions and cost estimates for remediation.

REPORT
STAGE II SITE INVESTIGATION
159 CORONATION DRIVE & 5 CRIBB STREET, MILTON

for
RESOLVE ENGINEERING

1. INTRODUCTION

This report details the results of further investigations as part of a Stage II Site Investigation for potential contamination of commercial property at 159 Coronation Drive and 5 Cribb Street, Milton. The property is located at the intersection of Coronation Drive and Cribb Street as shown in Figure 1. The Figure indicates the proximity of the site to the Brisbane River which is located opposite Coronation Drive to the south.

There are currently two existing buildings on the property including the Fujitsu Building (159 Coronation Drive) and the Star Systems Building (5 Cribb Street) respectively. For the purposes of this report, the two buildings will be referred to as the 'sites'. The buildings appear to be connected via a suspended slab, and are commercial high rise. A fully contiguous basement extends to a depth of approximately 1 to 3m below the surrounding ground level.

The Stage II Site Investigation was performed in accordance with Dames & Moore's proposal to Resolve Engineering, dated 15 September 1997.

Previous investigations were completed by Dames & Moore and performed for Peter Kurts Group and Star Systems, and are described in Section 3.

2. SITE DESCRIPTION

The following site description details have basically been outlined in our previous reports for the subject property, and are included herein for completeness and reference.

2.1 LOCATION AND PROPERTY DESCRIPTION

The subject property is located at the corner of Coronation Drive and Cribb Street in Milton. The real property description of the site is Lot 23 RP193152, County of Stanley, Parish of Enoggera, City of Brisbane. This lot and plan description includes an area of 3,973m² and covers both subject sites including 159 Coronation Drive and 5 Cribb Street. The local authority is the Brisbane City Council (BCC) and the property is zoned *Special Development or Commercial and Retail* under the Milton Development Control Plan. The Registered Plan for the property is shown as Figure 2.

2.2 GEOLOGY

The Brisbane 1:100,000 Geological Map (Sheet 9543, Edition 1 - 1986) indicates that the site previously contained surficial anthropogenic deposits (fill) typically consisting of mud, sand and rubble - the fill being underlain by undifferentiated alluvial plains comprising sand, silt, clay and gravel. These alluvial plains overlie Bunya Phyllite bedrock comprising phyllite, chert and minor micaceous meta-arenite.

2.3 TOPOGRAPHY

The Brisbane 1:50,000 Topographical Map (Sheet 9546-III, Edition 1, Series R733) indicates that the site is located at various levels between 5 to 10m above sea level on the lower end of a ridge running north-west towards Red Hill. The site has been levelled as a result of development but the natural slope would have fallen away to the south-east towards the Brisbane River.

2.4 HYDROGEOLOGY

The underlying Bunya Phyllite bedrock is relatively impermeable; hence groundwater is likely to be confined to the alluvial plain deposits. The depth to groundwater may be anticipated to occur up to a depth of 2m below ground level in the alluvium with groundwater flow to the Brisbane River. This is verified from this investigation where groundwater was encountered at a depth of 1.1 metres in monitoring well DMMB2 located in the basement of 159 Coronation Drive.

It is considered highly unlikely that there are any groundwater users in the immediate vicinity due to the marginal water quality; ie. high salinity and anticipated poor yields.

3. PREVIOUS INVESTIGATIONS

Dames & Moore conducted a Stage I Preliminary Site Investigation of the subject property in August 1996 for Kurts Developments Limited (Kurts), as a potential purchaser of the site. The investigation is described in Dames & Moore's report dated August 1996 and entitled *Phase I Environmental Due Diligence Assessment, 159 Coronation Drive, Milton*. This investigation comprised a walk-over survey, compilation of the site history, and limited site investigation in the form of four hand augured boreholes (MIL1 to MIL4), with collection and laboratory analysis of soil samples for organic and inorganic analytes. The investigation results indicated concentrations of analytes below Queensland Government guidelines. However, from the site history, prescribed past usage of the property was identified, including part of the site (159 Coronation Drive) used as a small garage or service station owned and operated by Shell, and part of the site (5 Cribb St) used as an old warehouse leased to 'Better Brakes'. Hence it was concluded that past industrial use of the property may have potentially led to contamination of either soil or groundwater.

A Stage II Site Investigation was subsequently conducted at the request of Kurts to assess the areas where contamination may have resulted from past use of the site (159 Coronation Drive) as a service station. The investigation is described in Dames & Moore's report dated October 1996 and entitled *Stage II Contaminated Land Assessment, 159 Coronation Drive, Milton*. The investigation comprised the installation of five boreholes using a drill rig with extension of three of these to groundwater monitoring wells, hand auguring of six boreholes in the carpark, and collection and laboratory analysis of soil and water samples for organic and inorganic analytes. The investigation results indicated concentrations of petroleum hydrocarbons above Queensland Government guidelines in soil and groundwater samples.

The contamination was identified as petroleum hydrocarbons in the soil and groundwater which is probably the result of pre-existing underground storage tanks. The contamination was confirmed to extend beneath the basement floor slab, but to an unknown horizontal extent. At the request of Star Systems Pty Ltd and with the permission of Kurts Developments, Dames & Moore provided consultation to Star Systems with regard to the potential extent of contamination beneath 5 Cribb Street. Further investigation was recommended (Dames & Moore Letter Report to Knight Frank Hooker dated 10 July 1997).

4. PURPOSE AND SCOPE OF WORK.

The purpose of this further Stage II Site Investigation was to identify the lateral and vertical extent of contamination at the property to allow development of a Remedial Action Plan (RAP) and associated estimate of costs for 159 Coronation Drive and to determine whether 5 Cribb Street was impacted by contamination which may affect any subdivision of the allotment (eg as Strata Titles).

The scope of work carried out for this investigation included the following:

- Drilling 13 boreholes located with reference to the purpose of this investigation and any potential areas of elevated contaminants (as identified during previous investigations for the property), and access considerations across both sites;
- Installation development and sampling of 2 monitoring wells including one on each site;
- Collection of soil samples from the boreholes from near the surface (nominal 200mm), and at selected horizons within the underlying soils including any fill, alluvium and weathered bedrock;
- Collection of groundwater samples from all accessible monitoring wells installed at the property;
- Laboratory analysis of selected soil samples for a range of organic and inorganic analytes;
- Laboratory analysis of groundwater samples for selected organic and inorganic analytes;
- Evaluation of any soil or groundwater contamination levels;
- Delineation of any areas of contamination identified;
- Development of a conceptual Remedial Action Plan (RAP) for the property;
- Estimate of Costs for remediation;

5. FIELD INVESTIGATION

The investigation fieldwork was carried out over the period 2 to 9 October 1997. A total of 13 boreholes were hand augured or mechanically drilled for this investigation and designated BH12 to BH24 respectively (boreholes BH1 to BH11 were drilled during the previous investigations). The boreholes were drilled using a combination of methods including manual hand auguring or by hollow stem auguring using a drilling rig. The boreholes were drilled up to a maximum nominal depth of 1.5m (or refusal).

In addition 2 monitoring wells were installed up to a nominal maximum depth of 5 meters, including one on each site. These wells are designated DMMB1 and DMMB2 respectively and were drilled by hollow stem auger using a drilling rig

All soil samples collected from the boreholes and monitoring wells were placed into 250 mL acid washed, solvent rinsed, glass jars with teflon lined caps.

Groundwater samples were collected following purging of monitoring wells. Samples were placed in vials for organic analysis and filtered in the field prior to storage in glass bottles and plastic bottles (with acid preservative) for metals analysis, and subsequently stored in suitably refrigerated containers.

Attempts were made to collect a groundwater sample from BH 1 and DMMB1, however these wells contained excessive silt, and samples could not be collected. Very strong petroleum hydrocarbon odours were present in well BH1.

The fieldwork was supervised by experienced engineering geologists / geotechnical engineers from Dames & Moore and carried out in accordance with relevant Australian Standards and the Site Specific Health & Safety Plan developed for the investigation. The boreholes and monitoring wells were logged and photo-ionisation detector (PID) screenings carried out on samples collected from each borehole.

In-situ geotechnical tests in the form of vane shear tests and Dynamic Cone Penetrometer (DCP) tests were carried out either within or adjacent to each borehole. A geotechnical evaluation including description of subsurface geology is provided in section 7.

A Site Plan showing locations of sampling sites including boreholes and monitoring wells are shown on the Site Plan - Figure 3. The boreholes were located principally within the building basement areas where it was initially necessary to cut the basement car park concrete slab for drilling. The slab was subsequently re-instated on completion of the investigation fieldwork.

The borehole and monitoring well logs are included in Appendix A for reference. The logs provide sampling details and construction details for the monitoring wells.

6. LABORATORY ANALYSES

Selected samples collected from the investigation fieldwork were submitted for laboratory analyses to Australian Laboratory Services (ALS), a NATA registered laboratory and tracked via Chain of Custody and Sample Analysis Receipt forms.

6.1 LABORATORY TESTING

Testing was conducted on selected soil samples collected from each of the boreholes and monitoring wells, and groundwater samples collected from the monitoring wells. The following analytes were tested:

Organics

- Petroleum hydrocarbons (TPH) and BTEX (benzene, toluene, ethyl-benzene and xylene)
- Polycyclic aromatic hydrocarbons (PAH) and phenols
- Organochlorine and Organophosphate pesticides
- Monocyclic Aromatic Hydrocarbons (MAHs)
- Oxygenated Hydrocarbons
- Fumigants and Sulphonated Compounds
- Halogenated Aliphatic and Aromatic Hydrocarbons

Metals

- Soil and groundwater samples were tested for arsenic, cadmium, chromium, copper, nickel, lead, mercury and zinc.

Laboratory analyses results for soil samples are summarised in Tables 1 and 2. Laboratory analyses results for ground water samples are summarised in Table 3. The Analyses Certificates are included in Appendix B for reference.

6.2 RESULTS OF LABORATORY ANALYSES

Laboratory analyses test results have been compared, where available, to contamination criteria for soil (SCC) and ground water (GCC) as a basis for evaluation. The SCC have been adopted from CHEM Unit (1992) and Imray and Langley (1996). The GCC have been adopted from ANZECC (1992) and criteria devised by the Netherlands government.

6.2.1 Soils - Metals Analyses

The results of metals analyses on soil samples from this investigation are summarised in Table 1. All of the results were below Queensland Government guidelines except for copper in sample BH24-S1 and mercury in sample BH22-S1; neither of these results are considered to pose a risk to human health or the environment.

6.2.2 Soils - Organics Analysis

The results of organics analyses on soil samples from this investigation are summarised in Table 2. Concentrations of petroleum hydrocarbons were below the relevant thresholds in all samples except for sample DMMB2-S3 which contained C₁₀-C₁₄ fractions above the threshold value. This sample was retrieved from beneath and near to the groundwater table. PAHs were detected in sample BH22-S1 but were below threshold values. All other samples contained PAH concentrations below the laboratory's detection limits. None of the other organic compounds analysed were detected in the samples tested.

6.2.3 Groundwater Analyses

Two of the wells (BH4 and DMMB2) were purged and sampled during this investigation. The samples collected from the wells contained petroleum hydrocarbon concentrations below the laboratory detection limit.

Attempts were made to sample groundwater from BH1 and DMMB1, however, these wells contained excessive silt, and groundwater samples could not be collected. Strong hydrocarbon odours and a sheen of petroleum product were noted at BH1. This confirms the hydrocarbon contamination identified at this sampling location from previous investigations.

Results of the metal analyses indicated concentrations of analytes were below the laboratory detection limit level except for chromium; the levels of chromium were below the threshold value.

7. GEOTECHNICAL EVALUATION

A preliminary geotechnical evaluation has been carried out for the subject property based on the results of this investigation. The geotechnical evaluation has been carried out in order to determine likely foundation and excavation conditions in relation to any remedial works which may be undertaken at the property.

7.1 SOIL PROFILES

The soil profile encountered across the property site from this investigation is linked to the site development, in that, basement sections in the north - eastern areas of the site appear to be located in zones of earthworks cut from construction of the development.

The basement slab for 5 Cribb Street is founded on an (imported) sandy base layer immediately overlying weathered phyllite. As a consequence most hand augured boreholes met refusal at relatively shallow depths of between 0.3 to 0.5m at this site. This site appears to coincide predominantly with an area of earthworks cut with the basement slab founded on weathered phyllite. Therefore, it is likely that any contaminated overburden soil at the site has been removed previously during earthworks for construction of the basement.

The depth of overburden soil cover increases beneath the basement slab for 159 Coronation Drive in a southerly direction as the natural ground slopes towards the Brisbane River. The general soil profile underlying the slab, towards the southern corner of this site, comprises an (imported) sandy gravel base layer up to approximately 0.6m thick. This base layer overlies high plasticity, firm to stiff, dark brown / black clay, which grades very moist to wet, and becoming soft to firm at a depth of approximately 2.0m.

The boreholes located outside the building adjacent to Coronation Drive indicate up to approximately 0.8m of loose to medium dense silty sand overlying high plasticity, firm to stiff, dark brown clay.

Groundwater was encountered at standing depths of 3.9m (DMMB1), 1.2m (DMMB2), 3.5m (BH1) and 2.9m (BH4) respectively during this investigation. A summary of groundwater monitoring results to date is presented in Table 4. As previously indicated groundwater flow is towards the Brisbane River and may flow through the fill or alluvium along the weathered phyllite bedrock interface.

7.2 REMEDIATION CONSIDERATIONS

The most appropriate geotechnical design for any remediation works will depend on a combination of the ground conditions and existing building foundation construction. Remediation is considered necessary only in the southern corner of 159 Coronation Drive. It would be necessary for remediation works to extend beneath the basement slab of the building in this area. Hydrocarbon contamination in soil appears to extend a few metres beneath the floor slab. However, as evidenced by some contamination identified in DMMB2 and BH4, contamination in groundwater extends over most of the site. The extent of contamination can be more accurately delineated by further site investigation specifically targeted in this area.

A previously recommended remedial strategy has been outlined in Dames & Moore's report dated October 1996 and entitled *Stage II Contaminated Land Assessment, 159 Coronation Drive, Milton*. The remedial strategy includes the following 3 site tasks:

- Excavation and disposal of petroleum contamination soil to the groundwater level;
- Disposal of petroleum contaminated groundwater; and
- Excavation of TPH and PAH contaminated fill near the front entrance of the building.

This remedial work implies that contaminated soil will require excavation to a depth of 3.5 meters below the existing ground level, and the soil would require disposal at a Brisbane City Council landfill.

7.2.1 Foundations

No foundation construction details for 159 Coronation Drive are available at this stage. However, it is likely that the structural columns are supported by footings that are founded on the underlying weathered phyllite bedrock. The natural bedrock profile appears to mirror the natural topography and slope towards the south-east and may extend to beyond a depth of 7 metres near the intersection of Coronation Street and Cribb Street (BH1).

Since the weathered phyllite bedrock is relatively shallow towards 5 Cribb Street, it is likely that structural columns are founded on pad footings in this area. Since the bedrock profile dips towards the south-east, it is likely a transition in foundation type occurs with structural columns founded on piers towards this end of the site.

Determination of the type of basement floor slab is a key factor for any remediation work related to excavating and removing contaminated soil from the site. The basement slab may be either a slab-on-grade or a suspended slab. It is considered likely to be a ground slab founded on imported granular fill material. If the basement floor slab is a slab-on-grade then any remediation works may be achieved by demolishing this slab, followed by removal and replacement of any contaminated soil. If the slab is a suspended slab then temporary underpinning would be required.

7.2.2 Excavation

Given the complexity of the building configuration, proximity of services, adjacent footpath and general traffic, shoring of any excavation would be necessary. Preliminary evaluation indicates that soldier piles may be the most appropriate method for shoring. The soldier piles would need to be socketed in the underlying phyllite bedrock in order to provide lateral excavation support.

Since dewatering of the excavation would likely entail pumping from the open pit to trade waste, this would also serve to treat some of the groundwater. The effects of pumping on adjoining foundations and slabs will need to be evaluated.

8. CONCLUSIONS

The following conclusions are based on the findings of this further Stage II Site Investigation completed for 159 Coronation Drive and 5 Cribb Street.

8.1 CONTAMINATION

Based on the findings of all the investigations completed to date for the subject property:

- The most significant contamination at the property appears to be restricted to discrete areas of the 159 Coronation Drive and comprise petroleum hydrocarbons as determined from previous investigations. No significant additional contamination was encountered over the remainder of the site. The contamination appears to be sporadic and restricted to along the boundary on the Coronation Drive and Cribb Street intersection at the southern corner of the site.
- Groundwater impacts at the site similarly appear to be restricted to the southern corner near the intersection of Coronation Drive and Cribb Street. Neither of the wells sampled in this program (DMMB1 & BH4) contained contaminant concentrations in excess of the threshold values, although signs of petroleum contamination were evident in wells where contamination has been previously encountered.
- No significant contamination was encountered on the 5 Cribb Street site. It appears that, if the Strata Title of 5 Cribb Street, Milton proceeded, the site would probably not be included on the Contaminated Sites Register (CSR). However, the entire lot and plan will be listed per Queensland Department of Environment (QDOE) policy.

8.2 REMEDIATION PLANNING ISSUES

The remediation programme developed for the land should only affect 159 Coronation Drive and will depend on several inter-related factors including:

- clean-up criteria adopted;
- effectiveness of remediation technology;
- cost of remedial program;
- changes to the end use; and
- acceptability of final outcome to the site owner and regulatory authorities.

8.2.1 Remediation Criteria

Remediation criteria adopted will in turn relate to several factors, including: (1) proposed end use of the site and (2) owner requirements regarding final listing of the site on the CSR. In order to accomplish a 'Former' classification, removal of the contamination may be necessary. 'Restricted' classification would be granted with little action necessary.

8.2.2 Effectiveness and Cost of Remediation Program

Proven technologies within a remediation programme ensure adequate clean-up and minimise validation requirements and costs. This also ensures the methodology or technology is accepted by regulatory authorities. Similarly, the cost effectiveness of the remedial program would need to be assessed to ensure the desired outcome was obtained for the minimal cost.

8.2.3 Acceptability of Final Outcome

Because of the numerous paths that can be taken to remediate the site, different final outcomes may be achieved. These outcomes are reflected in the final classification of the property on the Contaminated Sites Register (CSR). The required outcome for the project, eg. reclassification of an allotment to 'Former' will drive such factors as clean-up criteria and affect such things as cost and remedial technologies adopted.

8.3 COST ESTIMATES FOR STAGES IV TO V

Although the contamination plume has not migrated significantly under the existing building basement slab of the existing building, further investigation is recommended in order to more accurately define the extent of contamination and hence enable more accurate remediation design and cost estimates

Estimated costs for Stage IV Remediation are currently being evaluated pending confirmation of structural details for the existing building. This work will involve detailed consultation between the site owners and authorities, both state and local, to determine suitable clean-up criteria, and effective site remediation and technologies and the final outcome. The site would require Stage V Validation to be completed prior to re-classification of the site to 'Former'.

9.0. LIMITATIONS OF REPORT

This report has been prepared in a form suitable for submission to Resolve Engineering Pty Ltd as the client and the Director - Hazardous Waste and Contaminated Sites Section of the Department of the Environment. The report relates to the land described by Lot 23 on RP193152 and describes the results of a Stage II Site Investigation of that land carried out by Dames and Moore at the request of the client.

Previous Investigations and reports conducted on the site have been authorised for use by the previous commissionaires and form a part of and background to this report. These limitations are extended to the use of the previous reports.

The report has been prepared with reference to the *Guidelines for the Assessment of Contaminated Land in Queensland* (CHEM Unit, January 1992), and to a standard consistent with generally accepted and current professional consulting practice for an Environmental Site Assessment of prescribed land in Queensland. No other warranty, expressed or implied, is made as to the contents of the report.

This report has not been prepared for the use by parties other than the client and the Director, Queensland Department of Environment, and their respective consulting advisers. It may not contain sufficient information for purposes of other parties or for other uses.

It is recommended that any plans and specifications prepared by others and relating to the content of this report or amendments to the original plans and specifications be reviewed by Dames & Moore to verify that the intent of our recommendations is properly reflected in the design.

Whilst to the best of our knowledge information contained in this report is accurate at the date of issue, subsurface conditions including groundwater levels and contaminant concentrations can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There are always some variations in subsurface conditions across a site, which cannot be fully defined by investigation. Hence it is unlikely that the measurements and values obtained from sampling and testing during the investigation will represent the extremes of conditions which exist within the site.

Use of the land for any purpose whatsoever subsequent to the preparation of the investigation reported herein is beyond the control of Dames & Moore, and as a result may affect or invalidate the conclusions presented in this report.

Respectfully submitted
Dames & Moore

Joel Farrier
Principal
Geoscience and Engineering

Geoff Perryman
Consultant
Geoscience and Engineering

10.0 REFERENCES

ANZECC (Australian and New Zealand Environment and Conservation Council) (1992) "Australian Water Quality Guidelines for Fresh and Marine Waters", November.

CHEM Unit (Chemical Hazards and Emergency Management Unit) (1992) "Guidelines for the Assessment of Contaminated Land in Queensland", Bureau of Emergency Services, January.

Imray, P, and Langley, A, (1996) "Health-Based Soil Investigation Levels", National Environmental Health Foun Monographs, Soil Series No.1.

Taylor, R, and Langley, A, (1996) "Exposure Scenarios and Exposure Settings" in Markey, BR, and Langley, AJ, (eds) "The Health Risk Assessment and Management of Contaminated Sites: Proceedings of the Third National Workshop on the Health Risk Assessment and Management of Contaminated Sites", Contaminated Sites Monograph Series No.5.

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TABLES

TABLE 1
SUMMARY OF SOIL SAMPLE RESULTS
INORGANIC ANALYSIS

Sample No. Units	Date dd/mm/yyyy	From m	To m	Arsenic mg/kg	Cadmium mg/kg	Chromium mg/kg	Copper mg/kg	Nickel mg/kg	Lead mg/kg	Zinc mg/kg	Mercury mg/kg
SCC				20	3	50	60	60	300	200	1.0
DMMB1-S1	6/10/97	0.4	0.6	5	<1	14	18	7	61	66	0.2
DMMB1-S2	6/10/97	0.9	1.1	3	<1	13	13	9	35	55	0.1
DMMB1-S6	6/10/97	2.9	3.1	2	<1	4	14	3	14	20	<0.1
DMMB1-S7	6/10/97	3.4	3.6	2	<1	15	15	6	11	27	<0.1
DMMB1-S9	6/10/97	4.4	4.6	2	<1	14	15	5	11	34	<0.1
DMMB1-S10	6/10/97	5.4	5.6	2	<1	9	17	10	17	45.0	<0.1
BH12-S1	2/10/97	0.2	0.4	1	<1	8	9	12	17	40	<0.1
BH13-S1	2/10/97	0.3	0.5	2	<1	4	10	6	6	28	<0.1
BH14-S1	2/10/97	0.2	0.3	2	<1	2	6	3	14	23	<0.1
BH15-S1	2/10/97	0.3	0.3	2	<1	18	15	10	34	40	<0.1
BH16-S1	2/10/97	0.2	0.4	5	<1	9	11	12	17	40	<0.1
BH20-S1	6/10/97	0.3	0.5	3.0	<1	2	13	3	8	9	<0.1
BH20-S2	6/10/97	0.9	1.0	2	<1	5	10	4	9	10	<0.1
DMMB2-S2	6/10/97	0.9	1.0	4	<1	17	19	14	9	20	<0.1
DMMB2-S3	6/10/97	1.4	1.5	7	<1	29	18	16	21	30	<0.1
DMMB2-S4	6/10/97	1.9	2.0	9	<1	28	12	18	20	30	<0.1
DMMB2-S6	6/10/97	2.9	3.0	6	<1	13	6	12	10	22	0.1
DMMB2-S9	6/10/97	4.9	5.0	7	<1	22	14	10	18	36	<0.1
BH17-S1	3/10/97	0.4	0.4	33	<1	14	44	2	10	3	<0.1
BH17-S2	3/10/97	0.7	0.9	3	<1	24	9	11	14	19	<0.1
BH17-S4	3/10/97	1.3	1.4	7	<1	18	5	9	13	17	<0.1
BH18-S1	3/10/97	0.4	0.4	10	<1	7	30	3	6	6	<0.1
BH18-S2	3/10/97	0.5	0.7	3	<1	27	13	19	15	28	<0.1
BH18-S4	3/10/97	1.5	1.8	1	<1	17	8	17	12	22	<0.1
BH19-S3	7/10/97	1.4	1.5	2	<1	14	7	10	10	16	<0.1
BH21-S1	6/10/97	0.4	0.5	2	1	12	12	9	57	171	<0.1
BH21-S3	6/10/97	1.2	1.3	4	3	32	19	19	48	111	0.4
BH22-S1	6/10/97	0.4	0.5	12	3	31	33	16	213	157	1.4
BH22-S2	6/10/97	0.9	1.0	3	4	32	19	20	44	79	0.2
BH22-S3	6/10/97	1.4	1.5	3	4	40	18	23	28	94	0.4
BH23-S2	6/10/97	0.9	1.0	4	2	24	26	15	50	79	0.4
BH23-S3	6/10/97	1.4	1.5	2	3	36	13	19	12	40	<0.1
BH24-S1	7/10/97	0.5	0.5	25	1	12	89	4	14	11	<0.1
BH24-S4	7/10/97	1.4	1.6	1	2	26	11	16	5	32	<0.1

Notes:

1. SCC - Soil Contamination Criteria
2. Shaded boxes exceed SCC
3. Response Level based on a - Imray & Langley, 1996 (use "F" Industrial) or b - MDEP MCP Level for Soil Type S2 + Groundwater Type GW2/GW3
4. Black boxes exceed Response Levels

TABLE 2
SUMMARY OF SOIL SAMPLE RESULTS
ORGANIC ANALYSES

Sample No.	Date	From	To	C ₆ - C ₉	C ₁₀ - C ₁₄	C ₁₅ - C ₂₈	C ₂₉ - C ₃₆	Benzene	Toluene	Chloro benzene	Ethyl benzene	Xylene	Phenols	PAHs	OC/OP Pesticides	MAHs	Halogenated Hydrocarbons	Fumigants	Oxygenated Hydrocarbons	Sulphonated Compounds
Units	dd/mm/yyyy	m	m	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SCC				100	100	1,000	1,000	1	1	1	1	1	10	20	2	7				
Response Level				500 _b	2,500 _b	2,500 _b	5,000 _b	60 _b	500 _b	40 _b	500 _b	500 _b								
DMMB1-S2	6/10/97	0.9	1.1	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<LOR	<LOR		<LOR	<LOR	<LOR	<LOR	
DMMB1-S6	6/10/97	2.9	3.1	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<LOR	<LOR		<LOR	<LOR	<LOR	<LOR	
DMMB1-S7	6/10/97	3.4	3.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB1-S9	6/10/97	4.4	4.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB1-S10	6/10/97	5.4	5.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH12-S1	2/10/97	0.2	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH13-S1	2/10/97	0.3	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH14-S1	2/10/97	0.2	0.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH15-S1	2/10/97	0.3	0.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	
BH16-S1	2/10/97	0.2	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH20-S1	6/10/97	0.3	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH20-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB2-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB2-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB2-S4	6/10/97	1.9	2.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB2-S6	6/10/97	2.9	3.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
DMMB2-S9	6/10/97	4.9	5.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH17-S1	3/10/97	0.4	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH17-S2	3/10/97	0.7	0.9	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH17-S4	3/10/97	1.3	1.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH18-S1	3/10/97	0.4	0.4	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH18-S2	3/10/97	0.5	0.7	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH18-S4	3/10/97	1.5	1.8	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH19-S3	7/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH21-S1	6/10/97	0.4	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH21-S3	6/10/97	1.2	1.3	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH22-S1	6/10/97	0.4	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4	<LOR	<LOR		<LOR	<LOR	<LOR	<LOR	
BH22-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH22-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH23-S2	6/10/97	0.9	1.0	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH23-S3	6/10/97	1.4	1.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH24-S1	7/10/97	0.5	0.5	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								
BH24-S4	7/10/97	1.4	1.6	<2	<50	<100	<100	<2	<2	<2	<2	<0.4								

Notes:
1. SCC - Soil Contamination Criteria
2. Shaded boxes exceed SCC
3. Response Level based on a - Imray & Langley, 1996 (use 'F' Industrial) or
b - MDEP MCP Level for Soil Type S2 + Groundwater Type GW2/GW3
4. Black boxes exceed Response Levels

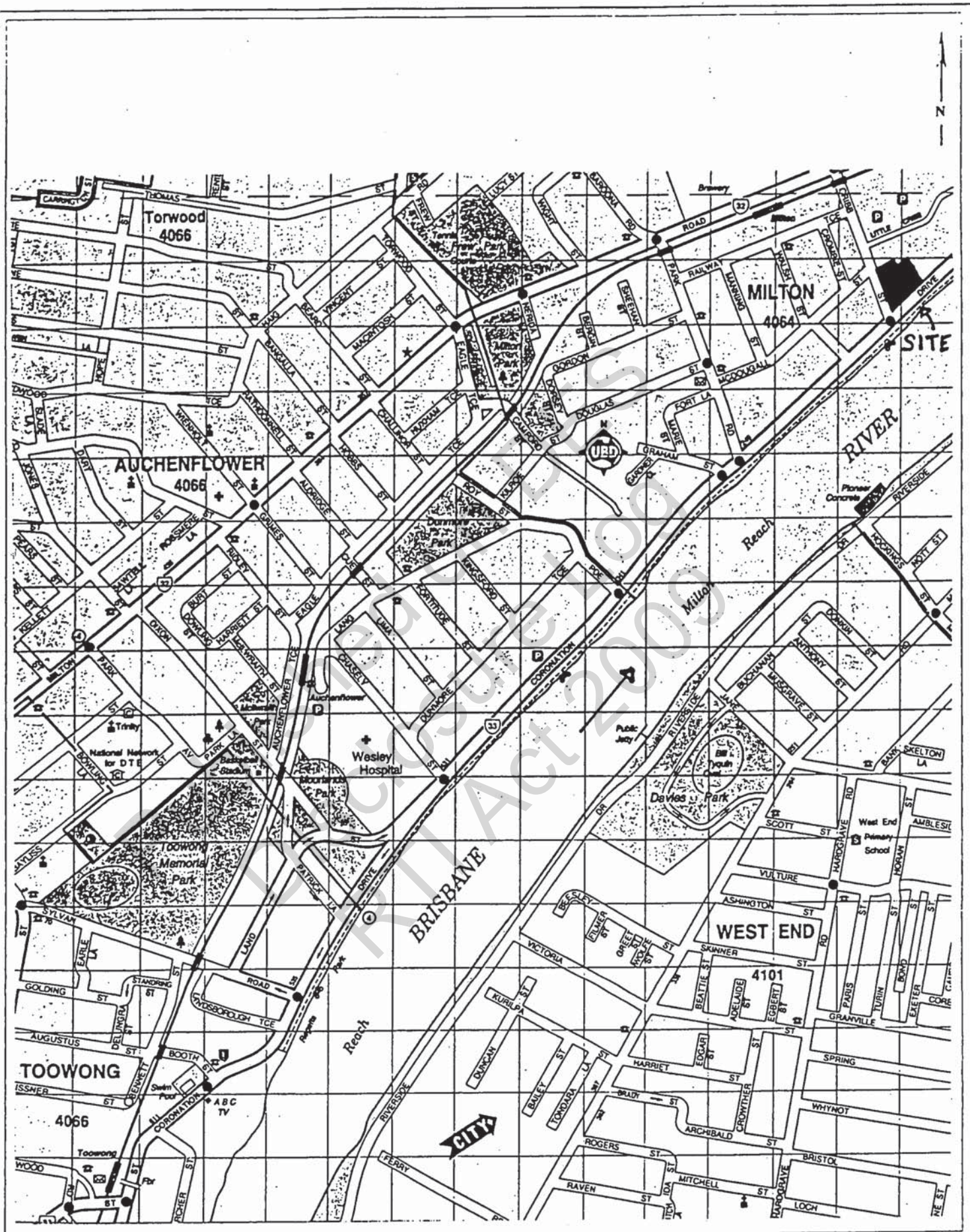
TABLE 3
SUMMARY OF GROUNDWATER SAMPLING RESULTS

Sample No.	Date	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury	C6 - C9	C10 - C14	C15 - C28	C29 - C38	Benzene	Toluene	Chloro benzene	Ethyl benzene	Xylene
Units	dd/mm/yyyy	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
GCC		0.050	0.002	0.050	0.005	0.015	0.005	0.050	0.0001	1 _a	1 _a	50 _a	50 _a	0.3	0.3	0.025	0.7 _a	6 _a
DMMB2	17/10/97	<0.001	<0.005	0.030	<0.01	0.010	<0.001	<0.01	<0.0005	<20	<50	<100	<50	<1	<2	<2	<2	<4
BH4	17/10/97	<0.001	<0.005	0.030	<0.01	<0.01	<0.001	<0.01	<0.0005	<20	<50	<100	<50	<1	<2	<2	<2	<4

Note : Shaded boxes exceed GCC - ANZECC (1992 Australian and New Zealand Environment and Conservation Council- Australian Water Quality Guidelines for the Protection of Marine Aquatic Ecosystems Except: _a - Massachusetts DEP MCP Groundwater Levels (Lowest of GW2,GW3)

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FIGURES



Source: Universal Press Pty Ltd

Resolve Engineering
 Stage II Site Investigation
 159 Coronation Drive & 5 Cribb St, Milton
 SITE LOCATION PLAN

1:10,000

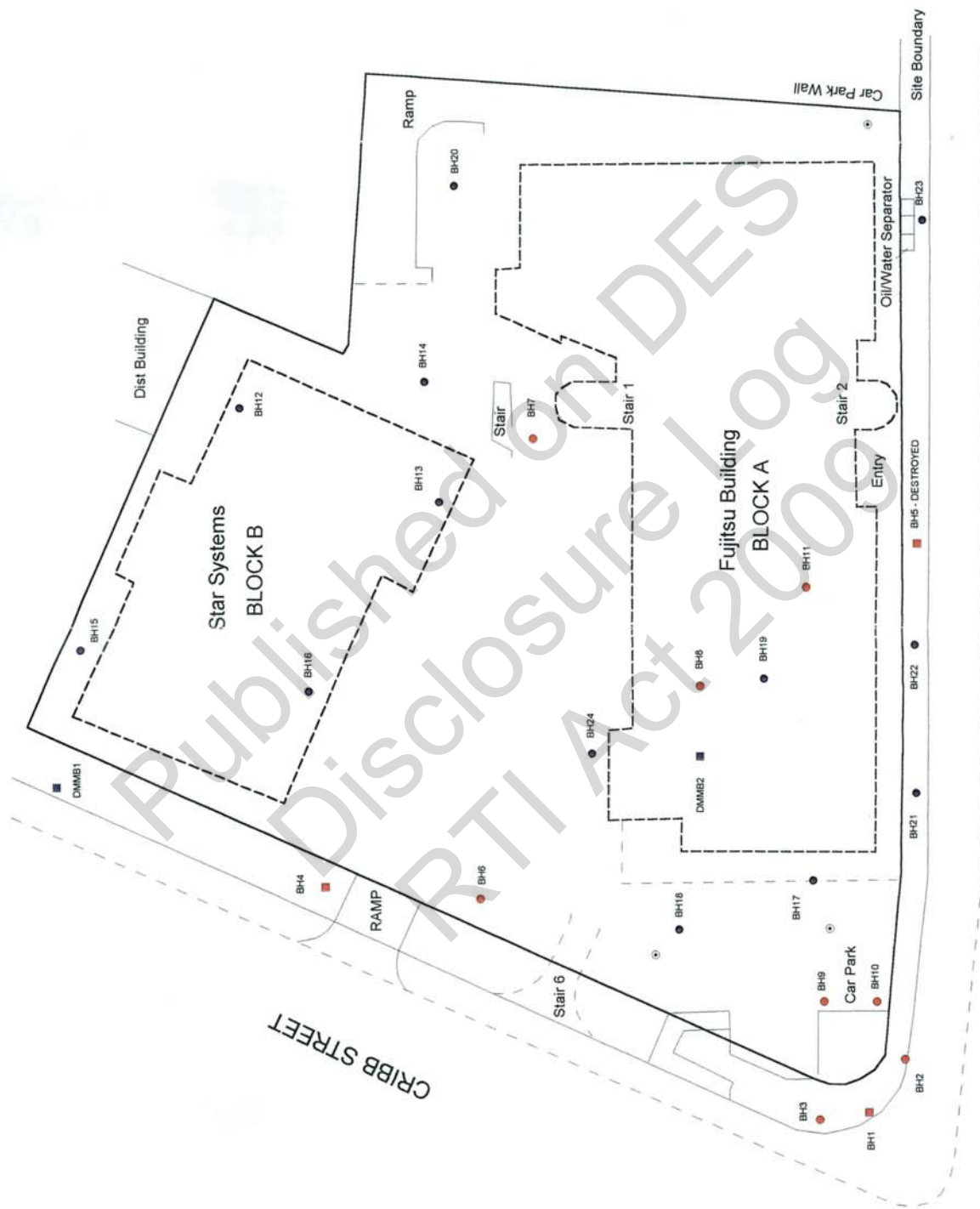
Figure 1

Date: 24/11/97

33287-005-358

DocId: 34567890 Printed: Fri Jun 23 13:41:41 1994

N



CORONATION DRIVE



Hand Auger Hole - Peter Kurts
Monitoring Bore - Peter Kurts
Hand Auger Hole - Resolve
Monitoring Hole - Resolve
Fresh Air Intake



Resolve Engineering
Stage II Site Investigation
159 Coronation Drive & 5 Cribb St, Milton
SIT PLAN AND SAMPLING LOCATIONS
Revision 1
24/11/07
Figure 3
33287-005-074

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APPENDIX A

BOREHOLE LOGS AND MONITORING WELL CONSTRUCTION

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

BORE No. DMMB1

SHEET 1 OF 1

CLIENT: RESOLVE ENGINEERING PTY LTD

DRILLING RIG: Pioneer 60

BORE STATUS

CO-ORD'S OF COLLAR

R.L. OF COLLAR

DATUM

DRILLING METHOD: SOLID FLT AUGER 80mm dia.

MONITORING BORE

N:
E:

TOTAL DRILLED DEPTH (m) 5.7
TOTAL CASSED DEPTH (m) 5.7
MINIMUM CASING DIAMETER (mm) 50
MINIMUM SCREEN DIAMETER (mm) 50

STATIC WATER LEVEL (m btoc)
DATE OF MEASUREMENT
OPEN INTERVAL (m bgl) 3
CONDUCTIVITY (uS/cm @25 deg C)

ADDITIONAL NOTES

UNIFIED SYMBOL

SAMPLE SYMBOL/CORE RUN

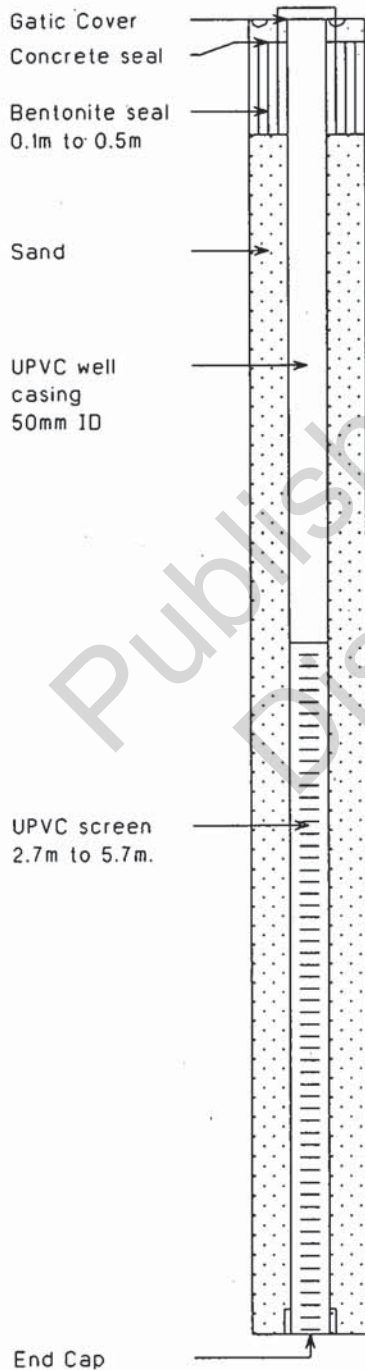
SAMPLE No.

PID READING (ppm) Peak

PID READING (ppm) Static

RL (m)

SCHEMATIC BORE CONSTRUCTION



GRAPHIC LOG
DEPTH (m)

LITHOLOGICAL DESCRIPTION

SILTY SAND with fine grained gravel, brown, medium dense to dense, fine to coarse grained, dry to damp, rootlets, no hydrocarbon odour, no visual contamination.

SILTY SANDY GRAVEL, yellowy brown, medium dense to dense, fine grained quartzose gravel lenses and excavated phyllite, strong 'earthy' odour, no hydrocarbon odour, dry.

Check PID calibration, ok.
Background=0ppm.

WEATHERED PHYLLITE, silty powdery drill returns, yellowy brown, dry.

Refusal at 5.7m.

SM

GM

1

2

3

4

5

6

7

8

9

10

8.0

38.0

68.9

59.9

48.2

37.4

20.0

7.5

35.6

60.5

50.0

43.2

34.8

19.2

26.6

25.0

Data: CORDMMB1
Script: WELLOIA3

BORE COMPLETION REPORT

JOB No. 33287-005-074	DATE
LOGGED BY LBH	-
APPROVED BY 18-xxx	16/22/1991



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

BORE No. DMMB2

SHEET 1 OF 1

CLIENT : RESOLVE ENGINEERING PTY LTD

DRILLING RIG : Pioneer 80

BORE STATUS

CO-ORD'S OF COLLAR

R.L. OF COLLAR

DATUM

DRILLING METHOD : SOLID FLT AUGER 80mm dia.

MONITORING BORE

N :

E :

TOTAL DRILLED DEPTH (m) 5.0

STATIC WATER LEVEL (m, btoc)

TOTAL CASED DEPTH (m) 5.0

DATE OF MEASUREMENT

MINIMUM CASING DIAMETER (mm) 50

OPEN INTERVAL (m, bgl) 3

MINIMUM SCREEN DIAMETER (mm) 50

CONDUCTIVITY (uS/cm @25 deg C)

ADDITIONAL NOTES

UNIFIED SYMBOL

SAMPLE SYMBOL/CORE RUN

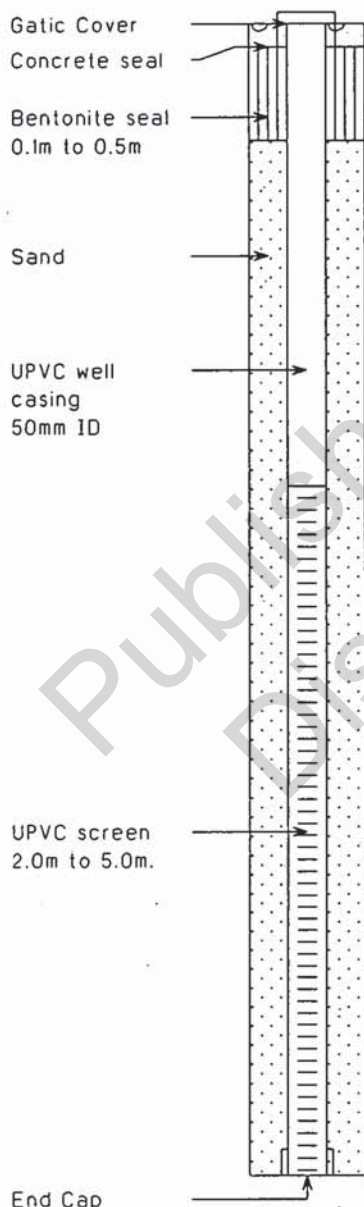
SAMPLE No.

PID READING (ppm) Peak

PID READING (ppm) Static

R.L. (m)

SCHEMATIC BORE CONSTRUCTION



GRAPHIC LOG

DEPTH (m)

LITHOLOGICAL DESCRIPTION

SANDY GRAVEL with silty and clay, yellowy brown, medium dense, fine to coarse grained, quartzose.

GH

1

5.0

4.8

CLAY, black/ dark brown, firm, high plasticity, moist, no hydrocarbon odour, no visual contamination.

2

6.7

3.1

Moderate hydrocarbon odour (HCO).

3

99.1

85.2

No HCO.

4

34.9

30.7

Grades dark brown and brown.

5

6.5

6.3

Wet.

CH

6

30.9

30.2

Grades olivey brown.

7

31.4

18.5

Vs=32kPa

8

10.6

9.4

Vs=30kPa

9

7.8

7.6

End of Hole at 5.0m.
Vs=20kPa

Data : CORDMMB2
Script : WELLOIA3

BORE COMPLETION REPORT

JOB No. 33287-005-074	DATE
LOGGED BY LBH	-
APPROVED BY 18 xxx	10/22/97



DAMES & MOORE PTY LTD

GROUP A DAMES & MOORE COMPANY

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH12.

CLIENT: RESOLVE ENGINEERING PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

BARREL TYPE: 100mm Dia/50mm Dia.

BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL (m)
	CONCRETE, 130mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	SANDY SILT with gravel, medium brown, moist, soft, low plasticity, fine to coarse grained sand, trace clay. <5%Cl, 65%M, 25%S, 5%G.	ML								10	DCP 10/50mm.	
	Refusal at 0.3m on weathered Phyllite.											

DRILLING COMPANY: Dames & Moore
DRILLER: Sean Murphy

DATE/TIME COMMENCED: 02OCT97 13.30
DATE/TIME COMPLETED: 02OCT97 14.05

data: COR0BH12

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY SFM	10/20/1997
APPROVED BY 	10/22/1997
REVISION No	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH13

SHEET 1 OF 1

CLIENT : RESOLVE ENGINEERING PTY LTD

DRILLING RIG : HAND AUGER

BARREL TYPE : 100mm Dia/50mm Dia.

BIT TYPE :

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL. (m)
	CONCRETE, 130mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	SANDY SILT with angular gravel, medium brown, dry, soft, low plasticity, fine to coarse grained sand, trace clay.	ML								5		
										6		
										10		
											DCP 10/80mm.	
	Refusal at 0.45m on weathered Phyllite.			.5								
				1.5								

data : COROBH13

script : SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY SFM	10/20/1997
APPROVED BY <i>q</i>	10/22/1997
REVISION No	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH14

CLIENT: RESOLVE ENGINEERING PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES

WATER DEPTH

DATUM

BARREL TYPE: 100mm Dia/50mm Dia.

BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL (m)
	CONCRETE, 170mm thick.										G(T)=Glass Jar with Teflon Lined Lid.	
	SANDY SILT with gravel, medium brown, dry, soft, low plasticity, fine to coarse grained sand, trace clay. <5% C, 60% M, 30% S, 5% G.	ML				X	G(T) 1	0	0	10	DCP 10/60mm.	
	Refusal at 0.28m on weathered Phyllite.											

DRILLING COMPANY: Dames & Moore
DRILLER: Sean Murphy

DATE/TIME COMMENCED: 02OCT97 15:20
DATE/TIME COMPLETED: 02OCT97 15:50

data: COR09H14

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY SFM	10/20/1997
APPROVED BY 	10/22/1997
REVISION No 18-xxx	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH15

CLIENT: RESOLVE ENGINEERING PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

BARREL TYPE: 100mm Dia/50mm Dia.

BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL (m)
	CONCRETE, 155mm thick.										G(T)=Glass Jar with Teflon Lined Lid.	
	CLAYEY SILT, olive brown & black, soft, low plasticity, moist, occasional gravel to 40mm.	ML								7		
	CLAY with silt and sand, brown and black, soft, high plasticity, possible hydrocarbon staining, no odour, moist.	CH				X	G(T) 1	87	85.4	2		
	SILTY SANDY CLAY, orangey brown, medium dense, fine to coarse grained, subangular to angular, moist.	SH								10		
	Refusal at 0.41m on weathered Phyllite.			.5							DCP 10/70mm.	
				1.5								

data: COROBH15

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY <i>AP</i>	16/22/1997
REVISION No 18 xxx	



DAMES & MOORE PTY LTD

GROUP A DAMES & MOORE COMPANY

BOREHOLE LOG

BOREHOLE LOG

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH17

SHEET 1 OF 1

CLIENT : RESOLVE ENGINEERING PTY LTD

DRILLING RIG : HAND AUGER

BARREL TYPE : 100mm Dia/50mm Dia.

BIT TYPE :

HOLE
DIRECTION
VERT. *

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES

N:

E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL (m)
	CONCRETE, 140mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	SANDY GRAVEL with silt and clay, yellowy brown, medium dense, dry to slightly moist, fine to coarse grained, subangular to angular gravel, typically blue quartz.	GW									DCP start at 0.23m at 12.35pm.	
				.5						6		
	Becoming moist.					X	G (T) 1	5.2	4.8	9		
										7		
										3		
	CLAY, black, firm, high plasticity, moist. No Hydrocarbon odour.	CH									Change to 50mm Jarod auger.	
	Grades dark brown, slightly moist.					X	G (T) 2	3.6	3.3	3	Vs=52kPa.	
										3		
										4		
				1						4		
						X	G (T) 3	2.6	2.4	4	Vs=44kPa.	
										4		
										4		
	Grades brown/ dark brown.					X	G (T) 4	6.4	6.0	4		
										4		
	End of Hole at 1.45m.			1.5						5	Vs=54kPa.	
										7		
										8		

data : COR0BH17

script : SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY	16/22/1997
REVISION No	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH18

SHEET 1 OF 1

CLIENT : RESOLVE ENGINEERING PTY LTD

DRILLING RIG : HAND AUGER

BARREL TYPE : 100mm Dia/50mm Dia.

BIT TYPE :

HOLE
DIRECTION
VERT. :

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N :
E :

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DOP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	R.L. (m)
	CONCRETE, 150mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	SANDY GRAVEL, yellowy brown, medium dense, slightly moist, fine to coarse grained, subangular to angular gravel, typically blue quartz. No hydrocarbon odour, no visual contamination.	GW								9		
	Faint hydrocarbon odour, no visual contamination.									16		
										14		
										6	Change to 50mm Jarod auger.	
	CLAY, black grading to dark brown/brown within 100mm, firm, high plasticity, moist becoming slightly moist. Black appears to be hydrocarbon staining, faint hydrocarbon odour.	CH		.5						3		
	Grades brown, becoming stiff.									3	Vs=40kPa.	
										2		
										2		
				1						2		
	Becoming moist.									3	Vs=58kPa.	
										2		
										3		
										6		
				1.5						6	Vs=76kPa.	
	End of Hole at 1.58m.											

DRILLING COMPANY : Dames & Moore
DRILLER : Lachlan Heath

DATE/TIME COMMENCED : 03OCT97 13.30
DATE/TIME COMPLETED : 03OCT97 15.20

data : COROBH18

script : SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY	10/22/1997
REVISION No	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH19

SHEET 1 OF 1

CLIENT : RESOLVE ENGINEERING PTY LTD

DRILLING RIG : HAND AUGER

BARREL TYPE : 100mm Dia/50mm Dia.

BIT TYPE :

HOLE
DIRECTION
VERT. *

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES

N:

E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL (m)
	CONCRETE, 145mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	SANDY GRAVEL, with silt and trace clay, light brown, medium dense to dense, fine grained with occasional coarse grained fragments, gravel typically blue quartzose roadbase, some phyllite, moist. No visual contamination, no hydrocarbon odour.	GW		.5		X	G (T) 1	0	0	5	DCP test abandoned: flight going into disturbed soil (auger hole).	
										3		
	CLAY, brown to dark brown, firm, medium plasticity, slightly moist.	CI		1		X	G (T) 2	0	0		Change to 50mm Jarod auger.	
											Vs=126kPa.	
				1.5		X	G (T) 3	0	0		Vs=93kPa.	
	End of Hole at 1.5m.											

data : COROBH19

script : SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY <i>LBH</i>	10/22/1997
REVISION No.	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH20

SHEET 1 OF 1

CLIENT: RESOLVE ENGINEERING PTY LTD

DRILLING RIG: Pioneer 60

BARREL TYPE: Solid fit auger 80mm dia.

BIT TYPE: TC

HOLE
DIRECTION
VERT.°

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL. (m)
	CONCRETE, 130mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	WEATHERED PHYLLITE, light yellowy brown, dry, some blue/white quartz gravel.										No DCP attempted - refusal.	
				.5	X	G (T)	1	4.6	4.5			
	Slow drilling.				X	G (T)	2	29.0	20.8		Auger bit hot, PID reading probably from heat generated.	
	Refusal at 1.0m.			1								
				1.5								

DRILLING COMPANY: Geoprobe

DRILLER: Simon Lewis

DATE/TIME COMMENCED: 06OCT97 12:00

DATE/TIME COMPLETED: 06OCT97 12:20

data: COR0BH20

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY <i>LBH</i>	10/22/1997
REVISION No 18-xxx	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH22

SHEET 1 OF 1

CLIENT: RESOLVE ENGINEERING PTY LTD

DRILLING RIG: Pioneer 60

BARREL TYPE: Solid fit auger 80mm dia.

BIT TYPE: TC

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	R.L. (m)
	SILTY SAND with gravel, brown, loose to medium dense, fine to coarse grained, moist, fill. Quartz gravel, occasional pieces of coke/coal. No hydrocarbon odour, no visual contamination.	SM								3	G (T)=Glass Jar with Teflon Lined Lid.	
										7		
										9		
										12		
				.5	X	G (T)	1	13.1	11.8	10		
										13		
	SANDY CLAY, brown, soft to firm, medium plasticity, moist, occasional orange patches.	CI								18		
										8		
										8		
				1	X	G (T)	2	21.4	19.6	3	Vs=52kPa.	
										2		
										4		
										4		
										2		
				1.5	X	G (T)	3	16.4	13.0	3	Vs=59kPa.	
	End of Hole at 1.5m.											

DRILLING COMPANY: Geoprobe
DRILLER: Simon Lewis

DATE/TIME COMMENCED: 06OCT97 15:25
DATE/TIME COMPLETED: 06OCT97 15:40

data: COROBH22

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY 	10/22/1997
REVISION No 18-xxx	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT: STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH23

SHEET 1 OF 1

CLIENT: RESOLVE ENGINEERING PTY LTD

DRILLING RIG: Pioneer 60

BARREL TYPE: Solid fit auger 80mm dia.

BIT TYPE: TC

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES
N:
E:

WATER DEPTH

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	RL. (m)
SM	SILTY SAND, dark brown, loose to medium dense, fine to medium grained, organic matter throughout (topsoil). No hydrocarbon odour, no visual contamination. Some coke/coal fragments.	SM		.5						1	G (T)=Glass Jar with Teflon Lined Lid. Hole adjacent to old oil trap (1.1m deep).	
										2		
										2		
										5		
										12		
										12		
										6		
										3		
										1		
										2		
CI	SANDY CLAY, brown, soft to firm, medium to high plasticity, coke/ coal fragments throughout, moist. Grades brown and dark brown, very moist. Grades dusky brown.	CI		1			G (T)	2	31.5	15.9	Vs=57kPa.	
	End of Hole at 2.0m.			1.5			G (T)	3	12.0	4.4	Vs=64kPa.	
											Vs=42kPa.	

data: COR0BH23

script: SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY <i>B</i>	10/22/1997
REVISION No	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

PROJECT : STAGE II CONTAMINATED SITE INVESTIGATION
5 CRIBB ST & 159 CORONATION DRIVE, BRISBANE

HOLE No. BH24

CLIENT : RESOLVE ENGINEERING PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT.

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORDINATES

WATER DEPTH

DATUM

BARREL TYPE: 100mm Dia/50mm Dia.

BIT TYPE:

N:
E:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No./RUN No.	PID READING (ppm) PEAK	PID READING (ppm) STATIC	DCP BLOWCOUNT	LABORATORY TESTS AND ADDITIONAL NOTES	R.L. (m)
	CONCRETE, 110mm thick.										G (T)=Glass Jar with Teflon Lined Lid.	
	GRAVEL with sand and silt, light brown, medium dense to dense, moist to wet, fine grained, subangular to angular gravel, typically blue quartz.	GW								10	DCP abandoned: flight going into auger hole (disturbed soil).	
	Very faint hydrocarbon odour?							0	0			
	No hydrocarbon odour.											
				.5		X	G (T) 1	0	0			
	CLAY with trace sand, dark brown, soft to firm, high plasticity, very moist, no hydrocarbon odour, no visual contamination.	CH									Change to 50mm Jarod auger.	
	Becoming firm.										Vs=74kPa.	
				1		X	G (T) 3	0	0			
											Vs=96kPa.	
				1.5		X	G (T) 4	0	0			
											Vs=92kPa.	
	End of Hole at 1.55m.											

data : COR0BH24

script : SOILPID3

JOB No. 33287-005-074	DATE
LOGGED BY LBH	10/20/1997
APPROVED BY <i>q</i>	10/22/1997
REVISION No 18-xxx	



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

BOREHOLE LOG

Published on DES
Disclosure Log
RTI Act 2009

APPENDIX B

ANALYTICAL DOCUMENTATION



AUSTRALIAN LABORATORY SERVICES P/L

A.C.N. 009 936 029

816-977-9958

ANALYTICAL REPORT

PAGE 1 of 4

CONTACT: s78(B)(2)
CLIENT: JAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL

DBM BBN	REG NO:			
DATE: 03-10-97	TO: GEP			
NAME	INFO	ACTION	COPY	LABORATORY: ENV BRISBANE
				BATCH NUMBER: EB11348
				SUB BATCH: 0
				No. OF SAMPLES: 34
				DATE RECEIVED: 14/10/97
				DATE COMPLETED: 22/10/97
FILE NO:	4004			

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	Moisture % EA-055 0.1	As mg/kg EG-005T 1	Cd mg/kg EG-005T 1	Cr mg/kg EG-005T 1	Cu mg/kg EG-005T 1	Ni mg/kg EG-005T 1
DMMB1-S1	0.4-0.6m 06/10	12.5	5	<1	14	18	7
IMB1-S2	0.9-1.1m 06/10	9.2	3	<1	13	13	9
IMB1-S6	2.9-3.1m 06/10	8.2	2	<1	4	14	3
DMMB1-S7	3.4-3.6m 06/10	5.9	2	<1	15	15	6
IMB1-S9	4.4-4.6m 06/10	5.2	2	<1	14	15	5
IMB1-S10	5.4-5.6m 06/10	4.6	2	<1	9	17	10
I12-S1	0.15-0.35m 02/	8.4	1	<1	8	9	12
BH13-S1	0.30-0.48m 02/	11.5	2	<1	4	10	6
I14-S1	0.18-0.28m 02/	7.7	2	<1	2	6	3
I15-S1	0.25-0.30m 02/	18.5	2	<1	18	15	10
BH16-S1	0.20-0.35m 02/	11.0	5	<1	9	11	12
I20-S1	0.30-0.50m 06/	7.5	3	<1	2	13	3
I20-S2	0.90-1.00m 06/	3.3	2	<1	5	10	4
DMMB2-S2	0.9-1.0m 06/10	18.8	4	<1	17	19	14
DMMB2-S3	1.4-1.5m 06/10	18.0	7	<1	29	18	16
IMB2-S4	1.9-2.0m 06/10	19.5	9	<1	28	12	18
IMB2-S6	2.9-3.0m 06/10	22.8	6	<1	13	6	12
DMMB2-S9	4.9-5.0m 06/10	28.5	7	<1	22	14	10
I17-S1	0.35-0.40m 03/	5.8	33	<1	14	44	2
I17-S2	0.65-0.85m 03/	19.4	3	<1	24	9	11
BH17-S4	1.30-1.40m 03/	18.6	7	<1	18	5	9
I18-S1	0.35-0.40m 03/	5.7	10	<1	7	30	3
I18-S2	0.50-0.65m 03/	20.3	3	<1	27	13	19
BH18-S4	1.50-1.58m 03/	19.0	1	<1	17	8	17
BH19-S3	1.40-1.50m 07/	18.1	2	<1	14	7	10
I21-S1	0.40-0.50m 06/	10.6	2	1	12	12	9
I21-S3	1.20-1.25m 06/	16.4	4	3	32	19	19
BH22-S1	0.40-0.50m 06/	10.8	12	3	31	33	16
I22-S2	0.90-1.00m 06/	17.0	3	4	32	19	20
I22-S3	1.40-1.50m 06/	20.3	3	4	40	18	23

COMMENTS:

Samples as received digested by USEPA method 3051 prior to the determination of metals. Results reported on a dry weight basis. This report supersedes any previous preliminary reports of the same batch number.

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* Results apply to sample(s) as submitted by client.

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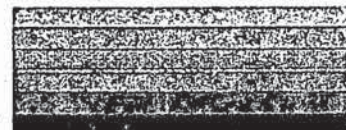
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All pages of this report have been checked and approved for release.

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ANALYTICAL REPORT

PAGE 2 of 4

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 0
No. OF SAMPLES: 34
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	Moisture % EA-055 0.1	As mg/kg EG-005T 1	Cd mg/kg EG-005T 1	Cr mg/kg EG-005T 1	Cu mg/kg EG-005T 1	Ni mg/kg EG-005T 1
3H23-S2	0.90-1.00m 06/	17.8	4	2	24	26	15
123-S3	1.40-1.50m 06/	16.8	2	3	36	13	19
124-S1	0.45-0.50m 07/	5.8	25	1	12	89	4
3H24-S4	1.40-1.55m 07/	19.7	1	2	26	11	16
Published On Disclosure Log RTI Act 2009							

COMMENTS:



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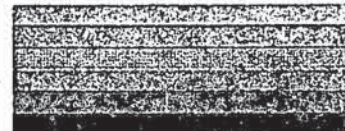
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ANALYTICAL REPORT

PAGE 3 of 4

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS:

P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 0
No. OF SAMPLES: 34
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	Pb mg/kg EG-005T 1	Zn mg/kg EG-005T 1	Hg mg/kg EG-020T 0.1			
DMMB1-S1	0.4-0.6m 06/10	61	66	0.2			
MB1-S2	0.9-1.1m 06/10	35	55	0.1			
MB1-S6	2.9-3.1m 06/10	14	20	<0.1			
DMMB1-S7	3.4-3.6m 06/10	11	27	<0.1			
DMMB1-S9	4.4-4.6m 06/10	11	34	<0.1			
DMMB1-S10	5.4-5.6m 06/10	17	45	<0.1			
3H12-S1	0.15-0.35m 02/	17	40	<0.1			
3H13-S1	0.30-0.48m 02/	6	28	<0.1			
14-S1	0.18-0.28m 02/	14	23	<0.1			
15-S1	0.25-0.30m 02/	34	40	<0.1			
3H16-S1	0.20-0.35m 02/	17	40	<0.1			
120-S1	0.30-0.50m 06/	8	9	<0.1			
120-S2	0.90-1.00m 06/	9	10	<0.1			
DMMB2-S2	0.9-1.0m 06/10	9	20	<0.1			
DMMB2-S3	1.4-1.5m 06/10	21	30	<0.1			
DMMB2-S4	1.9-2.0m 06/10	20	30	<0.1			
DMMB2-S6	2.9-3.0m 06/10	10	22	0.1			
DMMB2-S9	4.9-5.0m 06/10	18	36	<0.1			
117-S1	0.35-0.40m 03/	10	3	<0.1			
117-S2	0.65-0.85m 03/	14	19	<0.1			
3H17-S4	1.30-1.40m 03/	13	17	<0.1			
118-S1	0.35-0.40m 03/	6	6	<0.1			
118-S2	0.50-0.65m 03/	15	28	<0.1			
3H18-S4	1.50-1.58m 03/	12	22	<0.1			
119-S3	1.40-1.50m 07/	10	16	<0.1			
21-S1	0.40-0.50m 06/	57	171	<0.1			
21-S3	1.20-1.25m 06/	48	111	0.4			
3H22-S1	0.40-0.50m 06/	213	157	1.4			
122-S2	0.90-1.00m 06/	44	79	0.2			
122-S3	1.40-1.50m 06/	28	94	0.4			

COMMENTS:



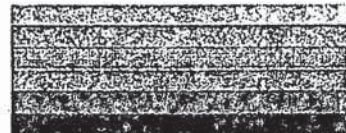
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• Results apply to sample(s) as submitted by client.



ANALYTICAL REPORT

PAGE 1 of 2

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS:
P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV-BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 0
No. OF SAMPLES: 34
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: QUALITY CONTROL

PROJECT: 33287-005-074

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	Moisture % EA-055 0.1	As mg/kg EG-005T 1	Cd mg/kg EG-005T 1	Cr mg/kg EG-005T 1	Cu mg/kg EG-005T 1	Ni mg/kg EG-005T 1
*** BLANK 14/10/97		----	<1	<1	<1	<1	<1
*** DMMB1-S1 %SPK REC 0		----	99.0%	96.0%	95.0%	93.0%	97.0%
** BH15-S1 CHK 02/10/		19.1	3	<1	19	15	10
** BH16-S1 %SPK REC 0		----	100%	93.0%	102%	88.0%	96.0%
** BH17-S2 CHK 03/10/		19.2	6	<1	22	8	9
** BH17-S4 %SPK REC 0		----	90.0%	95.0%	96.0%	91.0%	99.0%
** BH22-S3 CHK 06/10/		19.5	2	4	39	17	22
** BH23-S2 %SPK REC 0		----	94.0%	96.0%	99.0%	99.0%	101%
*** BH24-S4 CHK 07/10/		20.0	3	4	34	13	19

COMMENTS:

Results which appear on this report are routine laboratory checks for QUALITY CONTROL purposes.



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ANALYTICAL REPORT

PAGE 2 of 2

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 0
No. OF SAMPLES: 34
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: QUALITY CONTROL

PROJECT: 33287-005-074

SAMPLE NUMBER	ELEMENT UNIT METHOD L.O.R.	Pb mg/kg EG-005T 1	Zn mg/kg EG-005T 1	Hg mg/kg EG-020T 0.1			
*** BLANK 14/10/97		<1	<1	<0.1			
*** DMMB1-S1 %SPK REC 0		104%	89.0%	86.0%			
*** BH15-S1 CHK 02/10/		31	40	<0.1			
** BH16-S1 %SPK REC 0		95.0%	79.0%	110%			
** BH17-S2 CHK 03/10/		12	17	<0.1			
** BH17-S4 %SPK REC 0		95.0%	118%	98.0%			
** BH22-S3 CHK 06/10/		28	89	0.5			
** BH23-S2 %SPK REC 0		100%	101%	86.0%			
** BH24-S4 CHK 07/10/		8	40	<0.1			

COMMENTS:



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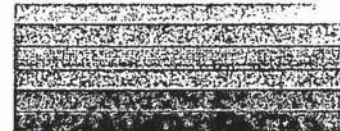
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ANALYTICAL REPORT

PAGE 1 of 9

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB1-S2 0.9-1.1m 06/10/97	DWMB1-S6 2.9-3.1m 06/10/97	DWMB1-S7 3.4-3.6m 06/10/97	DWMB1-S9 4.4-4.6m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	9.2	8.2	5.9	5.2
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
EP-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	86	88	93	90
	Toluene-D8	%	1	88	93	95	96
	4-Bromofluorobenzene	%	1	91	91	94	94

COMMENTS:

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Samples analysed on an as received basis. Results reported on a dry weight basis. This report supersedes any previous preliminary reports of the same batch number.

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• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB1-S10 5.4-5.6m 06/10/97	BH12-S1 0.15-0.35m 02/10/97	BH13-S1 0.30-0.48m 02/10/97	BH14-S1 0.18-0.28m 02/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	4.6	8.4	11.5	7.7
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	90	88	90	88
	Toluene-D8	%	1	93	93	95	94
	4-Bromofluorobenzene	%	1	95	89	89	89

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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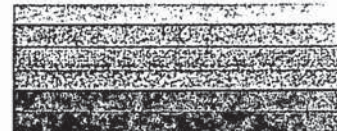
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ANALYTICAL REPORT

PAGE 3 of 9

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH15-S1 0.25-0.30m 02/10/97	BH16-S1 0.20-0.35m 02/10/97	BH20-S1 0.30-0.50m 06/10/97	BH20-S2 0.90-1.00m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	18.5	11.0	7.5	3.3
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	81	92	91	94
	Toluene-D8	%	1	94	90	95	94
	4-Bromofluorobenzene	%	1	98	92	90	93

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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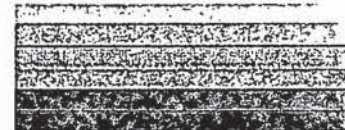
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ANALYTICAL REPORT

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB2-S2	DWMB2-S3	DWMB2-S4	DWMB2-S6
				0.9-1.0m 06/10/97	1.4-1.5m 06/10/97	1.9-2.0m 06/10/97	2.9-3.0m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	18.8	18.0	19.5	22.8
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	162	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
EP-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	88	90	85	90
	Toluene-D8	%	1	95	93	89	93
	4-Bromofluorobenzene	%	1	88	96	90	95

COMMENTS:

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CONTACT: s78(B)(2)
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB2-S9 4.9-5.0m 06/10/97	BH17-S1 0.35-0.40m 03/10/97	BH17-S2 0.65-0.85m 03/10/97	BH17-S4 1.30-1.40m 03/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	28.5	5.8	19.4	18.6
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
P-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	82	89	86	86
	Toluene-D8	%	1	90	92	90	85
	4-Bronofluorobenzene	%	1	84	98	91	87

COMMENTS:

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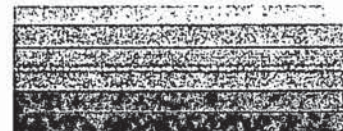
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CONTACT: s78(B)(2)
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH18-S1 0.35-0.40m 03/10/97	BH18-S2 0.50-0.65m 03/10/97	BH18-S4 1.50-1.58m 03/10/97	BH19-S3 1.40-1.50m 07/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	5.7	20.3	19.0	18.1
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
P-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	85	80	84	81
	Toluene-D8	%	1	95	93	93	94
	4-Bromofluorobenzene	%	1	93	93	90	99

COMMENTS:

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CONTACT: s78(B)(2)
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH21-S1 0.40-0.50m 06/10/97	BH21-S3 1.20-1.25m 06/10/97	BH22-S1 0.40-0.50m 06/10/97	BH22-S2 0.90-1.00m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	10.6	16.4	10.8	17.0
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
P-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	88	84	88	88
	Toluene-D8	%	1	92	96	90	88
	4-Bromofluorobenzene	%	1	89	92	85	86

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH22-S3 1.40-1.50n 06/10/97	BH23-S2 0.90-1.00n 06/10/97	BH23-S3 1.40-1.50n 06/10/97	BH24-S1 0.45-0.50n 07/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	20.3	17.8	16.8	5.8
P-071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	ng/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	ng/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	ng/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	ng/kg	100	<100	<100	<100	<100
P-080-SS	BTEX						
	Benzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES						
	1,2-Dichloroethane-D4	%	1	83	83	85	82
	Toluene-D8	%	1	91	88	92	87
	4-Bromofluorobenzene	%	1	89	86	86	85

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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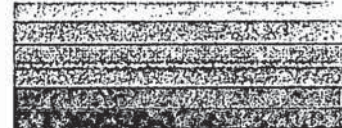
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 1
No. OF SAMPLES: 33
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH24-S4 1.40-1.55m 07/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	19.7
P-071-SS	TOTAL PETROLEUM HYDROCARBONS			
	C6 - C9 Fraction	ng/kg	2	<2
	C10 - C14 Fraction	ng/kg	50	<50
	C15 - C28 Fraction	ng/kg	100	<100
	C29 - C36 Fraction	ng/kg	100	<100
P-080-SS	BTEX			
	Benzene	ng/kg	0.2	<0.2
	Toluene	ng/kg	0.2	<0.2
	Chlorobenzene	ng/kg	0.2	<0.2
	Ethylbenzene	ng/kg	0.2	<0.2
	meta- & para-Xylene	ng/kg	0.2	<0.2
	ortho-Xylene	ng/kg	0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES			
	1,2-Dichloroethane-D4	%	1	84
	Toluene-D8	%	1	91
	4-Bromofluorobenzene	%	1	93

COMMENTS:

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• Results apply to sample(s) as submitted by client.

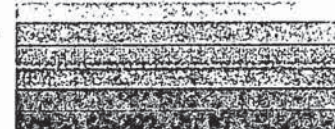
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 2
No. OF SAMPLES: 5
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DMWB1-S6 2.9-3.1m 06/10/97	BH15-S1 0.25-0.30m 02/10/97	DMWB2-S3 1.4-1.5m 06/10/97	BH22-S1 0.40-0.50m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	8.2	18.5	18.0	10.8
P-075A-SS	PHENOLS						
	Phenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2-Chlorophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2-Methylphenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	4-Methylphenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2-Nitrophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dimethylphenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2,4-Dichlorophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2,6-Dichlorophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	4-Chloro-3-methylphenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2,4,6-Trichlorophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2,4,5-Trichlorophenol	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Pentachlorophenol	ng/kg	1	<1	<1	<1	<1
FP-075B-SS	POLYNUCLEAR AROMATICS						
	Naphthalene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2-Methylnaphthalene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	2-Chloronaphthalene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthylene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Fluorene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Phenanthrene	ng/kg	0.5	<0.5	<0.5	<0.5	0.7
	Anthracene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Fluoranthene	ng/kg	0.5	<0.5	<0.5	<0.5	1.9
	Pyrene	ng/kg	0.5	<0.5	<0.5	<0.5	1.6
	N-2-Fluorenylacetanide	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Benz(a)anthracene	ng/kg	0.5	<0.5	<0.5	<0.5	0.9
	Chrysene	ng/kg	0.5	<0.5	<0.5	<0.5	1.0
	Benzo(b) & (k)fluoranthene	ng/kg	1	<1	<1	<1	2
	7,12-Dimethylbenz(a)anthracene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5

COMMENTS:

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Samples analysed on an as received basis. Results reported on a dry weight basis.

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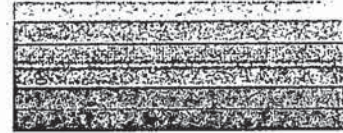
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CONTACT: s78(B)(2)
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 2
No. OF SAMPLES: 5
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH23-S2 0.90-1.00m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	17.8
P-075A-SS	PHENOLS			
	Phenol	ng/kg	0.5	<0.5
	2-Chlorophenol	ng/kg	0.5	<0.5
	2-Methylphenol	ng/kg	0.5	<0.5
	4-Methylphenol	ng/kg	0.5	<0.5
	2-Nitrophenol	ng/kg	0.5	<0.5
	2,4-Dimethylphenol	ng/kg	0.5	<0.5
	2,4-Dichlorophenol	ng/kg	0.5	<0.5
	2,6-Dichlorophenol	ng/kg	0.5	<0.5
	4-Chloro-3-methylphenol	ng/kg	0.5	<0.5
	2,4,6-Trichlorophenol	ng/kg	0.5	<0.5
	2,4,5-Trichlorophenol	ng/kg	0.5	<0.5
	Pentachlorophenol	ng/kg	1	<1
FP-075B-SS	POLYNUCLEAR AROMATICS			
	Naphthalene	ng/kg	0.5	<0.5
	2-Methylnaphthalene	ng/kg	0.5	<0.5
	2-Chloronaphthalene	ng/kg	0.5	<0.5
	Acenaphthylene	ng/kg	0.5	<0.5
	Acenaphthene	ng/kg	0.5	<0.5
	Fluorene	ng/kg	0.5	<0.5
	Phenanthrene	ng/kg	0.5	<0.5
	Anthracene	ng/kg	0.5	<0.5
	Fluoranthene	ng/kg	0.5	<0.5
	Pyrene	ng/kg	0.5	<0.5
	N-2-Fluorenylacetamide	ng/kg	0.5	<0.5
	Benz(a)anthracene	ng/kg	0.5	<0.5
	Chrysene	ng/kg	0.5	<0.5
	Benzo(b) & (k)fluoranthene	ng/kg	1	<1
	7,12-Dimethylbenz(a)anthracene	ng/kg	0.5	<0.5

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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ANALYTICAL REPORT

PAGE 3 of 4

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 2
No. OF SAMPLES: 5
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB1-S6 2.9-3.1m 06/10/97	BH15-S1 0.25-0.30m 02/10/97	DWMB2-S3 1.4-1.5m 06/10/97	BH22-S1 0.40-0.50m 06/10/97
EP-075B-SS	Benzo(a)pyrene	ng/kg	0.5	<0.5	<0.5	<0.5	1.3
	3-Methylcholanthrene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Indeno(1,2,3-cd)pyrene	ng/kg	0.5	<0.5	<0.5	<0.5	0.6
	Dibenz(a,h)anthracene	ng/kg	0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(g,h,i)perylene	ng/kg	0.5	<0.5	<0.5	<0.5	0.7
P-075S-SS	ACID EXTRACTABLE SURROGATES						
	2-Fluorophenol	%	1	98	91	92	92
	Phenol-D6	%	1	95	92	86	89
	2-Chlorophenol-D4	%	1	91	87	85	88
	2,4,6-Tribromophenol	%	1	109	110	88	87
EP-075T-SS	BASE/NEUTRAL EXTRACTABLE SURROGATES						
	Nitrobenzene-D5	%	1	91	82	78	87
	1,2-Dichlorobenzene-D4	%	1	73	50	53	70
	2-Fluorobiphenyl	%	1	96	84	83	91
	Anthracene-d10	%	1	96	92	88	88
	p-Terphenyl-D14	%	1	107	103	101	88

COMMENTS:

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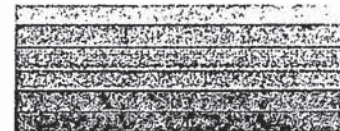
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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 2
No. OF SAMPLES: 5
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH23-S2 0.90-1.00m 06/10/97
EP-075B-SS	Benzo(a)pyrene	ng/kg	0.5	<0.5
	3-Methylcholanthrene	ng/kg	0.5	<0.5
	Indeno(1,2,3-cd)pyrene	ng/kg	0.5	<0.5
	Dibenz(a,h)anthracene	ng/kg	0.5	<0.5
	Benzo(g,h,i)perylene	ng/kg	0.5	<0.5
P-075S-SS	ACID EXTRACTABLE SURROGATES			
	2-Fluorophenol	%	1	65
	Phenol-D6	%	1	75
	2-Chlorophenol-D4	%	1	61
	2,4,6-Tribromophenol	%	1	65
EP-075T-SS	BASE/NEUTRAL EXTRACTABLE SURROGATES			
	Nitrobenzene-D5	%	1	79
	1,2-Dichlorobenzene-D4	%	1	47
	2-Fluorobiphenyl	%	1	72
	Anthracene-d10	%	1	85
	p-Terphenyl-D14	%	1	95

COMMENTS:

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 3
No. OF SAMPLES: 1
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH15-S1 0.25-0.30m 02/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	18.5
EP-068A-SS	ORGANOCHLORINE PESTICIDES			
	alpha-BHC	ng/kg	0.05	<0.26
	HCB	ng/kg	0.05	<0.26
	beta-BHC & gamma-BHC	ng/kg	0.1	<0.5
	delta-BHC	ng/kg	0.05	<0.26
	Heptachlor	ng/kg	0.05	<0.26
	Aldrin	ng/kg	0.05	<0.26
	Heptachlor epoxide	ng/kg	0.05	<0.26
	Chlordane - trans	ng/kg	0.05	<0.26
	Endosulfan 1	ng/kg	0.05	<0.26
	Chlordane - cis	ng/kg	0.05	<0.26
	Dieldrin	ng/kg	0.05	<0.26
	DDE	ng/kg	0.05	<0.26
	Endrin	ng/kg	0.05	<0.26
	Endosulfan 2	ng/kg	0.05	<0.26
	DDD	ng/kg	0.05	<0.26
	Endrin aldehyde	ng/kg	0.05	<0.26
	Endosulfan sulfate	ng/kg	0.05	<0.26
	DDT	ng/kg	0.2	<1.0
	Endrin ketone	ng/kg	0.05	<0.26
	Methoxychlor	ng/kg	0.2	<1.0
EP-068B-SS	ORGANOPHOSPHORUS PESTICIDES			
	Dichlorvos	ng/kg	0.05	<0.26
	Demeton-S-methyl	ng/kg	0.05	<0.26
	Monocrotophos	ng/kg	0.2	<1.0
	Dimethoate	ng/kg	0.05	<0.26
	Diazinon	ng/kg	0.05	<0.26
	Chlorpyrifos-methyl	ng/kg	0.05	<0.26
	Parathion-methyl	ng/kg	0.2	<1.0

COMMENTS:

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Samples analysed on an as received basis. Results reported on a dry weight basis. Particular samples required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.

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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 3
No. OF SAMPLES: 1
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	BH15-S1 0.25-0.30m 02/10/97
EP-068B-SS	Malathion	ng/kg	0.05	<0.26
	Fenthion	ng/kg	0.05	<0.26
	Chlorpyrifos	ng/kg	0.05	<0.26
	Parathion	ng/kg	0.2	<1.0
	Pirimphos-ethyl	ng/kg	0.05	<0.26
	Chlorfenvinphos E	ng/kg	0.05	<0.26
	Chlorfenvinphos Z	ng/kg	0.05	<0.26
	Bromophos-ethyl	ng/kg	0.05	<0.26
	Fenamiphos	ng/kg	0.05	<0.26
	Prothiofos	ng/kg	0.05	<0.26
	Ethion	ng/kg	0.05	<0.26
	Carbophenothion	ng/kg	0.05	<0.26
	Azinphos-methyl	ng/kg	0.05	<0.26
EP-068S-SS	ORGANOCHLORINE PESTICIDE SURROGATE			
	Dibromo-DDE	%	1	112
P-068T-SS	ORGANOPHOSPHORUS PESTICIDE SURROGATE			
	DEF	%	1	109

COMMENTS:

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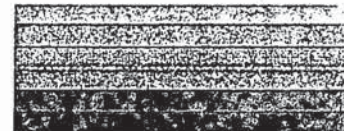
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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
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LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 4
No. OF SAMPLES: 3
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DMWB1-S6 2.9-3.1m 06/10/97	BH15-S1 0.25-0.30m 02/10/97	DMWB2-S3 1.4-1.5m 06/10/97
EA-055	Moisture Content (dried @ 103°C)	%	0.1	8.2	18.5	18.0
P-074A-SS	MONOCYCLIC AROMATIC HYDROCARBONS					
	Benzene	ng/kg	0.5	<0.5	<0.5	<0.5
	Toluene	ng/kg	0.5	<0.5	<0.5	<0.5
	Ethylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	meta- & para-Xylene	ng/kg	0.5	<0.5	<0.5	<0.5
	Styrene	ng/kg	0.5	<0.5	<0.5	<0.5
	ortho-Xylene	ng/kg	0.5	<0.5	<0.5	<0.5
	Isopropylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	n-Propylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,3,5-Trimethylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	sec-Butylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2,4-Trimethylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	tert-Butylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	p-Isopropyltoluene	ng/kg	0.5	<0.5	<0.5	<0.5
	n-Butylbenzene	ng/kg	0.5	<0.5	<0.5	<0.5
EP-074B-SS	OXYGENATED HYDROCARBONS					
	Vinyl Acetate	ng/kg	5	<5	<5	<5
	2-Butanone (MEK)	ng/kg	5	<5	<5	<5
	4-Methyl-2-pentanone (MIBK)	ng/kg	5	<5	<5	<5
	2-Hexanone (MBK)	ng/kg	5	<5	<5	<5
P-074C-SS	SULFONATED COMPOUNDS					
	Carbon disulfide	ng/kg	0.5	<0.5	<0.5	<0.5
EP-074D-SS	FUMIGANTS					
	2,2-Dichloropropane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2-Dichloropropane	ng/kg	0.5	<0.5	<0.5	<0.5
	cis-1,3-Dichloropropylene	ng/kg	1	<1	<1	<1
	trans-1,3-Dichloropropylene	ng/kg	1	<1	<1	<1
	1,2-Dibromoethane (EDB)	ng/kg	0.5	<0.5	<0.5	<0.5
P-074E-SS	HALOGENATED ALIPHATIC HYDROCARBONS (VOL)					

COMMENTS:

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Samples analysed on an as received basis. Results reported on a dry weight basis.

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• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
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SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 4
No. OF SAMPLES: 3
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB1-S6	BH15-S1	DWMB2-S3
				2.9-3.1m 06/10/97	0.25-0.30m 02/10/97	1.4-1.5m 06/10/97
FP-074E-SS	Dichlorodifluoromethane	ng/kg	5	<5	<5	<5
	Chloromethane	ng/kg	5	<5	<5	<5
	Vinyl chloride	ng/kg	5	<5	<5	<5
	Bromomethane	ng/kg	5	<5	<5	<5
	Chloroethane	ng/kg	5	<5	<5	<5
	Trichlorofluoromethane	ng/kg	5	<5	<5	<5
	1,1-Dichloroethene	ng/kg	0.5	<0.5	<0.5	<0.5
	Iodomethane	ng/kg	0.5	<0.5	<0.5	<0.5
	trans-1,2-Dichloroethene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1-Dichloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	cis-1,2-Dichloroethene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1,1-Trichloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1-Dichloropropylene	ng/kg	0.5	<0.5	<0.5	<0.5
	Carbon tetrachloride	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2-Dichloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	Trichloroethene	ng/kg	0.5	<0.5	<0.5	<0.5
	Dibromomethane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1,2-Trichloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,3-Dichloropropane	ng/kg	0.5	<0.5	<0.5	<0.5
	Tetrachloroethene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1,1,2-Tetrachloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	trans-1,4-Dichloro-2-butene	ng/kg	0.5	<0.5	<0.5	<0.5
	cis-1,4-Dichloro-2-butene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,1,2,2-Tetrachloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2,3-Trichloropropane	ng/kg	0.5	<0.5	<0.5	<0.5
	Pentachloroethane	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2-Dibromo-3-chloropropane	ng/kg	0.5	<0.5	<0.5	<0.5
	Hexachlorobutadiene	ng/kg	0.5	<0.5	<0.5	<0.5
P-074F-SS	HALOGENATED AROMATIC HYDROCARBONS					
	Chlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5

COMMENTS:

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• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS:
P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11348
SUB BATCH: 4
No. OF SAMPLES: 3
DATE RECEIVED: 14/10/97
DATE COMPLETED: 22/10/97

ORDER No.: BBN-04336

SAMPLE TYPE: SOIL

PROJECT: 33287-005-074

Method	Analysis description	Units	LOR	DWMB1-S6 2.9-3.1m 06/10/97	BH15-S1 0.25-0.30m 02/10/97	DWMB2-S3 1.4-1.5m 06/10/97
EP-074F-SS	Bromobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	2-Chlorotoluene	ng/kg	0.5	<0.5	<0.5	<0.5
	4-Chlorotoluene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,3-Dichlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,4-Dichlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2-Dichlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2,4-Trichlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
	1,2,3-Trichlorobenzene	ng/kg	0.5	<0.5	<0.5	<0.5
EP-074G-SS	TRIALOMETHANES (VOLATILES)					
	Chloroform	ng/kg	0.5	<0.5	<0.5	<0.5
	Bromodichloromethane	ng/kg	0.5	<0.5	<0.5	<0.5
	Dibromochloromethane	ng/kg	0.5	<0.5	<0.5	<0.5
	Bromoform	ng/kg	0.5	<0.5	<0.5	<0.5
EP-074H-SS	NAPHTHALENE					
	Naphthalene	ng/kg	0.5	<0.5	<0.5	<0.5
EP-074S-WS	VOLATILE COMPOUND SURROGATES					
	1,2-Dichloroethane-D4	%	1	85	85	92
	Toluene-D8	%	1	94	90	95
	4-Bromofluorobenzene	%	1	92	92	101

COMMENTS:

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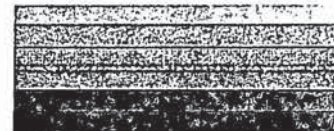
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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11409
SUB BATCH: 0
No. OF SAMPLES: 2
DATE RECEIVED: 17/10/97
DATE COMPLETED: 27/10/97

ORDER No.: BBN-04359 SAMPLE TYPE: WATER PROJECT: 33827-005-074

Method	Analysis description	Units	LOR	DWB2	BH4
				17/10/97	17/10/97
EG-005F	Chromium - Filtered	ng/L	0.01	0.03	0.03
	Copper - Filtered	ng/L	0.01	<0.01	<0.01
	Nickel - Filtered	ng/L	0.01	0.01	<0.01
	Zinc - Filtered	ng/L	0.01	<0.01	<0.01
EG-020F	Arsenic - Filtered	ng/L	0.001	<0.001	<0.001
	Cadmium - Filtered	ng/L	0.005	<0.005	<0.005
	Lead - Filtered	ng/L	0.001	<0.001	<0.001
EG-035F	Mercury - Filtered	ng/L	0.0005	<0.0005	<0.0005

D&M BBN		REQ NO: 816-94-10116		
DATE: 28-10-97		TO: GEP		
NAME	INFO	ACTION	COPY	ACTION BY
FILE NO:				

COMMENTS:

This report supersedes any previous preliminary reports of the same batch number.

sch 4 - signature

• This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

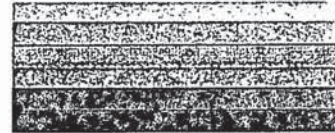
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Sydney
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Melbourne
Phone: (03) 9853 5299 Fax: (03) 9853 0730
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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11409
SUB BATCH: 0
No. OF SAMPLES: 2
DATE RECEIVED: 17/10/97
DATE COMPLETED: 27/10/97

ORDER No.: BBN-04359

SAMPLE TYPE: QUALITY CONTROL

PROJECT: 33827-005-074

Method	Analysis description	Units	LOR	BLANK	DMMB2	BH4
				17/10/97	XSPK REC 17/10/97	CHK 17/10/97
EG-005F	Chromium - Filtered	ng/L	0.01	<0.01	98.0 %	0.01
	Copper - Filtered	ng/L	0.01	<0.01	101 %	<0.01
	Nickel - Filtered	ng/L	0.01	<0.01	102 %	<0.01
	Zinc - Filtered	ng/L	0.01	<0.01	103 %	<0.01
EG-020F	Arsenic - Filtered	ng/L	0.001	<0.001	107 %	0.001
	Cadmium - Filtered	ng/L	0.005	<0.005	106 %	<0.005
	Lead - Filtered	ng/L	0.001	<0.001	99.0 %	<0.001
EG-035F	Mercury - Filtered	ng/L	0.0005	<0.0005	99.0 %	<0.0005

COMMENTS:

Results which appear on this report are for laboratory
QUALITY CONTROL purposes.

sch 4 - signature

• This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

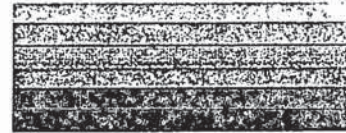
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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB11409
SUB BATCH: 1
No. OF SAMPLES: 2
DATE RECEIVED: 17/10/97
DATE COMPLETED: 27/10/97

ORDER No.: BBN-04359

SAMPLE TYPE: WATER

PROJECT: 33827-005-074

Method	Analysis description	Units	LOR	DWMB2 17/10/97	BH4 17/10/97
EP-071-WS	TOTAL PETROLEUM HYDROCARBONS				
	C6 - C9 Fraction	ug/L	20	<20	<20
	C10 - C14 Fraction	ug/L	50	<50	<50
	C15 - C28 Fraction	ug/L	100	<100	<100
	C29 - C36 Fraction	ug/L	50	<50	<50
P-080-WS	BTEX				
	Benzene	ug/L	1	<1	<1
	Toluene	ug/L	2	<2	<2
	Chlorobenzene	ug/L	2	<2	<2
	Ethylbenzene	ug/L	2	<2	<2
	meta- & para-Xylene	ug/L	2	<2	<2
	ortho-Xylene	ug/L	2	<2	<2
P-080S-WS	VOLATILE TPH/BTEX COMPOUND SURROGATES				
	1,2-Dichloroethane-D4	%	1	120	118
	Toluene-D8	%	1	97	94
	4-Bromofluorobenzene	%	1	101	103

COMMENTS:

sch 4 - signature

• This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

18-xxx

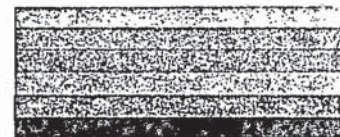
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AUSTRALIAN
LABORATORY
SERVICES P/L

A.C.N. 009 936 629

ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB11409

DATE BATCH RECEIVED : 20/10/97

CLIENT : Dames & Moore

DATE BATCH COMPLETED : 22/10/97

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-071	TPH-Volatile	Water	USEPA 5030 A	USEPA 8260A	VOCW461	N/A	20/10/97
	-Semivolatile	Water	USEPA 3510B	USEPA 8015A	TPHW435	20/10/97	21/10/97
EP-080	BTEX	Water	USEPA 5030 A	USEPA 8260A	VOCW461	N/A	20/10/97

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCW461
MATRIX: Water

ANALYST: T. Devantier

Volatile Components

COMPOUND	Level Of	Blank	Spike	SPIKE RESULTS				CONTROL LIMITS		
	Reporting	Conc	Conc	SCS	DCS	Av.	RPD	Recovery		RPD
	(LOR)			conc	conc	Rec.		(%)		
	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	%	%	Low	High	%
C6-C9	20	<LOR	311	308	304	98	1	95	105	20
C10	20	<LOR	59	57	61	99	8	78	118	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/06)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

MATRIX: Water

ANALYST: G Entwistle

QC LOT No.: TPHW435

Semivolatile Components

COMPOUND	Level Of Reporting (LOR)	Blank Conc.	Spike Conc.	Spike Results				Control Limits		
				SCS Conc.	DCS Conc.	Av. Rec.	RPD	Recovery %		RPD
	ug/L	ug/L	ug/L	ug/L	ug/L	%	%	Low	High	%
C11-C14	50	<LOR	520	578	606	114	5	75	132	20
C15-C28	100	<LOR	1000	958	1061	101	10	73	116	20
C29-C36	50	<LOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20

COMMENTS:

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) * : Recovery or RPD falls outside the recommended control limit.

BATCH QUALITY CONTROL

ALS EP-080 : BTEX ANALYSIS

QC Lot No. : VOCW461
MATRIX: Water

ANALYST: T. Devantier

COMPOUND	Blank Results	Spike Conc	QC SPIKE RESULTS				Control Limits		
			SCS Conc	DCS Conc	Av. Rec.	RPD	Recovery		RPD
	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	$\mu\text{g/L}$	%	%	Low	High	%
Benzene	<LOR	10	9.91	10.43	102	5	94	107	20
Toluene	<LOR	10	9.79	9.63	97	2	91	111	20
Chlorobenzene	<LOR	10	10.17	10.03	101	1	96	104	20
Ethylbenzene	<LOR	10	10.21	9.86	100	3	94	107	20
m- & p-Xylene	<LOR	10	9.70	9.18	94	6	94	110	20
o-Xylene	<LOR	10	9.70	9.31	95	4	94	109	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) * : Recovery or RPD falls outside of the recommended control limits.



AUSTRALIAN
LABORATORY
SERVICES P/L

A.C.N. 009 936 029

ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB11348

DATE BATCH RECEIVED : 14/10/97

CLIENT : Dames & Moore

DATE BATCH COMPLETED : 21/10/97

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-068	Pesticides	Soil	Tumbler	USEPA 8270B	OCOPS573	15/10/97	18/10/97
EP-071	TPH-Volatile	Soil	USEPA 5030 A	USEPA 8260A	VOCS1792	14/10/97	15/10/97
	-Semivolatile	Soil	Tumbler	USEPA 8015A	VOCS1793 TPHT1729 TPHT1730	15/10/97	16/10/97
EP-074	Volatile Scan	Soil	USEPA 5030 A	USEPA 8260A	VSCS187	14/10/97	15/10/97
EP-075	Semivolatile Scan	Soil	Tumbler	USEPA 8270B	SVOCS546	15/10/97	16/10/97
EP-080	BTEX	Soil	USEPA 5030 A	USEPA 8260A	VOCS1792 VOCS1793	14/10/97	15/10/97

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCS1792
MATRIX: Soil

ANALYST: T. Branson

Volatile Components

COMPOUND	Level Of	Blank	Spike	SPIKE RESULTS				Control Limits		
	Reporting	Conc	Conc	SCS	DCS	Av.	RPD	Recovery		
	(LOR)			Conc	Conc	Rec.		(%)	RPD	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
C6-C9	2.0	<LOR	31	30	31	99	2	91	109	20
C10	2.0	<LOR	5.9	5.9	6.2	102	6	80	114	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/06)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCS1793
MATRIX: Soil

ANALYST: K. Hegarty

Volatile Components

COMPOUND	Level Of	Blank	Spike	SPIKE RESULTS				Control Limits		
	Reporting	Conc	Conc	SCS	DCS	Av.	RPD	Recovery		RPD
	(LOR)			Conc	Conc	Rec.		(%)		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
C6-C9	2.0	<LOR	31	29	30	96	3	91	109	20
C10	2.0	<LOR	5.9	5.8	5.5	96	5	80	114	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/06)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

MATRIX: Soil

ANALYST: G ENTWISTLE

QC LOT No.: TPHT1729

Semivolatile Components

COMPOUND	Level Of Reporting (LOR)	Blank Conc.	Spike Conc.	Spike Results				Control Limits		
				SCS Conc.	DCS Conc.	Av. Rec.	RPD	Recovery %		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
C11-C14	50	<LOR	100	92	85	88	7	77	116	20
C15-C28	100	<LOR	350	311	294	86	5	78	117	20
C29-C36	100	<LOR	N/A	N/A	N/A	N/A	N/A	60	110	20

COMMENTS:

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) * : Recovery or RPD falls outside the recommended control limit.

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

MATRIX: Soil

ANALYST: G ENTWISTLE

QC LOT No.: TPHT1730

Semivolatile Components

COMPOUND	Level Of Reporting (LOR)	Blank Conc.	Spike Conc.	Spike Results				Control Limits		
				SCS Conc.	DCS Conc.	Av. Rec.	RPD	Recovery %		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
C11-C14	50	<LOR	100	90	90	90	0	60	129	20
C15-C28	100	<LOR	350	325	329	93	1	63	130	20
C29-C36	100	<LOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20

COMMENTS:

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) * : Recovery or RPD falls outside the recommended control limit.

BATCH QUALITY CONTROL

ALS EP-080 : BTEX ANALYSIS

QC Lot No. : VOCS1792
MATRIX: Soil

ANALYST: T. Branson

COMPOUND	Blank Results	Spike Conc	QC SPIKE RESULTS				Control Limits		
			SCS Conc	DCS Conc	Av. Rec.	RPD	Recovery		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
Benzene	<LOR	1.0	0.99	1.03	101	5	93	111	20
Toluene	<LOR	1.0	0.97	0.97	97	0	92	110	20
Chlorobenzene	<LOR	1.0	0.97	0.98	97	1	95	105	20
Ethylbenzene	<LOR	1.0	0.97	0.99	98	2	94	107	20
m- & p-Xylene	<LOR	1.0	0.95	0.96	96	1	93	109	20
o-Xylene	<LOR	1.0	0.97	0.99	98	2	92	110	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/07)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-080 : BTEX ANALYSIS

QC Lot No. : VOCS1793
MATRIX: Soil

ANALYST: K. Hegarty

COMPOUND	Blank Results	Spike Conc	QC SPIKE RESULTS				Control Limits		
			SCS Conc	DCS Conc	Av. Rec.	RPD	Recovery		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
Benzene	<LOR	1.0	0.99	0.99	99	0	93	111	20
Toluene	<LOR	1.0	1.00	1.05	102	4	92	110	20
Chlorobenzene	<LOR	1.0	0.93	1.03	98	10	95	105	20
Ethylbenzene	<LOR	1.0	0.96	1.03	99	6	94	107	20
m- & p-Xylene	<LOR	1.0	1.02	1.03	102	1	93	109	20
o-Xylene	<LOR	1.0	0.99	1.03	101	4	92	110	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/07)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

BATCH QUALITY CONTROL

ALS EP-074 : VOLATILE SCAN ANALYSIS

QC LOT No. : VSCS187
MATRIX: Soil

ANALYST: T. Branson

COMPOUND	Blank Conc.	Spike Conc.	QC SPIKE RESULTS				Control Limits		
			SCS Conc	DCS Conc	Average Rec.	RPD	Rec.		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
EP-074A : MONOCYCLIC AROMATICS									
Benzene	<LOR	1.0	1.04	1.05	104	1	88	114	20
Toluene	<LOR	1.0	1.05	1.04	105	1	88	114	20
Ethylbenzene	<LOR	1.0	1.01	1.01	101	0	91	110	20
m & p-Xylene	<LOR	2.0	1.99	1.98	99	1	92	109	20
Styrene	<LOR	1.0	1.03	1.02	102	1	92	110	20
o-Xylene	<LOR	1.0	1.00	0.97	99	3	92	108	20
Isopropylbenzene	<LOR	1.0	0.99	0.99	99	0	91	110	20
n-Propylbenzene	<LOR	1.0	1.01	0.93	97	8	87	113	20
1,3,5-Trimethylbenzene	<LOR	1.0	1.03	0.94	98	9	87	111	20
sec-Butylbenzene	<LOR	1.0	1.00	0.95	98	5	85	115	20
1,2,4-Trimethylbenzene	<LOR	1.0	1.07	0.96	101	11	83	114	20
tert-Butylbenzene	<LOR	1.0	1.00	0.93	97	7	88	113	20
p-Isopropyltoluene	<LOR	1.0	1.05	0.92	99	12	83	118	20
n-Butylbenzene	<LOR	1.0	1.06	0.91	99	15	78	120	20
EP-074B : OXYGENATED COMPOUNDS									
Acetone	<LOR	N/A	N/A	N/A					
Vinyl acetate	<LOR	10	11.21	13.16	122	16	73	125	20
2-Butanone (MEK)	<LOR	10	11.59	13.58	126	16	53	135	20
4-Methyl-2-pentanone (MIBK)	<LOR	10	11.25	13.68	125	19	66	129	20
2-Hexanone (MBK)	<LOR	10	11.25	13.39	123	17	68	132	20
EP-074C : SULFATED COMPOUNDS									
Carbondisulfide	<LOR	1.0	1.02	0.98	100	4	79	122	20
EP-074D : FUMIGANTS									
2,2-Dichloropropane	<LOR	1.0	1.05	1.04	104	1	82	118	20
1,2-Dichloropropane	<LOR	1.0	1.05	1.08	106	3	92	112	20
cis-1,3-Dichloropropylene	<LOR	2.0	2.14	2.20	108	3	89	114	20
trans-1,3-Dichloropropylene	<LOR	2.0	2.18	2.29	112	5	77	122	20
1,2-Dibromoethane	<LOR	1.0	1.04	1.19	112	13	82	119	20
EP-074E : HALOGENATED ALIPHATICS									
Dichlorodifluoromethane	<LOR	10	9.57	8.24	89	15	45	123	20
Chloromethane	<LOR	10	9.50	8.72	91	9	49	126	20
Vinyl chloride	<LOR	10	9.23	7.03	81	27	58	133	20
Bromomethane	<LOR	10	9.94	9.21	96	8	62	142	20
Chloroethane	<LOR	10	9.84	9.36	96	5	76	122	20
Trichlorofluoromethane	<LOR	10	9.96	9.77	99	2	76	124	20
1,1-Dichloroethene	<LOR	1.0	1.03	1.02	102	1	72	134	20
Iodomethane	<LOR	1.0	1.03	1.04	104	1	74	127	20
Methylene chloride	N/A	N/A	N/A	N/A					

trans-1,2-Dichloroethene	<LOR	1.0	1.06	1.05	106	1	85	114	20
1,1-Dichloroethane	<LOR	1.0	1.05	1.05	105	0	88	114	20
cis-1,2-Dichloroethene	<LOR	1.0	1.04	1.07	105	3	86	115	20
1,1,1-Trichloroethane	<LOR	1.0	1.01	1.02	102	1	86	117	20
1,1-Dichloropropylene	<LOR	1.0	1.06	1.06	106	0	86	116	20
Carbon tetrachloride	<LOR	1.0	1.04	1.01	103	3	83	120	20
1,2-Dichloroethane	<LOR	1.0	1.08	1.14	111	5	87	116	20
Trichloroethene	<LOR	1.0	1.05	1.03	104	1	93	109	20
Dibromomethane	<LOR	1.0	1.07	1.16	112	8	88	118	20
1,1,2-Trichloroethane	<LOR	1.0	1.08	1.12	110	3	86	116	20
1,3-Dichloropropane	<LOR	1.0	1.05	1.10	107	5	90	113	20
Tetrachloroethene	<LOR	1.0	1.01	1.01	101	0	87	114	20
1,1,1,2-Tetrachloroethane	<LOR	1.0	1.03	1.03	103	0	87	115	20
trans-1,4-Dichloro-2-butene	<LOR	1.0	1.07	1.30	119	19	72	128	20
cis-1,4-Dichloro-2-butene	<LOR	1.0	1.11	1.27	119	14	72	132	20
1,1,2,2-Tetrachloroethane	<LOR	1.0	1.06	1.18	112	11	78	124	20
1,2,3-Trichloropropane	<LOR	1.0	1.04	1.23	113	16	74	126	20
Pentachloroethane	<LOR	1.0	1.04	0.96	100	8	74	127	20
1,2-Dibromo-3-chloropropane	<LOR	1.0	1.01	1.22	112	19	71	136	20
Hexachlorobutadiene	<LOR	1.0	0.95	0.74	84	25 *	71	131	20
EP-074F : HALOGENATED AROMATICS									
Chlorobenzene	<LOR	1.0	1.01	1.01	101	0	92	109	20
Bromobenzene	<LOR	1.0	1.03	0.99	101	4	91	109	20
2-Chlorotoluene	<LOR	1.0	1.03	0.92	98	11	90	111	20
4-Chlorotoluene	<LOR	1.0	1.03	0.94	98	10	88	111	20
1,3-Dichlorobenzene	<LOR	1.0	1.04	0.95	99	10	91	110	20
1,4-Dichlorobenzene	<LOR	1.0	1.05	0.97	101	8	90	108	20
1,2-Dichlorobenzene	<LOR	1.0	1.07	1.00	103	7	89	112	20
1,2,4-Trichlorobenzene	<LOR	1.0	1.03	0.86	95	18	84	116	20
1,2,3-Trichlorobenzene	<LOR	1.0	1.00	0.98	99	3	85	116	20
EP-074H : TRIHALOMETHANES									
Chloroform	<LOR	1.0	1.03	1.05	104	2	88	112	20
Bromodichloromethane	<LOR	1.0	1.08	1.07	108	1	91	114	20
Dibromochloromethane	<LOR	1.0	1.04	1.06	105	3	83	122	20
Bromoform	<LOR	1.0	1.08	1.14	111	6	67	136	20
EP-074G : NAPHTHALENE									
Naphthalene	<LOR	1.0	1.02	1.00	101	2	88	111	20

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) * : RPD or recovery falls outside the recommended control limit.

BATCH QUALITY CONTROL

ALS EP-075 : SEMIVOLATILE SCAN

QC LOT No. : SVOCS546
MATRIX: Soil

ANALYST: G. Greenland

COMPOUND	Blank Conc.	Spike Level	QC SPIKE RESULTS				Control Limits		
			SCS Conc	DCS Conc	Average Rec.	RPD	Recovery		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
EP-075A : PHENOLS									
Phenol	<LOR	1.25	1.12	1.07	88	4	53	119	35
2-Chlorophenol	<LOR	1.25	1.07	1.09	87	2	53	120	35
2-Methylphenol	<LOR	1.25	1.12	1.01	85	10	56	117	35
4-Methylphenol	<LOR	1.25	1.01	1.03	81	2	49	129	35
2-Nitrophenol	<LOR	1.25	0.97	1.01	79	4	28	110	35
2,4-Dimethylphenol	<LOR	1.25	1.02	0.96	79	6	39	148	35
2,4-Dichlorophenol	<LOR	1.25	0.96	0.97	77	1	43	118	35
2,6-Dichlorophenol	<LOR	1.25	1.10	1.00	84	10	52	118	35
4-Chloro-3-methylphenol	<LOR	1.25	1.10	0.96	82	14	54	119	35
2,4,6-Trichlorophenol	<LOR	1.25	1.14	0.97	84	16	48	118	35
2,4,5-Trichlorophenol	<LOR	1.25	1.12	0.95	83	16	47	120	35
Pentachlorophenol	<LOR	1.25	0.24	0.30	21 *	22	26	88	35
EP-075B : POLYAROMATIC HYDROCARBONS									
Naphthalene	<LOR	1.25	1.12	1.14	90	2	54	121	35
2-Methylnaphthalene	<LOR	1.25	1.15	1.11	91	3	51	125	35
2-Chloronaphthalene	<LOR	1.25	1.15	1.02	87	12	50	120	35
Acenaphthalene	<LOR	1.25	1.10	1.00	84	10	54	118	35
Acenaphthene	<LOR	1.25	1.13	1.17	92	3	52	121	35
Fluorene	<LOR	1.25	1.10	1.10	88	1	54	122	35
Phenanthrene	<LOR	1.25	1.14	1.16	92	2	50	126	35
Anthracene	<LOR	1.25	1.11	1.13	90	3	51	121	35
Fluoranthrene	<LOR	1.25	1.07	1.13	88	5	51	125	35
Pyrene	<LOR	1.25	1.05	1.14	88	8	53	123	35
N-2-Fluorenylacetimide	<LOR	1.25	1.05	1.12	87	6	46	111	35
Benz(a)anthracene	<LOR	1.25	1.07	1.17	90	9	50	127	35
Chrysene	<LOR	1.25	1.12	1.21	93	8	52	130	35
Benzo(b) & (k) fluoranthene	<LOR	2.50	2.32	2.39	94	3	48	121	35
7,12-Dimethyl benz(a)anthracene	<LOR	1.25	1.17	1.21	95	3	31	157	35
Benzo(a)pyrene	<LOR	1.25	1.16	1.18	94	2	46	118	35
3-Methylcholanthrene	<LOR	1.25	1.13	1.16	92	2	48	115	35
Indeno(1,2,3-cd)pyrene	<LOR	1.25	1.13	1.12	90	1	46	121	35
Dibenz(a,h)anthracene	<LOR	1.25	1.15	1.15	92	0	47	123	35
Benzo(g,h,i)perylene	<LOR	1.25	1.16	1.12	91	4	47	126	35
EP-075C : PHTHALATE ESTERS									
Dimethylphthalate	<LOR	1.25	1.06	0.94	80	11	63	126	35
Diethylphthalate	<LOR	1.25	1.14	1.17	92	3	60	133	35
Di-n-butylphthalate	<LOR	1.25	1.53	1.73	130	12	34	162	35
Benzyl butyl phthalate	<LOR	1.25	1.10	1.18	91	7	48	127	35
Bis(2-ethylhexyl)phthalate	<LOR	1.25	1.62	1.41	121	14	71	208	35
Di-n-octylphthalate	<LOR	1.25	1.16	1.13	91	2	45	139	35

EP-075D : NITROSAMINES

N-Nitrosomethylethylamine	<LOR	1.25	0.92	0.94	74	2	48	119	35
N-Nitrosodiethylamine	<LOR	1.25	1.08	1.08	87	0	49	120	35
N-Nitrosopyrrolidine	<LOR	1.25	0.93	1.10	81	17	33	125	35
N-Nitrosomorpholine	<LOR	1.25	1.21	1.27	99	5	50	121	35
N-Nitrosodi-n-propylamine	<LOR	1.25	1.06	1.11	87	5	48	129	35
N-Nitrosopiperidine	<LOR	1.25	1.06	1.11	87	4	57	120	35
N-Nitrosodibutylamine	<LOR	1.25	1.00	0.93	77	8	54	125	35
Diphenylamine & N-Nitrosodiphenylamine	<LOR	2.50	2.09	2.21	86	6	49	117	35
Diallate	<LOR	1.25	1.08	1.10	87	2	66	119	35
Methapyriline	<LOR	1.25	0.49	0.48	39	2	0	141	35

EP-075E : NITROAROMATICS AND KETONES

2-Picoline	<LOR	1.25	0.77	0.73	60	6	20	145	35
Acetophenone	<LOR	1.25	1.09	1.11	88	2	62	117	35
Nitrobenzene	<LOR	1.25	1.07	1.05	85	2	56	118	35
Isophorone	<LOR	1.25	1.11	1.11	89	0	60	122	35
2,6-Dinitrotoluene	<LOR	1.25	0.97	0.91	75	6	46	124	35
2,4-Dinitrotoluene	<LOR	1.25	0.93	1.03	78	10	38	117	35
1-Naphthalemine	<LOR	1.25	1.24	1.21	98	3	0	193	35
4-Nitroquinoline-N-oxide	<LOR	1.25	1.10	1.22	93	11	57	127	35
5-Nitro-o-toluidine	<LOR	1.25	0.94	1.19	85	24	31	132	35
Azobenzene	<LOR	1.25	1.10	1.12	89	2	57	117	35
1,3,5-Trinitrobenzene	<LOR	1.25	0.47	0.70	47	39 *	0	159	35
Phenacetin	<LOR	1.25	1.08	1.18	90	9	41	122	35
4-Aminobiphenyl	<LOR	1.25	1.05	1.09	85	4	48	115	35
Pentachloronitrobenzene	<LOR	1.25	1.08	1.13	89	4	64	120	35
Pronamide	<LOR	1.25	1.08	1.11	88	3	41	119	35
Dimethylaminoazobenzene	<LOR	1.25	0.95	1.10	82	15	32	121	35
Chlorobenzilate	<LOR	1.25	1.11	1.13	90	2	39	127	35

EP-075F : HALOETHERS

Bis(2-chloroethyl)ether	<LOR	1.25	1.09	1.07	86	1	58	118	35
Bis(2-chloroethoxy)methane	<LOR	1.25	1.08	1.04	85	4	59	123	35
4-Chlorophenyl phenyl ether	<LOR	1.25	1.10	1.14	89	3	66	117	35
4-Bromophenyl phenyl ether	<LOR	1.25	1.00	1.10	84	10	62	118	35

EP-075G : CHLORINATED HYDROCARBONS

1,3-Dichlorobenzene	<LOR	1.25	1.10	1.08	87	2	59	118	35
1,4-Dichlorobenzene	<LOR	1.25	1.10	1.11	88	1	57	121	35
1,2-Dichlorobenzene	<LOR	1.25	1.09	1.09	87	0	60	118	35
Hexachloroethane	<LOR	1.25	1.03	1.06	83	2	52	120	35
1,2,4-Trichlorobenzene	<LOR	1.25	1.13	1.13	90	0	62	119	35
Hexachloropropylene	<LOR	1.25	0.90	1.02	77	12	38	113	35
Hexachlorobutadiene	<LOR	1.25	1.10	1.10	88	0	62	118	35
Hexachlorocyclopentadiene	<LOR	1.25	0.26	0.32	24	20	10	102	35
Pentachlorobenzene	<LOR	1.25	1.09	1.16	90	7	65	118	35
Hexachlorobenzene	<LOR	1.25	1.08	1.12	88	4	15	179	35

EP-075H : ANILINES AND BENZIDINES

Aniline	<LOR	1.25	1.28	1.24	100	3	0	331	35
4-Chloroaniline	<LOR	1.25	0.80	0.92	69	14	0	155	35
2-Nitroaniline	<LOR	1.25	0.96	0.93	76	4	32	120	35
3-Nitroaniline	<LOR	1.25	0.93	1.10	81	17	30	121	35
Dibenzofuran	<LOR	1.25	1.09	1.10	88	1	65	114	35
4-Nitroaniline	<LOR	1.25	1.16	1.07	89	8	11	138	35
Carbazole	<LOR	1.25	1.42	1.38	112	3	49	129	35
3,3'-Dichlorobenzidine	<LOR	1.25	0.77	1.15	77	39 *	0	157	35

EP-075I : ORGANOCHLORINE PESTICIDES

alpha-BHC	<LOR	1.25	1.00	1.07	83	7	59	120	35
beta- & gamma-BHC	<LOR	2.50	2.20	2.28	90	4	58	124	35
delta-BHC	<LOR	1.25	1.14	1.14	91	0	46	123	35
Heptachlor	<LOR	1.25	1.09	1.12	88	2	39	120	35
Aldrin	<LOR	1.25	1.12	1.12	89	1	51	120	35
Heptachlorepoxide	<LOR	1.25	1.10	1.09	88	1	45	128	35
Endosulfan 1	<LOR	1.25	0.99	1.11	84	12	50	125	35
p,p'-DDE	<LOR	1.25	1.09	1.13	89	4	46	118	35
Dieldrin	<LOR	1.25	1.09	1.10	88	1	10	134	35
Endrin	<LOR	1.25	1.05	1.19	90	12	21	139	35
Endosulfan 2	<LOR	1.25	1.12	1.14	90	3	51	118	35
p,p'-DDD	<LOR	1.25	1.07	1.13	88	5	51	123	35
Endosulfan sulfate	<LOR	1.25	1.31	1.23	102	6	49	132	35
p,p'-DDT	<LOR	1.25	0.97	1.11	83	13	24	129	35

EP-075J : ORGANOPHOSPHORUS PESTICIDES

Methanesulfonate methyl	<LOR	1.25	1.11	1.22	93	9	53	121	35
Methanesulfonate ethyl	<LOR	1.25	1.11	1.18	92	5	59	119	35
Dichlorvos	<LOR	1.25	1.04	0.94	79	10	58	117	35
cis-Isosfarole	<LOR	1.25	1.07	1.01	83	6	61	117	35
trans-Isosfarole	<LOR	1.25	1.07	0.91	79	16	63	118	35
Safarole	<LOR	1.25	1.10	1.02	85	7	55	118	35
Dimethoate	<LOR	1.25	1.03	1.08	85	5	44	122	35
Diazinon	<LOR	1.25	1.12	1.15	91	3	50	119	35
Chlorpyrifos methyl	<LOR	1.25	1.10	1.14	89	3	46	117	35
Malathion	<LOR	1.25	1.13	1.17	92	4	40	127	35
Fenthion	<LOR	1.25	1.06	1.13	88	6	42	118	35
Chlorpyrifos	<LOR	1.25	1.02	1.21	89	17	36	118	35
Pirimphosethyl	<LOR	1.25	1.09	1.14	89	4	38	132	35
Chlorfenvinphos-E	<LOR	1.25	N/A	N/A	N/A				
Chlorfenvinphos-Z	<LOR	1.25	1.08	1.11	88	3	34	134	35
Prothiofos	<LOR	1.25	1.10	1.10	88	0	13	164	35
Ethion	<LOR	1.25	1.20	1.22	97	2	38	130	35

COMMENTS :

- 1) The control limits are based on ALS laboratory statistical data (Method QWI-ORG/07).
- 2) *: Recovery or RPD falls outside the recommended limits.

BATCH QUALITY CONTROL

ALS EP-068 : PESTICIDES

QC LOT No. : OCOPS573
MATRIX: Soil

ANALYST: L. Corrado

COMPOUND	Blank Conc	Spike Level	SPIKE QC RESULTS				Control Limits		
	mg/kg	mg/kg	SCS Conc	DCS Conc	Average Rec.	RPD	Rec.		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
EP-068A : ORGANOCHLORINE PESTICIDES									
a-BHC	<LOR	0.25	0.22	0.23	89	3	83	101	20
HCB	<LOR	0.25	0.22	0.23	90	3	79	101	20
b- & g-BHC	<LOR	0.50	0.49	0.47	96	3	83	106	20
d-BHC	<LOR	0.25	0.24	0.23	94	4	82	104	20
Heptachlor	<LOR	0.25	0.21	0.22	85	4	82	106	20
Aldrin	<LOR	0.25	0.22	0.23	90	2	80	105	20
Heptachlor epoxide	<LOR	0.25	0.23	0.24	94	2	80	107	20
trans-Chlordane	<LOR	0.25	0.23	0.23	93	1	79	110	20
Endosulfan 1	<LOR	0.25	0.24	0.22	92	7	81	109	20
cis-Chlordane	<LOR	0.25	0.23	0.24	94	1	81	108	20
Dieldrin	<LOR	0.25	0.22	0.22	89	2	80	107	20
DDE	<LOR	0.25	0.25	0.24	98	3	82	106	20
Endrin	<LOR	0.25	0.23	0.24	93	3	81	108	20
Endosulfan 2	<LOR	0.25	0.25	0.25	100	0	82	107	20
DDD	<LOR	0.25	0.23	0.24	94	2	80	107	20
Endrin aldehyde	<LOR	0.25	0.23	0.26	99	13	76	103	20
Endosulfan sulfate	<LOR	0.25	0.23	0.23	92	1	80	109	20
DDT	<LOR	0.25	0.21	0.22	87	3	80	112	20
Endrin ketone	<LOR	0.25	0.24	0.24	95	1	80	108	20
Methoxychlor	<LOR	0.25	0.21	0.21	84	3	80	110	20
EP-068B : ORGANOPHOSPHORUS PESTICIDES									
Dichlorvos	<LOR	0.25	0.22	0.22	88	3	80	107	20
Demeton-s-methyl	<LOR	0.25	0.22	0.22	89	2	67	114	20
Monocrotophos	<LOR	0.25	0.23	0.24	95	3	75	124	20
Dimethoate	<LOR	0.25	0.22	0.23	91	3	82	111	20
Diazinon	<LOR	0.25	0.22	0.22	89	1	82	104	20
Chlorpyrifos methyl	<LOR	0.25	0.23	0.23	92	3	81	106	20
Parathion methyl	<LOR	0.25	0.22	0.22	89	1	79	108	20
Malathion	<LOR	0.25	0.23	0.23	92	2	81	107	20
Fenthion	<LOR	0.25	0.23	0.23	91	1	83	105	20
Chlorpyrifos	<LOR	0.25	0.21	0.22	86	1	83	105	20
Parathion	<LOR	0.25	0.23	0.24	95	5	79	109	20
Pirimphos ethyl	<LOR	0.25	0.24	0.24	95	0	81	106	20
Chlorfenvinphos E	<LOR	0.25	N/A	N/A	N/A				
Chlorfenvinphos Z	<LOR	0.25	0.24	0.24	96	1	82	109	20
Bromophos ethyl	<LOR	0.25	0.23	0.23	93	1	81	105	20
Fenamiphos	<LOR	0.25	0.24	0.24	97	1	77	114	20
Prothiofos	<LOR	0.25	0.23	0.23	93	2	80	107	20
Ethion	<LOR	0.25	0.23	0.24	95	2	82	107	20
Carbofenthion	<LOR	0.25	0.23	0.23	93	1	76	110	20
Azinphos methyl	<LOR	0.25	0.22	0.22	88	2	58	137	20
EP-068C : TRIAZINE PESTICIDES									
Simazine	<LOR	0.25	0.22	0.22	88	4	79	107	20
Atrazine	<LOR	0.25	0.23	0.24	93	3	77	109	20
EP-068D : SYNTHETIC PYRETHROIDS									
Cypermethrins	<LOR	0.25	0.23	0.24	94	5	68	127	20

COMMENTS:

- 1) The control limits are based on ALS laboratory statistical data. (Method QWI-ORG/07)
- 2) * : Recovery or RPD falls outside of the recommended control limits.

22 OCT 1997

Certificate of Analysis

CLIENT: ALS **JOB NO:** 84G140A-134
SAMPLED BY: As received **DATE RECEIVED:** 16/10/97
CONTACT: Mr P Vogel
LOCATION: As Supplied
TEST METHOD: Qualitative identification of asbestos types in bulk samples at PPK's Queensland Laboratory by polarised light microscopy, including dispersion staining techniques using PPK's in-house method No.1 and N.A.T.A registration No.9607. N.A.T.A. does not register sampling.

Lab Number	Client ID	Sample Description	Sample Dimensions cm	Identification Type
M001	EB11348-1-DMMB1-S1	Soil	N/A	NAD
M002	EB11348-2-DMMB1-S2	Soil	N/A	NAD
M003	EB11348-7-BH12-S1	Soil	N/A	NAD

National Association of Testing

MA

THE

LEGEND

NAD - No Asbestos Detected
CH - Chrysotile Asbestos Detected
A - Amosite Asbestos Detected
C - Crocidolite Asbestos Detected
UMF - Unknown Mineral Fibres Detected

sch 4 - signature

Approved Identifier

sch 4 - signature

Approved Signatory

AUTHORISATION DATE

16/10/97

NB: If no asbestos is detected in vinyl tiles, mastics, sealants, epoxy resins and ore samples then confirmation by another independent analytical technique is advised due to the nature of the samples.

Contact name: Ms Julie-Ann Buseddu
Phone: 3403 5564
Fax direct: 3403 9158
Your reference:
Our reference: JB:jb

HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

26 SEP 1997



Brisbane City Council
69 Ann Street
BRISBANE QLD 4000
GPO Box 1434
BRISBANE QLD 4001

26 September 1997

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

ATTENTION: Anthony Wallis

Dear Anthony

Re: Lot 23 RP193152 - 157 Coronation Dye, Milton

This is in reference to the fax you sent on 17 September, 1997.

In response to your query regarding the above site, a search of Council records confirm that it was previously a service station. Building record shows that alterations to a service station was conducted in 1952. The service station may have been built around 1940's. Our record shows that it was demolished in 1983.

The current classification of this site is commercial premises. The name of the building is 'Colonial Mutual & Fujitsu House.' There are no F&C licence for this property.

If you have any further questions please contact me on telephone number 3403 5564.

Yours faithfully

sch 4 - signature

Julie-Ann Buseddu
ADMINISTRATION OFFICER
CONTAMINATED LAND

Anthony - find out if site remediated
& if reports are to be submitted
to DOE. sch 4 - signature 2/10/97

Don - enter to register no 'Probable'
ANM 2/10/97.
(Refer to AW's file note)

D:\DOE\CORONATN\AW



Published on DES
Disclosure Log
RTI Act 2009

Before 1946

'83 - Demolition

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25

*** PROPERTY: 002/0159-4 ^02452 ***

SUBDIVISIONS.

* L.23 RP.193152 PAR ENOGERA

As child: 5021

* COLONIAL MUTUAL BUILDING & FUJITSU HOUSE

*

*

>BCCC Continue list of records

>BCNN Search previous properties

>BCTT Terminate enquiry

>BCES ^02452

Street Name: CORONATION DVE

>BCES ^02578

Street Name: CRIBB ST

>BCER B10851/97

270897:A/ISSUE OFFICE FITOUT LVL 3

>BCER B10506/97

190897:PENDING OFFICE FITOUT GND FL

>BCER B6937/96

250397:COMPLN OFFICE FITOUT

>BCER B6413/96

110996:A/ISSUE BUSINESS OFFICE

T6129/96

TOWN PLANNING CERTIFICATE

>BCER B360/96

250397:COMPLN TENANCY FITOUT

>BCER B8289/95

250397:COMPLN OFFICE TENANCY ALTS

>BCER B6573/92

110794:COMPLN OFFICE FITOUT

>BCER B6208/92

110794:COMPLN OFFICE FITOUT

CONTINUED

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25

*** PROPERTY: 002/0159-4 ^02452 ***

SUBDIVISIONS.

* L.23 RP.193152 PAR ENOGERA

As child: 5021

* COLONIAL MUTUAL BUILDING & FUJITSU HOUSE

*

*

>BCNN Search previous properties

>BCTT Terminate enquiry

T1072/90

TOWN PLANNING CERTIFICATE

T1312/88

TOWN PLANNING CERTIFICATE

END OF LIST

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25

*** PROPERTY: 001/0011-4 ^02578 ***

SUBDIVISIONS.

* R.17 S.1 P.1N PAR ENOGERA

As parent: 5021

*

*

*

>BCCC Continue list of records

>BCNN Search previous properties

>BCTT Terminate enquiry

>BCES ^02578

Street Name: CRIBB ST

>BCER B4709/85

121285:COMPLN OFFICE

T9476/84

TOWN PLANNING CERTIFICATE

M017-070-030

3 FRAMES - BUILDING CARDS

>BCEF F(7)420/16-LL220/X28

160782:OPEN COMMERCIAL PREMISES

>BCEF F(4)420/11-LL220/157

101282:APPRVED COMMER.PREM.& OFFICE

>BCER B7265/82
>BCEF (4) 223/30-LL220/157
>BCER B1653/83
T7788/83
>BCER B716/84
CONTINUED

040583:A/ISSUE COMMERCIAL & CARPARK
080483:APPRVED APPLICATION D & F
240887:COMPLN DEMOLITION
TOWN PLANNING CERTIFICATE
200186:COMPLN OFFICE BLDG

BCEU 002/0159-4 ^02452
*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25
*** PROPERTY: 001/0011-4 ^02578 ***
SUBDIVISIONS. * R.17 S.1 P.1N PAR ENOGERA
*
As parent: 5021 *
*
>BCNN Search previous properties
>BCTT Terminate enquiry

>BCEF F(5)439/26(7030) 011084:APPRVED SUB
>BCER B1817/84 250584:COMPLN BUILDING

END OF LIST

BCEU 002/0159-4 ^02452
*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25
*** PROPERTY: 000/0009 ^02578 ***
SUBDIVISIONS. * R.16 S.1 P.1N PAR ENOGERA
*
As parent: 5021 *
*
>BCCC Continue list of records
>BCNN Search previous properties
>BCTT Terminate enquiry

>BCES ^02578 Street Name: CRIBB ST
>BCER B899/86 270887:COMPLN COMMERCIAL
>BCER B4709/85 121285:COMPLN OFFICE
T9476/84 TOWN PLANNING CERTIFICATE
M017-070-030 3 FRAMES - BUILDING CARDS
>BCEF F(7)420/16-LL220/X28 160782:OPEN COMMERCIAL PREMISES
>BCEF F(4)420/11-LL220/157 101282:APPRVED COMMER.PREM.& OFFICE
>BCER B7265/82 040583:A/ISSUE COMMERCIAL & CARPARK
>BCEF F(4)223/30-LL220/157 080483:APPRVED APPLICATION D & F
>BCER B1653/83 240887:COMPLN DEMOLITION
T7788/83 TOWN PLANNING CERTIFICATE
CONTINUED

BCEU 002/0159-4 ^02452
*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:25
*** PROPERTY: 000/0009 ^02578 ***
SUBDIVISIONS. * R.16 S.1 P.1N PAR ENOGERA
*
As parent: 5021 *
*
>BCNN Search previous properties

>BCTT Terminate enquiry

>BCER B716/84
>BCEF F(5)439/26(7030)
>BCER B1817/84

200186:COMPLN OFFICE BLDG
011084:APPRVED SUB
250584:COMPLN BUILDING

END OF LIST

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:26

*** PROPERTY: 001/0159-4 ^02452 ***

SUBDIVISIONS. * L.3 RP.48832 PAR ENOGERA

As parent: 5021

>BCCC Continue list of records
>BCNN Search previous properties
>BCTT Terminate enquiry

>BCES ^02452

Street Name: CORONATION DVE

T5774/87

TOWN PLANNING CERTIFICATE

>BCER B1168/86

190887:COMPLN OFFICE TENANCY

>BCER B6704/84

200186:COMPLN COMMERCIAL

T9476/84

TOWN PLANNING CERTIFICATE

M017-070-029

1 FRAMES - BUILDING CARDS

M016-069-046

2 FRAMES - BUILDING CARDS

>BCEF F(7)420/16-LL220/X28

160782:OPEN COMMERCIAL PREMISES

>BCEF F(4)420/11-LL220/157

101282:APPRVED COMMER.PREM.& OFFICE

>BCEF F(4)223/30-LL220/157

080483:APPRVED APPLICATION D & F

T4937/83

TOWN PLANNING CERTIFICATE

CONTINUED

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM *** on 26/09/97 at 13:26

*** PROPERTY: 001/0159-4 ^02452 ***

SUBDIVISIONS. * L.3 RP.48832 PAR ENOGERA

As parent: 5021

>BCNN Search previous properties
>BCTT Terminate enquiry

T7788/83

TOWN PLANNING CERTIFICATE

>BCEF F(5)439/26(6807)

140284:APPRVED

>BCEF F(5)420/30-LL220/159(A1)

041196:COMPLTD U/A USE OF SITE

>BCER B716/84

200186:COMPLN OFFICE BLDG

END OF LIST

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM ***

on 26/09/97 at 13:26

*** PROPERTY: 000/0149 ^02452 ***

SUBDIVISIONS.

* L.4 RP.158820 PAR ENOGERA

As child: 170 *INC*

As parent: 5021

>BCNN Search previous properties

>BCTT Terminate enquiry

>BCES ^02452

>BCER B4709/85

T9476/84

T7788/83

M016-071-038

Street Name: CORONATION DVE

121285:COMPLN OFFICE

TOWN PLANNING CERTIFICATE

TOWN PLANNING CERTIFICATE

2 FRAMES - BUILDING CARDS

now 23 RP193152.

END OF LIST

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM ***

on 26/09/97 at 13:26

*** PROPERTY: 000/0151 ^02452 ***

SUBDIVISIONS.

* L.3 RP.158820 PAR ENOGERA

As child: 170 *INC*

As parent: 5021

>BCNN Search previous properties

>BCTT Terminate enquiry

>BCES ^02452

T5774/87

>BCER B1168/86

>BCER B4709/85

T9476/84

T7788/83

M016-071-038

Street Name: CORONATION DVE

TOWN PLANNING CERTIFICATE

190887:COMPLN OFFICE TENANCY

121285:COMPLN OFFICE

TOWN PLANNING CERTIFICATE

TOWN PLANNING CERTIFICATE

2 FRAMES - BUILDING CARDS

END OF LIST

BCEU 002/0159-4 ^02452

*** DEVELOPMENT & BUILDING SYSTEM ***

on 26/09/97 at 13:26

*** PROPERTY: 000/0157 ^02452 ***

SUBDIVISIONS.

* R.8/10 & S.4/5 R.11 12&15 S.1 P.1N PAR ENOGERA

As parent: 170 *INC*

>BCTT Terminate enquiry

>BCES ^02452

>BCER B716/84

>BCER B1653/83

>BCEF F(4)223/30-LL220/157

>BCER B7265/82

>BCEF F(4)420/11-LL220/157

Street Name: CORONATION DVE

200186:COMPLN OFFICE BLDG

240887:COMPLN DEMOLITION

080483:APPRVED APPLICATION D & F

040583:A/ISSUE COMMERCIAL & CARPARK

101282:APPRVED COMMER.PREM.& OFFICE

>BCEF F(7)420/16-LL220/X28

M016-069-042

M017-070-030

160782:OPEN COMMERCIAL PREMISES

4 FRAMES - BUILDING CARDS

3 FRAMES - BUILDING CARDS

END OF LIST

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RTI Act 2009

1 of 4
Memorandum

①

To Ariane
From Anthony Wallis
Subject Lot 23 on Plan RP193152
- 157 Coronation Drive - Milton

File reference
Date 1/10/97
Notes

28/8/97 - First spoke to Rachael Estay
* Explained the Contaminated Land Act and faxed information on the Register, classifications and 'how to remove a site from the Register'.

17/9/97 - Rachael first mentioned Lot 23 on Plan RP193152 and how Stage I and II investigations were done on these sites. The site as mentioned in the conversation was once a service station. I informed Rachael that I would check whether these reports had been received.

- Not of CSR or Sites DL
* I checked the CSR and discovered that the site was not on the Register. After this discovery I checked CAlms and the tracker. This also indicated that no information was available.

That afternoon I rang and faxed Julie - Ann Buseddu at Brisbane City Council.

19/9/97 - Rachael rang and she discussed that the site is mentioned as not being on the Register in the Stage 1 report.

I informed Rachael that I could not find record of the Stage I & II report and therefore am awaiting information

Memorandum

To Ariane
 From Lot 23 on Plan RP193152
 Subject - 157 Coronation Drive - Milton Date 1/10/97
 from Council. Notes

Rachael understood the situation and left it there, until I received further notification.
 22/9/97 - Unfortunately Council still did not notify.
 25/9/97 - I informed Rachael that Council were locating files and that it may be best if she notifies the site.

I talked to Toni about the site and information with respect to a site management plan. Toni explained that if a ~~site~~ in detailed Stage II - Site Investigation was done, the site could be classified as 'Restricted' and utilise only for specified use.

I ~~site~~ transferred Rachael to Toni for a clearer explanation.

Toni asked me to send a 'notification of contaminated site' form.

26/9/97 Council (Julie-Ann Buseddu) notified the site as once being utilised as a 'service station'. The service station was demolished in 1983.

1/10/97 Rachael rang and explained that she was in the process of filling out the 'Notification of Contaminated Site' form.

3 of 4
Memorandum

3

To Ariane
From Anthony Wallis
Subject Lot 23 on Plan AP193152
-157 Coronation Drive - Milton

File reference
Date 1/10/97
Notes

1/10/97 Continued
I helped Rachael fill in the form and explained ~~how~~ the issues to mention ~~to~~ in an up coming meeting.

Rachael also inquired about having a member of the staff come and explain the Contaminated Land Act and its relationship to property ~~dev~~ development.

Drafting a memo to Dagogo about a discussion of the act with approximately four members of Resolve Engineering.

1/10/97 - Afternoon
Spoke to Rachael informing her of the memo and numbers once again. she said it would be beneficial ~~in~~ over the next 1 - 2 weeks.

Informed me of how they want to sell the back property and that the stage 2 commences tomorrow. Rachael told me that there was no stage 2 done previously (different to her statement on 17/9/97 - she said she got it wrong).

sch 4 - signature

Rachael informed me that her company have purchased a copy of the preliminary investigation which was carried out by Dames + Moore.

Memorandum

To Ariane
From Anthony Wallis
Subject Lot 23 on Plan RP193152
- 157 Coronation Drive - Milton

File reference
Date 1/10/97
Notes

Rachael also informed me that the footpath may be contaminated, because samples were taken on the footpath. (I said that footpaths can also be on the Register and that we would investigate those and other possibilities when we receive the Investigation Reports).

Rachael Estay
Resolve Engineering
Phone: (07) 3226 1408
Fax: (07) 3226 1060

sch 4 - signature



QUEENSLAND GOVERNMENT

Department of Environment

HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

02 OCT 1997

Notification of Contaminated Site

The following information should be supplied by people providing notification to the Queensland Department of Environment of contaminated land or land used for a prescribed purpose under the *Contaminated Land Act 1991* and the *Contaminated Land Regulation 1991*.

Essential information

• Please complete all information. • Please complete one form per lot.

Date: 1-10-97

Local Authority area BRISBANE CITY

Information provided by Name RACHEL ESTAY Contact phone no. 32261408
Organisation RESOLVE ENGINEERING
Address 10 EAGLE ST AMP PLACE
BRISBANE. Postcode 4000

Name by which the property is known locally FUTISTU HOUSE & STAR SYSTEMS BUILDING

Location Street address 5 CRIBB STREET / 159 CORONATION DRIVE
Town/suburb MILTON Postcode 4064
Council area BRISBANE

Lot-on-Plan description of parcel of land

LOT 23 RP 193152 Parish ENOGGERA

Name and postal
address of owner

Name CH QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD
CHRISTOPHER JOHN PACKETT, AMP INVESTMENTS PROPERTY DIV
Address P.O. BOX 227 ROYAL EXCHANGE NSW
Postcode 2000

Description of the source of the suspected contamination or the prescribed purpose for which the land is or has been used (a short description of the land or cause of contamination will be sufficient. A separate attachment can be made if space is insufficient)

PAST SERVICE STATION.

Area of parcel in square metres (this information is used as a cross-check on the land description details)

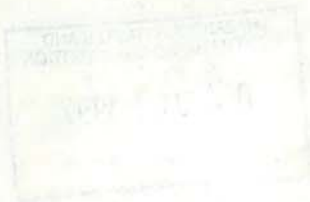
3,973m²

Current local authority zoning of the land SPECIAL DEVELOPMENT OR COMMERCIAL + RETAIL.

The processing of this information would be greatly assisted by the inclusion of a map or locality plan.

If further information is required please contact:

Queensland Department of Environment
Contaminated Sites Section
P O Box 155
Brisbane Albert Street Qld 4002
Phone (07) 3227 7370 Fax (07) 3227 8341



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Postage Paid
BRISBANE
Qld., Aust.
4000

QLO DEPARTMENT OF ENVIRONMENT
CONTAMINATED SITES SECTION
PO Box 155
BRISBANE
ALBERT STREET
QLD

4002



4002 N80

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**DEPARTMENT OF ENVIRONMENT
WASTE MANAGEMENT BRANCH
CONTAMINATED SITES SECTION**

FAXED
17/9/97

Sender: Anthony Wallis
Facsimile no: (07) 3227 8341
Telephone no: (07) 3225 1957
Address: 12th floor, 160 Ann Street, Brisbane, Queensland
Postal Address: PO Box 155
BRISBANE ALBERT STREET QLD 4002

Receiver: Julie-Ann Busseddu
Facsimile no: (07) 3403 9158
Business/Section: BRISBANE CITY COUNCIL
Date: 17 September, 1997
Number of pages: 1 (including cover sheet)

Dear Julie-Ann

Re: Lot 23 on Plan RP193152- 157 Coronation Drive

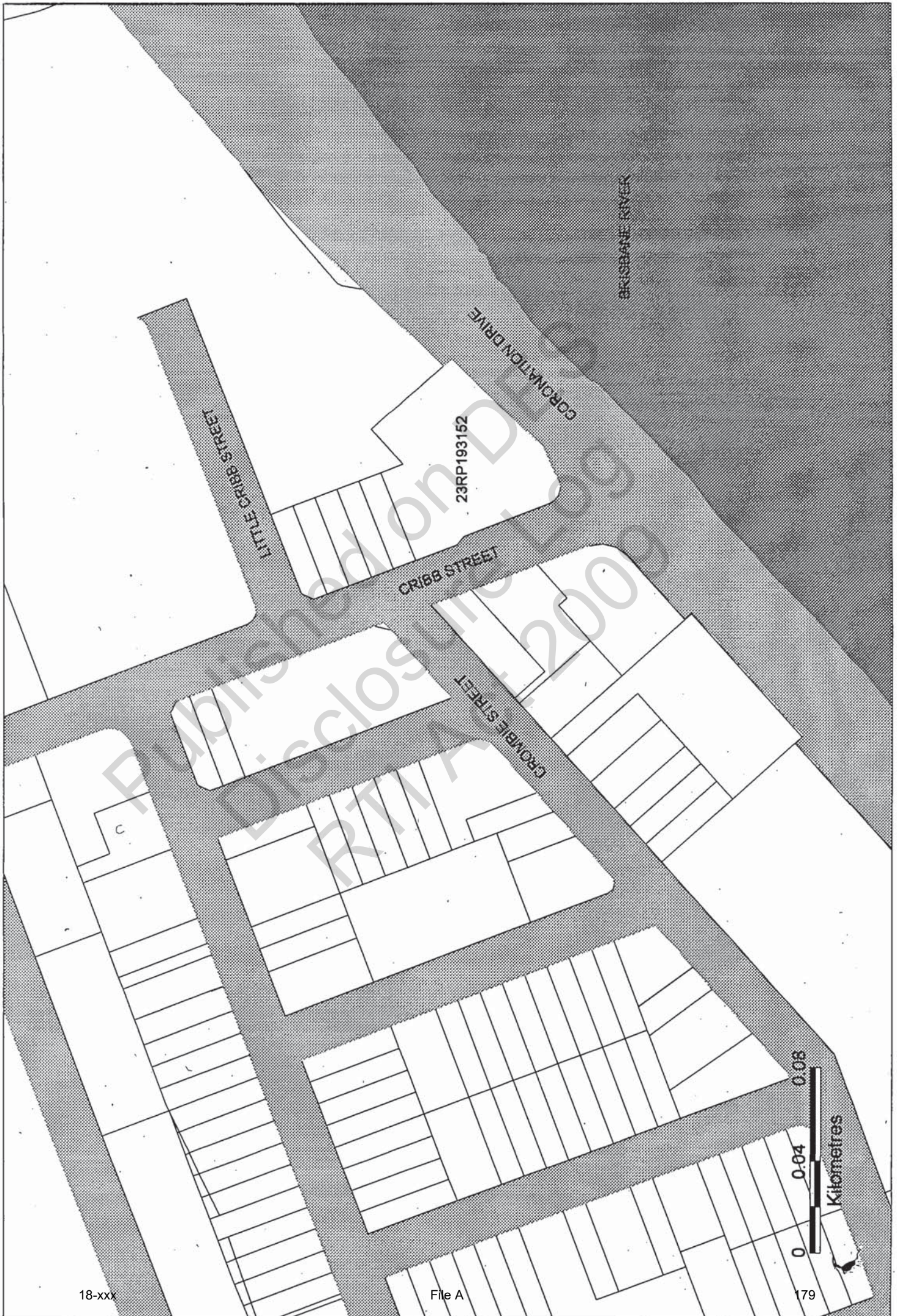
A conversation with Rachel S. Day on 17 September 1997 indicated that the above site was previously a service station and that Stage 1 and 2 site investigations were completed in October 1996. This site has not been previously notified by Council and therefore is not on the Register.

Could you please provide a notification for this site as soon as possible. Thank you.

Regards

sch 4 - signature

Anthony



LA/Div: 014 BCC - TOOWONG
Valn No: 73/00000

Area: 3973M2
Map Ref: 1044000000

SMA: 4

Rating Cat:
Financial Div:
Primary Land Use:

Property 157 CORONATION DVE,
Address: MILTON, 4064

RPD: L23/RP193152<16978025>:PAR ENOGGERA

Row No. of 1 R
Zoning:

Owners: Row No. 1 of 1 Rows

QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD
--

SPL DEV. MILTON - C.

D/Effect	D/Valn	Value	Sect	D/Issue
30/06/97	01/10/96	\$3,000,000	28	17/03/97

FullRPD(Sh-F1) More(F12) Options(Sh-F4) >

LA/Div: 014 BCC - TOOWONG
Valn No: 73/00000

Area: 3973M2

SMA: 4

Rating Cat:
Financial Div:

SPECIFIC FIELDS SELECTION

PUSSPECIF

X E M			LAND USE INFORMATION			PESLNDUSE ENQUIRY		
X	X	X	Row No. 1 of 3 Rows					
X	X	X	Type	Code	L/Use Name			
X	X	X	P	25	PROFESSIONAL OFFICES			
	X	X	S	00	SECONDARY LAND USE ONLY			
	X	X	AV	25	PROFESSIONAL OFFICES			
X	X	X	Number of Lots: 1					
			Business Ind: Y					

Print (Sh-F2) Previous (Page Up) Next (Page Down) Help (F11) >

Site Id: 140-037552

Site Name: SERVICE STATION, MILTON

Official Authorisation for CSR Site: Y

Local Government: BRISBANE CITY

Category: PRO

Entry Date: 02/10/97

Last Altered: 20/10/1997

Location: 157 CORONATION DRIVE
MILTON
4064

Lot: 23 on Plan RP193152

Tenure:

Owner: QLD LOCAL GOVERNMENT SUPERANNUATION BOARD
C/- SAMUT & COMPANY
GPO BOX 808
BRISBANE
QLD
4001

Zoning:

Current Use: 2231

Area: 3973 ha/s

Prescribed Purpose: 2231

Past Use: 2231

File: 902038

UXO region:

Contaminants:

UNK

Action Officer:

NIL

Status: A

Vol:

Folio: 0000

Comments:

NOTIFIED BY BCC - SEE LETTER DATED 26/9/97
(REF:JB:JB). SITE PREVIOUSLY OPERATED AS A SERVICE
STATION. 2/10/97.TMB// CSI APPLICATION RECEIVED
FROM DAMES & MOORE PTY LTD ON 07/10/97
(REF:33287-005-074): STAGE 1 AND PRELIMINARY STAGE
2 INVESTIGATIONS HAVE BEEN CARRIED OUT. A FURTHER
STAGE 2 INVESTIGATION IS CURRENTLY BEING
UNDERTAKEN.-20/10/97.RT.//

** END OF REPORT **



DAMES & MOORE PTY LTD

A DAMES & MOORE COMPANY

135 Wickham Terrace, Brisbane
Queensland, Australia
P.O. Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

0 8 OCT 1997

07 October 1997

Ref: 33287-005-074
[GEP/DOEGPL01.DOC/BBN]

Queensland Department of Environment
PO Box 155
BRISBANE Albert Street 4002

Attention: Mr. David Miles - Director
Contaminated Land Section

Dear Sir,

**APPLICATION FEE
CONTAMINATED LAND EVALUATION
5 CRIBB STREET & 159 CORONATION DRIVE**

Please find herewith our completed Application for Site Contamination Report and remittance of \$900.00 for the associated statutory fee in relation to the above property on behalf of AMP Investments Pty Ltd. Please note that a Stage 1 and Preliminary Stage 2 investigation have been carried out for 159 Coronation Drive on behalf of Peter Kurts Developments and copies of our previous reports are enclosed for your reference. A further Stage 2 investigation is currently being undertaken and we will forward a copy of this report for your reference as soon as available.

We would appreciate review and advice on the enclosed two reports as soon as possible.

Yours faithfully
DAMES & MOORE

sch 4 - signature

s78(B)(2)

Consultant

DAMES & MOORE PTY. LIMITED

A.C.N. 003 293 696

No. 101418

VENDOR NUMBER	DESCRIPTION	INVOICE DATE	INVOICE NUMBER	INVOICE AMOUNT
	APPLICATION FEE 43508	7.10.97	33287	\$900.00

PLEASE DETACH BEFORE BANKING

QUEENSLAND

Date 09/10/97

DEPARTMENT OF ENVIRONMENT

Receipt No. 43508

Received From .. DAMES & MOORE P/L Amount.... 900.00
Cheque Details
Bank..... WBC Chq. No..... 101418
Place..... SYDNEY
Particulars..... SITE CONTAM REPORT
4SRWM176 EH210 900.00

Cashier.... MER Per Authorised Accounting Officer

Cheques or other negotiable instruments accepted subject to clearance

MAP

21

1 KILOMETRE EQUALS 8 GRID SQUARES

BEN'S
Licensed Karaoke

VIETNAMESE & CHINESE RESTAURANT

Dine In & Take Away
7 Days ★ 11am to 11pm

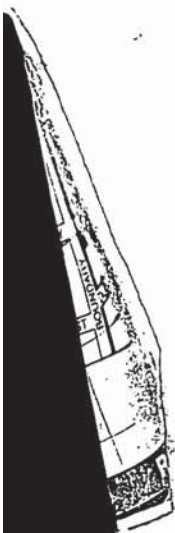
1st Floor, 14 Annerley Road, Woolloongabba ★ Map Ref: 22 Q17

☎ 3391 3233



HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION
0 8 OCT 1997

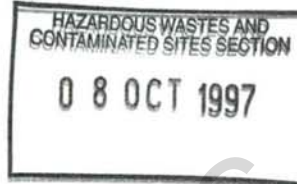
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RTI Act 2009





30 August 1996

Kurts Developments Limited
9th Floor
141 Queen Street
BRISBANE QLD 4000



135 Wickham Terrace, Brisbane
Queensland, Australia
P.O. Box 251, Spring Hill Qld 4004
61-7-3832 3222 Tel
61-7-3832 1687 Fax
bbn@dames.com E-mail

Attention: Mr Richard Akero

PHASE 1 ENVIRONMENTAL DUE DILIGENCE ASSESSMENT

159 CORONATION DRIVE, MILTON

1.0 INTRODUCTION

Dames & Moore (D&M) was commissioned by Kurts Developments Limited (Kurts) on 12 August 1996 to conduct an assessment of the property located at 159 Coronation Drive, Milton. The objective of the assessment was to assess if any contamination exists on the site.

The scope of work included:

- An overview of the site's historical use, prepared by means of a titles search, review of available aerial photographs, and interviews with persons having an association with the site;
- A review of the geology and hydrogeology of the site;
- Drilling four hand auger boreholes at selected locations over the site; and
- Collection and laboratory analysis of two samples for organic and metal parameters.

This report contains the results of the assessment.

2.0 SITE DESCRIPTION

2.1 LOCATION AND PROPERTY DESCRIPTION

The subject site is located at the corner of Cribb Street and Coronation Drive, Milton.

The real property description of the site is Lot 23 on RP193152, County of Stanley, Parish of Enoggera, City of Brisbane. This lot and plan description covers both the subject site with addresses at 159 Coronation Drive and 5 Cribb Street and covers an area of 3,973 m². The local authority is Brisbane City Council (BCC) and the site is zoned *Special Development* under the town plan or *Commercial and Retail* under the Milton Development Control Plan.

2.2 GEOLOGY

Inspection of the Brisbane 1:100,000 geological map (sheet 9543, edition 1, 1986) indicates the site contains fill deposits consisting typically of mud, sand and rubble. This fill, of unknown thickness, is underlain by undifferentiated alluvial sediments comprising sand, silt, clay and gravel. These alluvial sediments overlie Bunya Phyllite comprising phyllite, chert, and minor micaceous meta-arenite.

2.3 TOPOGRAPHY

Inspection of the Brisbane 1:50,000 topographical map (sheet 9543-III, edition 1, series R.733) indicates the site is located approximately 5-10 m above sea level on the lower end of a ridge running north-west towards Red Hill. The site has been levelled out as a result of development but the natural slope would have fallen away to the south-east towards the Brisbane River. The surrounding area also tends to slope towards the Brisbane River.

2.4 HYDROGEOLOGY

The Bunya Phyllite does not form an important aquifer in the Brisbane area due to its low permeability. It is likely that a groundwater aquifer exists within the alluvial sediments. Based on the height of the site above the Brisbane River it is thought that the depth to groundwater is about 5-10 m below ground level with groundwater flow towards the Brisbane River.

The Groundwater Resources of Queensland 1,250,000,000 map (Mines Department State Series, Map 4, 1987) indicates that the immediate has marginal water quality (salinity > 1,500 mg/L TDI) and expected poor yields.

3.0 SITE HISTORY

The site history has been compiled based on a title search, and examination of aerial photographs between 1946 and 1994 and discussions with several persons having an association with the site. The Contaminated Sites Register was also searched to determine if the property is listed as a contaminated site.

3.1 OWNERSHIP

Copies of title documents for the site were obtained to identify past and present ownership.

The present property originally comprised two allotments described as Volume 7048, Folio's 179 and 180. An historical search is currently being conducted on these titles and will be forwarded as an addendum to this report

Historical title information indicates the site has been owned since 1984 by the Queensland Local Government Superannuation Board. A copy of the current Certificate of Title is attached in Appendix A.

3.2 AERIAL PHOTOGRAPH INTERPRETATION

The following aerial photographs were examined to provide information about the site history:

- Brisbane, film number 38-1, run 16, frame 34731, dated 1946, scale approximately 1:14,000, black and white photograph.
- Brisbane, film number Q768, run 7, frames 80 and 81, dated 16/5/58, scale approximately 1:25,000, black and white photographs.
- Brisbane, Q2468, run 15, frame 89, dated 2/7/72, scale approximately 1:24,000, black and white photograph.
- Caboolture, film number Q4020, run 13, frames 279 and 280, dated 3/6/82, scale approximately 1:25,000, black and white photographs.
- Brisbane, film number QPc5334, run 9, frame 27, dated 7/11/94, scale approximately 1:20,000, colour photograph.

In 1946 the site appeared to be occupied by several buildings and building-complexes. The majority of buildings on the site appeared to be several stories in height. The western side of the site, adjacent to Cribb Street, was occupied by what appears to be an old warehouse. Adjacent to this warehouse were buildings of residential appearance. Land to the east of the site was relatively vacant with one building of commercial appearance and land to the south of the site adjacent to Coronation Drive was occupied mainly by one large building of commercial appearance.

In 1958, the building situated on the site facing Coronation Drive had what appears to be a front canopy removed and a small building which appears to be a site office had been erected adjacent to the remaining building. The remainder of the site and surrounding land appears unchanged from 1946.

By 1972 the large building to the south of the site had been removed with a number of other buildings of commercial appearance (including high-rise buildings) taking its place. Several of the buildings of residential appearance to the west of the site had been removed. Several of the buildings to the east of the site had been removed and the area used for car parking.

Between 1972 and 1982 another high-rise building had been erected to the south of the site adjacent to Coronation Drive. The surrounding land appears unchanged from 1972.

Between 1982 and 1994, the existing buildings on the site were removed and subsequently redeveloped with buildings of commercial appearance. The remainder of the site was covered by lawn and gardens. The surrounding land had changed with several buildings to the west having been demolished and a number of new buildings of commercial appearance erected.

3.3 INTERVIEWS

Discussions were held with Mr Chris Finn of Semet & Co. who leased the present building on the site to Peter Kurts.

This interview revealed the following site history details:

The present building on 159 Coronation Drive was constructed in 1984 by Capcount Australia Pty Ltd in conjunction with McKerral/Lynch Architects. Soil and rock was excavated and removed from the site as

part of this redevelopment to accommodate the underground carpark. The underground car park occupies about 80% of the building footprint, and the building occupies about 80% of the total site area. Based on a visual assessment the underground car park is up to 1m below adjacent street levels.

Part of the site was reported to have previously been used as a small garage containing an office. The portion of the site in the area adjacent to Cribb Street was reported to have been an old warehouse leased to 'Better Brakes'.

The property adjacent to the site to the north was reported to have previously been an old house which had been jacked up and then used as a car yard.

3.4 CONTAMINATED SITES REGISTER SEARCH

Results of a search on the Contaminated Sites Register (CSR) indicated the site is not included on the CSR. Results of the CSR search and current title search are included in Appendix A.

4.0 SITE ASSESSMENT

4.1 SITE INSPECTION

A Dames & Moore Environmental Engineer inspected the site on 23 August 1996. Two buildings occupy the site with underground carparking facilities having been constructed beneath these buildings. These two buildings are separated by a garden area constructed over the carparking area.

The entire property on the western portion of the site has established gardens and lawn. The northern part of the site comprises gravel bed landscaping with varying amounts of vegetative ground cover. The eastern boundary facing Coronation Drive contains several trees bordering the building with the remaining area grassed.

The building situated on the western boundary of the site extends to the common property boundary. This building is currently occupied by Software Star Systems. The building to the north of the site is a multi-storey commercial building under the name Unisys. To the south of the site are several multi-storey commercial buildings also.

4.2 SUBSURFACE ASSESSMENT

To provide some indication of soil properties on site a limited subsurface sampling programme was conducted.

Several soil types were observed in the four hand auger boreholes which were drilled. Descriptions of soil profiles are given in Table 1.

Auger holes in the south-east corner of the site (MIL1 and MIL2) encountered silty sand topsoil overlying orange-brown, gravelly sandy clays containing fragments of phyllite. This soil appeared to be fill.

A hand auger hole in the north of the site (MIL3) encountered a silty sand topsoil overlying coarse grained landscaping gravel covered with black garden mesh. A similar profile was observed (MIL4) in the garden areas in the southern portion of the site.

TABLE 1
SOIL SAMPLE DETAILS

Auger Location	Location	Depth (m bgl)	Description	Sample
MIL1	Front of building on site facing Coronation Drive	0.0-0.3 0.3-0.6	Silty sand FILL, dark brown, medium dense, moist, no odour or staining Gravelly sandy CLAY with fragments of phyllite, moist, fine to coarse grained gravel, no odour or staining	MIL1, 0.3-0.6 m
MIL2	Front of building on site facing Coronation Drive	0.0-0.2 0.2-0.5	Silty sand FILL, dark brown, medium dense, moist, no odour or staining Gravelly sandy CLAY, moist, fine to coarse grained gravel, no odour	MIL2, 0.2-0.5 m
MIL3	Northern boundary of site	0.0-0.3 0.3-0.5	Silty sand FILL, dark brown, medium dense, no odour or staining Encountered black mesh @ 0.3 m, Coarse grained landscaping gravel, no odour or staining	MIL3, 0.3-0.5 m
MIL4	In garden area above underground car park	0-0.3 0.3-0.5	Silty clayey sand FILL, dark brown-grey, moist, fill, no odour or staining Encountered black mesh @ 0.3 m, coarse grained landscaping gravel, no odour or staining	MIL4, 0-0.3 m

4.3 LABORATORY ANALYSIS

Soil samples were sent to Australian Laboratory Services (ALS) Pty Ltd, at Stafford, for chemical testing. Certificates of Analysis are attached as Appendix B. The Chain of Custody form and Sample Receipt Advice are also included in Appendix B.

Samples were analysed for contaminants typically encountered in imported fill: (1) the metals arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc; (2) a suite of organochlorine and organophosphorus pesticides (OC/OP pesticides); (3) a suite of polycyclic aromatic hydrocarbons (PAH); (4) petroleum hydrocarbons by fractions (TPH); and (5) the monocyclic aromatic hydrocarbons (MAH), benzene, toluene, ethyl benzene and xylene (BTEX).

Metals results are presented in Table 2 and have been tabled with Environmental Investigation Thresholds (EIT) and Health Based Investigation Thresholds (HBIT)¹. OC/OP pesticides results are given in Table 3 and have been tabled with EIT. PAH results are given in Table 4 and have been tabled with HBIT and

¹ Guidelines for the Assessment of Contaminated Land in Queensland, Chemical Hazards and Emergency Management Unit, January 1992.

proposed Health Investigation Level Guidelines (HILG)². TPH results are given in Table 5 and have been tabled with Draft Investigation Thresholds (DIT)³. Levels of reporting (LOR) have been included within these tables.

TABLE 2
SOIL ANALYSIS RESULTS - METALS

Sample	Depth (m)	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
MIL1	0.3-0.6	5	<1	13	14	9	111	73	0.1
MIL2	0.2-0.5	2	<1	14	18	10	93	72	0.2
MIL3	0.0-0.3	<1	<1	14	8	9	25	34	<0.1
Level of Reporting		1	1	1	1	1	1	1	0.1
EIT		20	3	50	60	60	300	200	1
HBIT		100	20	-	-	-	300	-	-

Note: All results in mg/kg, dry weight, unless otherwise specified.
A shaded box indicates a value which exceeds EIT.

² Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Australian and New Zealand Environment and Conservation Council and the National Health and Medical Research Council, January 1992.

³ Draft Guidelines for Assessment of Contaminated Land in Queensland, Chemical Hazards and Emergency Management Unit, March 1991.

TABLE 3
SOIL ANALYSIS RESULTS - OCP

Parameter	LOR	MIL2	MIL3	EIT
ORGANOCHLORINE PESTICIDES				
a-BHC	0.05	<0.05	<0.05	-
HCB	0.05	<0.05	<0.05	-
b- & g-BHC	0.1	<0.1	<0.1	-
Heptachlor	0.05	<0.05	<0.05	-
Aldrin	0.05	<0.05	<0.05	-
Heptachlor epoxide	0.05	<0.05	<0.05	-
Chlordane-trans	0.05	<0.05	<0.05	-
Endosulfan I	0.05	<0.05	<0.05	-
Chlordane-cis	0.05	<0.05	<0.05	-
Dieldrin	0.05	<0.05	<0.05	0.2
DDE	0.05	<0.05	<0.05	-
Endrin	0.05	<0.05	<0.05	-
Endosulfan 2	0.05	<0.05	<0.05	-
DDD	0.05	<0.05	<0.05	-
Endrin aldehyde	0.05	<0.05	<0.05	-
Endosulfan sulfate	0.05	<0.05	<0.05	-
DDT	0.2	<0.2	<0.2	-
Endrin ketone	0.05	<0.05	<0.05	-
Methoxychlor	0.2	<0.2	<0.2	-
ORGANOPHOSPHORUS PESTICIDES				
Dichlorvos	0.05	<0.05	<0.05	-
Demeton-s- methyl	0.05	<0.05	<0.05	-
Monocrotophos	0.2	<0.2	<0.2	-
Dimethoate	0.05	<0.05	<0.05	-
Diazinon	0.05	<0.05	<0.05	-
Chlorpyrifos methyl	0.05	<0.05	<0.05	-
Parathion methyl	0.2	<0.2	<0.2	-
Malathion	0.05	<0.05	<0.05	-
Fenthion	0.05	<0.05	<0.05	-
Chlorpyrifos	0.05	<0.05	<0.05	-
Parathion	0.2	<0.2	<0.2	-
Pirimphos ethyl	0.05	<0.05	<0.05	-
Chlorfenvinphos E	0.05	<0.05	<0.05	-
Chlorfenvinphos Z	0.05	<0.05	<0.05	-
Bromophos ethyl	0.05	<0.05	<0.05	-
Fenamiphos	0.05	<0.05	<0.05	-
Prothiofos	0.05	<0.05	<0.05	-
Ethion	0.05	<0.05	<0.05	-
Carbofenthion	0.05	<0.05	<0.05	-
Azinphos methyl	0.05	<0.05	<0.05	-

Note: All results in mg/kg, dry weight, unless otherwise specified.

TABLE 4
SOIL ANALYSIS RESULTS - PAH

Parameter	LOR	MIL1	MIL4	HBIT	HILG
Naphthalene	0.5	<0.5	<0.5	-	-
2-Methylnaphthalene	0.5	<0.5	<0.5	-	-
2-Chloronaphthalene	0.5	<0.5	<0.5	-	-
Acenaphthylene	0.5	<0.5	<0.5	-	-
Acenaphthene	0.5	<0.5	<0.5	-	-
Fluorene	0.5	<0.5	<0.5	-	-
Phenanthrene	0.5	<0.5	<0.5	-	-
Anthracene	0.5	<0.5	<0.5	-	-
Fluoranthene	0.5	0.5	<0.5	-	-
Pyrene	0.5	0.5	<0.5	-	-
N-2-Fluorenylacetamide	0.5	<0.5	<0.5	-	-
Benz(a)anthracene	0.5	<0.5	<0.5	-	-
Chrysene	0.5	<0.5	<0.5	-	-
Benzo(b) & (k)fluoranthene	1	1	<1	-	-
7,12-Dimethylbenz(a)anthracene	0.5	<0.5	<0.5	-	-
Benzo(a)pyrene	0.5	<0.5	<0.5	-	1
3-Methylcholanthrene	0.5	<0.5	<0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	<0.5	<0.5	-	-
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	-	-
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	-	-
Total PAH		<10.5	<10.5	20	20

Note: All results in mg/kg, dry weight, unless otherwise specified.

TABLE 5
SOIL ANALYSIS RESULTS - TPH AND BTEX

Sample	Depth (m)	C ₆ -C ₉	C ₁₀ -C ₁₄	C ₁₅ -C ₂₈	C ₂₉ -C ₃₆	Benzene	Toluene	Ethylbenzene	Xylene
MIL1	0.3-0.6	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.4
MIL2	0.2-0.5	<2	<50	144	<100	<0.2	<0.2	<0.2	<0.4
MIL3	0.0-0.3	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.4
Level of Reporting		2	50	100	100	0.2	0.2	0.2	0.4
DIT		100 (C ₅ -C ₁₀)	100 (C ₁₀ -C ₁₆)	1000 (C ₁₇ ->)		7			

Note: All results in mg/kg, dry weight, unless otherwise specified.

5.0 ASSESSMENT OF CONTAMINATION POTENTIAL

Past industrial use of the site as a garage and by 'Better Brakes' may have led to soil contamination, particularly if the previous garage contained underground fuel storage tanks. There is insufficient information available to confirm whether contamination resulted from these activities. If contamination did occur it is likely to have been in the area which is now occupied by the underground car park and that it would have been removed off-site when excavation was carried out prior to construction.

Site inspection and subsurface investigation results indicate at least some soils have been imported. Chemical testing did not identify chemical parameters at significant levels within these soils.

Available information indicates groundwater resources within the area are not significant. The potential for contamination of groundwater is considered low, although we have no knowledge of any historical contamination from underground fuel storage tanks which may have existed in the past.

If the site maintains its current use then no further contamination investigation is required.

Pending confirmation from ongoing historical searches that garage operations previously existed on site, the owner may have some responsibility to advise the Department of Environment who may subsequently place the site on the Contaminated sites Register.

6.0 LIMITATIONS OF REPORT

This report has been prepared in a form suitable for submission to Kurts Developments Pty Ltd and the Director, Hazardous Waste and Contaminated Sites Section, Department of Environment. The report relates to land which is proposed for purchase and describes the results of a Phase 1 Environmental Due Diligence assessment of that land carried out by Dames and Moore at the request of the client.

The report has been prepared with reference to the *Guidelines for the Assessment of Contaminated Land in Queensland* (CHEM Unit, January 1992), and to a standard consistent with generally accepted and current professional consulting practice for this phase of work. No other warranty, expressed or implied, is made as to the contents of the report.

This report has not been prepared for the use by parties other than the client and their consulting advisers, and the Queensland Department of Environment. It may not contain sufficient information for purposes of other parties or for other uses.

It is recommended that any plans and specifications prepared by others and relating to the content of this report, or amendments to the original plans and specifications be reviewed by Dames & Moore to verify that the intent of our recommendations is properly reflected in the design.

Whilst to the best of our knowledge information contained in this report is accurate at the date of issue, subsurface conditions including groundwater levels and contaminant concentrations can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There are always some variations in subsurface conditions across a site which cannot be fully defined by investigation. Hence it is unlikely that the measurements and values obtained from sampling and testing during the investigation will represent the extremes of conditions which exist within the site.

Use of the land for any purpose whatsoever subsequent to the assessment reported herein is beyond the control of Dames & Moore, and as a result may affect or invalidate the conclusions presented in this report.

s78(B)(2)

Environmental Engineer
Geoscience and Environmental Engineering

Consultant-In-Charge
Geoscience and Environmental Engineering

APPENDIX A
LAND INFORMATION DATA



RECEIVED

28 AUG 1996

QUEENSLAND GOVERNMENT

Department of Environment

160 Ann Street • Brisbane Queensland • PO Box 155 • BRISBANE ALBERT STREET QLD 4002
Telephone (07) 3227 7111 • Facsimile (07) 3227 6534

Hazardous Waste and Contaminated Sites Section

(07) 3227 7370/(07) 2225 1957

Client Reference: ANDREW THOMAS:230896 REC.NO:7474

Cheque No:

Transaction Reference: 437043

DAMES & MOORE
PO BOX 251
SPRING HILL
QLD 4004

27 August 1996

Dear Sir/Madam

INQUIRY REGARDING CONTAMINATED LAND

I refer to your search request detailed below:

LOT 23 ON RP193152
159 CORONATION DRIVE
MILTON 4064

The above site is NOT included in the Contaminated Sites Register.
The information is accurate at the date given above.

To ensure an accurate search result for a BUP/GTP search it is
advised that the Lot on Plan for the base/underlying parcel also
be provided.

If you require an urgent search response, the CITEC SearchCall
number is 1800-67-66-77. The fee is \$25 per lot, payable by
credit card, and the result is faxed or mailed.

Yours faithfully

sch 4 - signature

David N. Miles
Director, Waste Management Branch
Division of Environment

B C PAYNE197 Thynne Road
MORNINGSIDE QLD 4170Phone (07) 899 1711
Fax (07) 899 1711

Andrew Thomas

(Historical Search
Paper Copy)

sch 4 - signature

Page 1 of 2 DocId: 18009058

CERTIFICATE OF TITLE

(Page 1)

73399

Dealing No.: R288593G

Vol. 8009 Fol. 58

QUEENSLAND

VOL: 8009 FOLIO: 058



18009058

Previous Titles:

Vol. 7048 Fol. 179 and 180



Issued: 6 August, 1990

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such easements encumbrances and interests as are shown in the Second Schedule.

Witness

18-xxx

File A

ESTATE AND LAND

Registrar of Titles.



203

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

The within land cancelled vide Vol. 8479

Fol. 179

FULLY CANCELLED

Reg N/T

1331000

14 FEB 1992

22 FEB 1995

RECORDED

Fol. 58

SECOND SCHEDULE (continued)

NATURE	INSTRUMENT NUMBER	PRODUCED	PARTICULARS	RECORDED	CANCELLATION INSTRUMENT	
					NUMBER	PRODUCED
Sub-Lease	3556/789	29 JUL 1988	of Lease No. 1514205 of part of the ground floor to Parity Computer Limited from 1 FEB 1986 to 30 OCT 1990.	7 FEB 1988		
Lease	39398851	13 MAR 1988	of Lease No. 1514205 of part of the ground floor to Parity Computer Limited from 1 FEB 1986 to 30 OCT 1990.	27 SEP 1988	K55/9200	25 FEB 1991 - 4 APR 1991
*Lease	K60045P	30 OCT 1989	of part of the ground floor to the Colonial Mutual Life Assurance Society Limited from 1 APR 1988 to 31 AUG 1991.	26 OCT 1989		
Sub/Lease	K8916504	3 MAR 1992	of Lease No. 1514205 of parts of the first, second and third floors to IDL Australia Pty Limited from 1 OCT 1991 to 30 OCT 1996	13 FEB 1992		
Sub/Lease	K891652R	3 MAR 1992	of Lease No. 1514205 of part of the lower basement floor to IDL Australia Pty Limited from 1 OCT 1991 to 30 OCT 1996	13 FEB 1992		
Lease	L140638C	6 AUG 1992	of part of the second floor to Star Systems Pty Ltd from 1 APR 1992 to 31 MAR 1998	21 SEP 1992		

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR OF TITLES ARE CANCELLED.

* Dealings with this Lease will be Recorded on the Original Lease only instead of on this Certificate of Title.

Estate in Fee Simple in Lot 23 on RP193152 County of Stanley Parish of Enoggera
City of Brisbane
Containing 3973 square metres

FIRST SCHEDULE

THE QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD

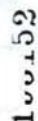
SECOND SCHEDULE

1. Rights and interests reserved to the Crown by Deed of Grant No. 85866 (Por 1N).
2. Lease No. H514203 of parts of the ground, first, second and third floors to The Shell Company of Australia Limited for 12 years from 1 Nov 1984 Produced 8 Feb 1985 Registered 3 May 1985.
3. Lease No. H514206 of parts of the lower and upper basement floors to The Shell Company of Australia Limited for 12 years from 1 Nov 1984 Produced 8 Feb 1985 Registered 3 May 1985.
4. Lease No. H738498 of the whole of the third floor to Adco Constructions Pty. Ltd. for 5 years from 1 Jul 1985 Produced 30 Oct 1985 Registered 6 Jan 1986.
5. Lease No. H773795 of part of the second floor to Electric Power Transmission Pty Limited for 6 years from 1 Jul 1985 Produced 12 Dec 1985 Registered 2 Jun 1987.
6. Lease No. H928909 of part of the ground floor to CBS Records Australia Limited for 5 years from 1 Sep 1985 Produced 28 Jul 1986 Registered 2 Jun 1987.
7. Lease No. H928910 of part of the first floor to The Colonial Mutual Life Assurance Society Limited for 6 years from 1 Sep 1985 Produced 28 Jul 1986 Registered 2 Jun 1987.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR OF TITLES ARE CANCELLED
PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON
FOR DETAILS OF DESCRIPTION, DIMENSIONS AND MARKING OF BOUNDARIES REFER TO
SURVEY PLAN REFERRED TO ABOVE.

WARNING - FOLDING OR MUTILATING WILL LEAD TO REJECTION - PLAN MAY BE ROLLED

J.L & RTP



Ed. Pinkham

REFERENCE MARK CONNECTIONS
ARE FROM THE CORNER TO THE
MARK.

CROWN COPYRIGHT RESERVED; REGISTRAR OF TITLES, QUEENSLAND

WARNING - FOLDING OR MUTILATING WILL LEAD TO REJECTION - PLAN MAY BE ROLLED

CERTIFICATE

I, Raymond Terrence PINKHAM , of Bennett & Francis Pty. Ltd.
hereby certify that I have surveyed the land
comprised in this plan personally.....

that the plan is accurate, that the said survey was performed in accordance with
the "Surveyors Act 1977" and the "Surveyors Regulation 1978" and that the
said survey was completed on .8.10.84

Signature of Licensed Surveyor
R.P. Williams

Date .12-10-84

Council of theof certifies
that all the requirements of this Council, the Local Government Acts of 1936 to
19... and all By-Laws have been complied with and approves this Plan of Subdivision
as City of Brisbane Acts 1924-19... The City of Brisbane Town Planning Acts
1964 to 19... and all ordinances thereunder have been complied with and
approves this plan of subdivision subject to

Dated this ... day of JULY 1984
Mayor
Clerk

1/Wo CAPCOUNT AUSTRALIA PTY LIMITED AND
AETNA PROPERTIES LIMITED
(Names in full)

As Proprietor / s of this land, agree to this Plan and dedicate the new roads shown
hereon to public use.

Signature of
Proprietor / s

The COMMON SEAL OF AETNA PROPERTIES
LIMITED was hereunto duly affixed by
authority of the Board of Directors.

Lodged by
Williams & Williams

Fees Payable
Postal fee and Postage
Lodgt.Exam. & Ass.
Entd. on Docs.
New Title
Entd. on Deeds/Vol.
Photo Fee
Total
Short Fees Paid

Received
Registrar of Titles
Receipt No.
59348

REGISTRATION FEE
23-12-86
Paid Vnde No. G36595

RECEIVED
REC'D OF TITLES
MAY 28 9 11 AM

193152

REGISTERED PLAN 193152



CURRENT TITLE SEARCH

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Request No: 343001
Search Date: 23/08/1996 1:46 pm

Title Reference: 18479179
Date Created: 25/02/1993

Previous Title: 18009058

REGISTERED OWNER

THE QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD

ESTATE AND LAND

Estate in Fee Simple

LOT 23 REGISTERED PLAN 193152
County of STANLEY Parish of ENOGGERA

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 10941126 (POR 1N)
2. LEASE No 601531531 (H514205) 08/02/1985
OF PARTS OF THE GROUND, FIRST, SECOND AND THIRD FLOORS
TO THE SHELL COMPANY OF AUSTRALIA LIMITED
FOR 12 YEARS
COMMENCING 01 NOV 1984
3. SUB LEASE No 601531533 (J556789P) 29/07/1988
OF LEASE NO H514205
OF PART OF THE GROUND FLOOR
TO PARITY COMPUTER LIMITED
COMMENCING 01 FEB 1986
TERMINATING 31 OCT 1990
4. SUB LEASE No 601531534 (J909685H) 11/05/1989
OF LEASE NO H514205
OF PART OF THE GROUND FLOOR
TO DANOWAY PTY LTD
COMMENCING 11 JUN 1987
TERMINATING 10 JUN 1993
5. SUB LEASE No 601531535 (K891650M) 03/01/1992
OF LEASE NO H514205
OF PARTS OF THE FIRST, SECOND AND THIRD FLOORS
TO ICL AUSTRALIA PTY LIMITED
COMMENCING 01 OCT 1991
TERMINATING 30 OCT 1996
6. LEASE No 601531532 (H514206) 08/02/1985
OF PARTS OF THE LOWER AND UPPER BASEMENT FLOORS
TO THE SHELL COMPANY OF AUSTRALIA LIMITED
FOR 12 YEARS
COMMENCING 01 NOV 1984



CURRENT TITLE SEARCH

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Request No: 343001

Search Date: 23/08/1996 1:46 pm

Title Reference: 18479179

Date Created: 25/02/1993

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

7. SUB LEASE No 601531536 (K891652R) 03/01/1992
OF LEASE NO H514206
OF PART OF THE LOWER BASEMENT FLOOR
TO ICL AUSTRALIA PTY LIMITED
COMMENCING 01 OCT 1991
TERMINATING 30 OCT 1996
8. LEASE No 601531537 (L140635C) 06/08/1992
OF PART OF THE SECOND FLOOR
TO STAR SYSTEMS PTY LTD
COMMENCING 01 APR 1992
TERMINATING 31 MAR 1998
9. LEASE No 601531538 (L218838X) 07/10/1992
OF PART OF THE FIRST FLOOR
TO THE COLONIAL MUTUAL LIFE ASSURANCE SOCIETY LIMITED
COMMENCING 01 SEP 1991
TERMINATING 31 AUG 1995
10. LEASE No 601531540 (L280498F) 25/11/1992
OF PART OF THE THIRD FLOOR
TO BURNS PHILP PACIFIC EQUITIES PTY LIMITED
COMMENCING 01 SEP 1992
TERMINATING 31 AUG 1996
11. LEASE No 601531541 (L478495X) 07/05/1993
OF PART OF THE SECOND FLOOR
TO COMPUTEX AUSTRALIA PTY LTD
COMMENCING 01 APR 1993
TERMINATING 31 MAR 1996
12. TRANSFER No 700869729 21/09/1995 at 16:12
of
LEASE: 601531541 (L478495X)
to
STAR SYSTEMS PTY LTD
13. LEASE No 700267755 05/10/1994 at 14:27
To
BPT SOUTH PACIFIC PTY LTD
PART OF THE THIRD FLOOR
FROM 1/SEP/1992
TO 31/AUG/1996



CURRENT TITLE SEARCH

DEPT. OF NATURAL RESOURCES, QUEENSLAND

Request No: 343001
Search Date: 23/08/1996 1:46 pm

Title Reference: 18479179
Date Created: 25/02/1993

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

14. LEASE No 700960752 23/10/1995 at 12:57
to
STAR SYSTEMS PTY LTD
Original term commencing
01/09/1995
Terminating
31/03/1998
with options as therein stated
OVER PART OF THE GROUND FLOOR OF A BUILDING (LEASE GA)
15. LEASE No 701474416 02/08/1996 at 14:37
to
J.J.B. CONSTRUCTIONS PTY. LTD. ACN 005 420 664
Original term commencing
11/04/1996
Terminating
10/04/1999
with options as therein stated
PART OF THE GROUND FLOOR (LEASE GB) OF A BUILDING

ADMINISTRATIVE ADVICES - NIL

UNREGISTERED DEALINGS

Dealing Type
701503223 LEASE

Lodgement Date Status
20/08/1996 12:02 UNVERIFIED

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Current Title Search **

Requested By: External Token



DEPT. OF NATURAL RESOURCES

I.V.A.S.

Report Id : PURPRPEP

Report Name : Property Report

Database : lavlpdb1

Requested By : landbsr

District Office : BRISBANE

Date : 23/08/96 13:46:57

For Property

Local Authority/Division = BCC - TOOWONG

Valuation Number = 73/000000

Last Sale in 1990

THE INFORMATION CONTAINED IN THIS REPORT INCORPORATES
INFORMATION OBTAINED FROM SOURCES OUTSIDE THIS DEPARTMENT.
WHILST EVERY EFFORT IS MADE TO VERIFY THE ACCURACY OF SUCH
INFORMATION THE DEPARTMENT IS UNABLE TO GUARANTEE SUCH
INFORMATION.

LA/Div : 014 BCC - TOOWONG
Valn No : 73/00000

Property Address : 157 CORONATION DVE, MILTON, 4064
Frontage : 0.00 metres Depth : 0.00 metres

Owners : QUEENSLAND LOCAL GOVERNMENT SUPERANNUATION BOARD

Tenants in Common : N
Exempt from Rating : N

Service Address : GPO BOX 264
BRISBANE, QLD, 4001

RPD : L23/RP193152<16978025>:PAR ENOGGERA

Tenure : FH FREEHOLD
Area : 3973M2

Rental Value Required : N

Valuation Information:-

Date of Effect	Date of Valn.	Unimproved Value	Sect Code	Date of Issue
30/06/96	01/01/96	\$ 2,600,000	28	26/02/96

Land Use Information:-

L/Use Type : AV
L/Use Type : P
L/Use Type : S
L/Use Code : 25 PROFESSIONAL OFFICES
L/Use Code : 25 PROFESSIONAL OFFICES
L/Use Code : 00 SECONDARY LAND USE ONLY

Number of Lots : 1 Business Indicator : Y

Property Type : U URBAN
Issuing Status : I ISSUING
Services : WS WATER & SEWERAGE
Zoning : 19 SPL DEV. MILTON - COM AND RETA

Map Nos : 1044000000

Continued on next page ...



DEPT. OF NATURAL RESOURCES
23/08/96 13:46

I.V.A.S.
Property Report

PURPRREP
Page: 3

THE INFORMATION CONTAINED IN THIS REPORT INCORPORATES
INFORMATION OBTAINED FROM SOURCES OUTSIDE THIS DEPARTMENT.
WHILST EVERY EFFORT IS MADE TO VERIFY THE ACCURACY OF SUCH
INFORMATION THE DEPARTMENT IS UNABLE TO GUARANTEE SUCH
INFORMATION.

SMA : 4

Financial Div : 0
Benefitted Area ID :

Cancelled Property : N



Disclosed on DES
RTI Act 2009

END OF REPORT

=====

APPENDIX B
CERTIFICATES OF ANALYSIS

SRAEB05715

**SAMPLE RECEIPT ADVICE**

COMPANY: DAMES & MOORE
ATTENTION: s78(B)(2)
DATE: Aug. 26, 1996
FROM: Jodie WEAVER, ENV BRISBANE

ALS has received samples pertaining to your reference: TBA

For future reference the batch number on this order is: EB05715

All samples and paper work were received in good order.

Samples chilled when received.

Samples received in appropriately pretreated and preserved containers.

Please direct any turnaround/technical queries to Ian WALLACE

Any queries relating to sample condition/numbering/breakages should be directed to Jodie Weaver

You can expect results to be reported as detailed below:

All Environmental Results

Aug. 27, 1996

Comments:

A L S - SERVICING YOUR NEEDS BETTER

AUSTRALIAN LABORATORY SERVICES P/L
A.C.N. 009 936 029

Bone
(07) 352 5577
(07) 352 5109

Sydney
Phone (02) 899 5722
Fax (02) 899 3200

Melbourne
Phone (03) 853 5299
Fax (03) 853 0730

Perth Laboratory
Phone (09) 249 2988
Fax (09) 249 2942



135 WICKHAM TERRACE, SPRING HILL, BRISBANE, QUEENSLAND 4004
IN AUSTRALIA TELEPHONE: 07-832 3222 FACSIMILE: 07-832 1687
INTERNATIONAL TELEPHONE: 61-7-321 3222 FACSIMILE: 61-7-832-1687

CHAIN OF CUSTODY

Please sign and fax back on receipt!

[illegible]

Shipping Method & Date: _____
Shipped To: Australian Laboratory Services Attention: Jodie Weaver
Address: 32 Shand Street, Stafford Qld 4053

RECEIVED BY:

Date: 23/8/96

Date: 02/31/11

Explain:

E MOORE

Location: MR A THOMAS

Order: 7709

Sample Type: SOIL

Site: CORONATION DRIVE

Page-no: 1

ENV BRISBANE

Batch-no: 5715

Sub-batch: 0

No-samples: 3

Received: 23/08/96

Checked:

Code	Analysis description	Units	LOR	MIL1	MIL2	MIL3
				23/08/96	23/08/96	23/08/96
05	Moisture Content (dried @ 103° x		0.1	13.4	13.0	9.5
05T	Arsenic - Total	mg/kg	1	5	2	<1
5T	Cadmium - Total	mg/kg	1	<1	<1	<1
5T	Chromium - Total	mg/kg	1	13	14	14
5T	Copper - Total	mg/kg	1	14	18	8
05T	Nickel - Total	mg/kg	1	9	10	9
05T	Lead - Total	mg/kg	1	111	93	25
5T	Zinc - Total	mg/kg	1	73	72	34
0T	Mercury - Total	mg/kg	0.1	0.1	0.2	<0.1

Samples as received digested by USEPA method 3051 prior to the determination of metals. Results reported on a dry weight basis. Part complete. Zinc checks in progress.



S & MOORE

ation: MR A THOMAS
 Order: 7709
 leType: SOIL
 act: CORONATION DRIVE

Page-no: 1
 ENV BRISBANE
 Batch-no: 5715
 Sub-batch: 2
 No-samples: 2
 Received: 23/08/96
 Checked:

Mod	Analysis description	Units	LOR	MIL1	MIL4
				23/08/96	23/08/96
55	Moisture Content (dried @ 103' x		0.1	13.4	22.5
175B-SS	POLYNUCLEAR AROMATICS				
175B-SS	Naphthalene	mg/kg	0.5	<0.5	<0.5
175B-SS	2-Methylnaphthalene	mg/kg	0.5	<0.5	<0.5
175B-SS	2-Chloronaphthalene	mg/kg	0.5	<0.5	<0.5
175B-SS	Acenaphthylene	mg/kg	0.5	<0.5	<0.5
175B-SS	Acenaphthene	mg/kg	0.5	<0.5	<0.5
175B-SS	Fluorene	mg/kg	0.5	<0.5	<0.5
175B-SS	Phenanthrene	mg/kg	0.5	<0.5	<0.5
175B-SS	Anthracene	mg/kg	0.5	<0.5	<0.5
175B-SS	Fluoranthene	mg/kg	0.5	0.5	<0.5
175B-SS	Pyrene	mg/kg	0.5	0.5	<0.5
175B-SS	N-2-Fluorenylacetamide	mg/kg	0.5	<0.5	<0.5
175B-SS	Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5
175B-SS	Chrysene	mg/kg	0.5	<0.5	<0.5
175B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	1	<1
5B-SS	7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	<0.5	<0.5
5B-SS	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5
5B-SS	3-Methylcholanthrene	mg/kg	0.5	<0.5	<0.5
175B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5
175B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5
175B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5

Samples analysed on an as received basis. Results reported on a dry weight basis.

J & MOORE

Attention: MR A THOMAS

Order: 7709

Sample Type: SOIL

Location: CORONATION DRIVE

Page-no: 1

ENV BRISBANE

Batch-no: 5715

Sub-batch: 1

No-samples: 3

Received: 23/08/96

Checked:

Code	Analysis description	Units	LOR	MIL1	MIL2	MIL3
				23/08/96	23/08/96	23/08/96
55	Moisture Content (dried @ 103° C)	%	0.1	13.4	13.0	9.5
171-SS	TOTAL PETROLEUM HYDROCARBONS					
171-SS	C6 - C9 Fraction	mg/kg	2	<2	<2	<2
171-SS	C10 - C14 Fraction	mg/kg	50	<50	<50	<50
171-SS	C15 - C28 Fraction	mg/kg	100	<100	144	<100
171-SS	C29 - C36 Fraction	mg/kg	100	<100	<100	<100
180-SS	BTEX					
180-SS	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2
180-SS	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2
180-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2
180-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2
0-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2
0-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2

Samples analysed on an as received basis. Results reported on a dry weight basis.



 & MOORE

tion: MR A THOMAS
 Order: 7709
 leType: SOIL
 ct: CORONATION DRIVE

Page-no: 1
 ENV BRISBANE
 Batch-no: 5715
 Sub-batch: 3
 No-samples: 2
 Received: 23/08/96
 Checked:

Mod	Analysis description	Units	LOR	MIL2	MIL3
				23/08/96	23/08/96
5	Moisture Content (dried @ 103° %		0.1	13.0	9.5
168A-SS	ORGANOCHLORINE PESTICIDES				
168A-SS	a-BHC	mg/kg	0.05	<0.05	<0.05
8A-SS	HCB	mg/kg	0.05	<0.05	<0.05
8A-SS	b- & g-BHC	mg/kg	0.1	<0.1	<0.1
168A-SS	d-BHC	mg/kg	0.05	<0.05	<0.05
168A-SS	Heptachlor	mg/kg	0.05	<0.05	<0.05
8A-SS	Aldrin	mg/kg	0.05	<0.05	<0.05
8A-SS	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05
8A-SS	Chlordane - Trans	mg/kg	0.05	<0.05	<0.05
168A-SS	Endosulfan 1	mg/kg	0.05	<0.05	<0.05
8A-SS	Chlordane - Cis	mg/kg	0.05	<0.05	<0.05
8A-SS	Dieldrin	mg/kg	0.05	<0.05	<0.05
8A-SS	DDE	mg/kg	0.05	<0.05	<0.05
168A-SS	Endrin	mg/kg	0.05	<0.05	<0.05
168A-SS	Endosulfan 2	mg/kg	0.05	<0.05	<0.05
8A-SS	DDD	mg/kg	0.05	<0.05	<0.05
8A-SS	Endrin aldehyde	mg/kg	0.05	<0.05	<0.05
168A-SS	Endosulfan sulfate	mg/kg	0.05	<0.05	<0.05
168A-SS	DDT	mg/kg	0.2	<0.2	<0.2
8A-SS	Endrin ketone	mg/kg	0.05	<0.05	<0.05
8A-SS	Methoxychlor	mg/kg	0.2	<0.2	<0.2
8B-SS	ORGANOPHOSPHORUS PESTICIDES				
168B-SS	Dichlorvos	mg/kg	0.05	<0.05	<0.05
8B-SS	Demeton-s-methyl	mg/kg	0.05	<0.05	<0.05
8B-SS	Monocrotophos	mg/kg	0.2	<0.2	<0.2
8B-SS	Dimethoate	mg/kg	0.05	<0.05	<0.05
168B-SS	Diazinon	mg/kg	0.05	<0.05	<0.05
168B-SS	Chlorpyrifos methyl	mg/kg	0.05	<0.05	<0.05
8B-SS	Parathion methyl	mg/kg	0.2	<0.2	<0.2
8B-SS	Malathion	mg/kg	0.05	<0.05	<0.05
168B-SS	Fenthion	mg/kg	0.05	<0.05	<0.05
168B-SS	Chlorpyrifos	mg/kg	0.05	<0.05	<0.05

Samples analysed on an as received basis. Results reported on a dry weight basis.

S & MOORE

tion: MR A THOMAS
 rder: 7709
 leType: SOIL
 lect: CORONATION DRIVE

Page-no: 2
 ENV BRISBANE
 Batch-no: 5715
 Sub-batch: 3
 No-samples: 2
 Received: 23/08/96
 Checked:

Method	Analysis description	Units	LOR	MIL2	MIL3
				23/08/96	23/08/96
	8B-SS Parathion	mg/kg	0.2	<0.2	<0.2
	8B-SS Pirimphos ethyl	mg/kg	0.05	<0.05	<0.05
	168B-SS Chlorfenvinphos E	mg/kg	0.05	<0.05	<0.05
	8B-SS Chlorfenvinphos Z	mg/kg	0.05	<0.05	<0.05
	8B-SS Bromophos ethyl	mg/kg	0.05	<0.05	<0.05
	8B-SS Fenamiphos	mg/kg	0.05	<0.05	<0.05
	168B-SS Prothiofos	mg/kg	0.05	<0.05	<0.05
	168B-SS Ethion	mg/kg	0.05	<0.05	<0.05
	8B-SS Carbofenthion	mg/kg	0.05	<0.05	<0.05
	8B-SS Azinphos methyl	mg/kg	0.05	<0.05	<0.05



DAMES & MOORE PTY LTD
A DAMES & MOORE COMPANY

HAZARDOUS WASTES AND
CONTAMINATED SITES SECTION

08 OCT 1997

REPORT

**Stage II Contaminated Land Assessment
159 Coronation Drive, Milton**

for

Kurts Developments Limited

DAMES & MOORE
Ref: SM/26101008/BBN
23 October 1996

135 WICKHAM TERRACE
Brisbane Qld 4000
Tel: 07 3832 3222
Fax: 07 3832 1687
A.C.N. 003 293 696

STAGE II CONTAMINATED LAND ASSESSMENT

159 CORONATION DRIVE, MILTON

1. INTRODUCTION

Dames & Moore (D&M) was commissioned by Kurts Developments Limited (Kurts) to conduct a Stage II Contaminated Land Assessment of the property located at 159 Coronation Drive, Milton, Queensland. Prior to this assessment D&M had completed a Preliminary Environmental Assessment Report. The objective of the Stage II Assessment was to identify and delineate any possible areas of impacted soil or water identified during the previous phase of work.

1.1 BACKGROUND

During the Preliminary Environmental Assessment it was revealed that at least part of the site was used for a prescribed purpose, that of a petroleum service station or brake servicing shop. Though the site is not listed on the Contaminated Sites Register (CSR), the results of these findings could lead to the site being listed by the Department of Environment (DoE) as a 'Probable' contaminated site.

Our findings prompted the drilling of three wells at the corner of the site previously occupied by the service station and the brake shop. This building is a commercial high-rise with a subsurface basement to a depth of 1-3 metres below surrounding ground level. Results of this initial borehole program suggested further investigation was necessary.

1.2 SCOPE OF WORK

The scope of work for this Stage II Contaminated Land Assessment included:

1. The installation of three soil borings with one borehole completed as a monitoring well and associated laboratory analysis and office analysis;

2. Consultation in the form of two meetings with the Samut & Co and the DoE, for the development of a sample location strategy;
3. Site plans and aerial photographs were used to locate the position of the original petroleum service station;
4. Six soil borings were drilled in the basement with the use of a concrete corer and a hand-auger;
5. Two additional monitoring wells were installed and developed outside of the building to assist in the determination of groundwater flow and gradient;
6. The monitoring wells were developed and sampled; and,
7. All soil and water samples were analysed by Australian Laboratory Services (ALS), a NATA-approved laboratory for:
 - Total Petroleum Hydrocarbons and Benzene, Toluene, Ethylbenzene and Xylene (TPH/BTEX) for 17 samples;
 - Suite of eight metals: As, Cd, Cr, Cu, Hg, Ni, Pb, Zn for 17 samples;
 - Polyaromatic Hydrocarbons (PAH) with Phenols for 3 samples; and,
 - Organochlorine and Organophosphorus (OC/OP) for 1 samples.

2. SITE DESCRIPTION

2.1 LOCATION AND PROPERTY DESCRIPTION

The subject site is located at 159 Coronation Drive, at the corner of Cribb Street and Coronation Drive, Milton. The real property description of the site is Lot 23 on RP193152, County of Stanley, Parish of Enoggera, City of Brisbane. This lot and plan description covers both the subject site at 159 Coronation Drive and 5 Cribb Street and covers an area of 3,973 m². The local authority is Brisbane City Council (BCC) and the site is zoned *Special Development* or *Commercial and Retail* under the Milton Development Control Plan.

2.2 GEOLOGY

Inspection of the Brisbane 1:100,000 geological map (sheet 9543, edition 1, 1986) indicates the site contains anthropogenic deposits (fill) consisting typically of mud, sand and rubble. This fill is underlain by undifferentiated alluvial plains comprising sand, silt, clay and gravel. These alluvial plains overlie Bunya Phyllite comprising phyllite, chert, and minor micaceous meta-arenite.

2.3 TOPOGRAPHY

Inspection of the Brisbane 1:50,000 topographical map (sheet 9543-III, edition 1, series R.733) indicates the site is located at various levels between 5 and 10 m above sea level on the lower end of a ridge running north-west towards Red Hill. The site has been levelled out as a result of development but the natural slope would have fallen away to the south-east towards the Brisbane River. The surrounding area also tends to slope towards the Brisbane River.

2.4 HYDROGEOLOGY

The Bunya Phyllite is relatively impermeable; ground water is likely confined to the alluvial plains. Depth to ground water is expected to be about 2 m below ground level with groundwater flow towards the Brisbane River.

It is considered highly unlikely that there are any ground water users in the immediate area due to marginal water quality, i.e. high salinity, and expected poor yields.

3. FIELD INVESTIGATIONS

3.1 SUBSURFACE INVESTIGATION

In response to verbal authorisation by Kurts personnel, D&M engineers were on site on 12 September 1996 to drill three boreholes (BH1, BH2, and BH3) to assist in the identification of possible contamination existing near the corner of Coronation Drive and Cribb Street. Boreholes BH2 and BH3 were drilled to depths of 4 and 3.5 metres respectively and sampled at 1 metre intervals. BH1 was drilled, logged and sampled to a total depth of 7.5 metres and was then converted to a monitoring well. Figure 1 presents the borehole locations.

Additional work was undertaken on 9 October 1996 to assist in the delineation of the impacted area. This work included the drilling of 6 boreholes (BH6, BH7, BH8, BH9, BH10, and BH11) with the use of a concrete corer and a hand auger to depths between 0.55 metres to 0.81 metres below the floor of the lower basement level for soil sample collection. Drilling logs were completed and photo-ionisation detector (PID) screenings were undertaken for each hole. Soil samples were taken from each discrete soil layer identified within each hole.

Two additional boreholes (BH4 and BH5) were drilled outside of the building with the use of mechanical augers. Due to poor access conditions, a trailer-mounted Jacro 100 solid flight auger rig was used to drill BH4 to a maximum depth of 7.3 metres. Due to the sample disruption and subsequent volatilisation of volatile organics (ie light-chain hydrocarbons, BTEX compounds) caused by solid flight augers, no samples or discrete PID screenings were taken during drilling. On completion of drilling, borehole BH4 was converted to a monitoring well, developed and later sampled.

Borehole BH5 was drilled to a depth of 5.81 metres with the use of a Gemco hollow stem auger drilling rig. Soil samples were taken at the surface, at 0.5 metres, and at 1-metre intervals thereafter. PID screenings were undertaken both downhole and for each discrete sample. PID readings are reported with the attached geological logs in the Appendix. On completion of drilling, borehole BH5 was converted to a monitoring well developed and later sampled.

A groundwater sampling round was conducted on 11 October 1996. Groundwater samples were collected from monitoring wells BH1 (incorrectly reported as BH3 in the laboratory results), BH4 and BH5. Prior to sampling, each monitoring well was purged of three to five well volumes, and allowed to recharge before sampling.

3.2 LABORATORY ANALYSIS

Soil and groundwater samples were sent to Australian Laboratory Services Pty Ltd (ALS), at Stafford, for analysis. Certificates of Analysis are attached as Appendix B. The Chain of Custody form and Sample Receipt Advice are also included in Appendix B.

Soil samples collected on 12 September 1996 from bore holes BH1, BH2, and BH3 were analysed for TPH, BTEX compounds and lead. The results of sample analysis are presented in Tables 1 and 2. The water sample collected from monitoring well BH1 was also analysed for TPH, BTEX compounds and lead. The results of sample analysis are presented in tables 4 and 5.

Selected samples (BH5-2, BH5-4, BH5-5, BH5-6, BH6-3, BH7-2, BH8-2, BH9-2, BH10-2, BH10-3, and BH11-2) were analysed for total petroleum hydrocarbons (TPH's), polynuclear aromatic hydrocarbons (PAH's), benzene, ethylbenzene, toluene, and xylene (BTEX compounds) and a suite of eight heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb and Zn). The results of sample analysis are presented in Tables 1, 2, and 3. The PID readings were taken immediately after the concrete cutting was complete. PID screening results are presented on the drilling logs. Drilling logs are attached in Appendix B.

Soil samples (BH5-2, BH10-2, BH10-3 and BH11-2) were analysed for PAH's. The results of sample analysis are presented in Table 3.

All groundwater samples were analysed for TPH, BTEX compounds and metals (As, Cd, Cr, Cu, Hg, Ni, Pb and Zn). The results of sample analysis are presented in Tables 4 and 5.

TABLE 1
SOIL ANALYSIS RESULTS - TPH AND BTEX

Sample	Depth (m)	C6-C9	C10-C14	C15-C28	C29-C36	Benzene	Toluene	Chloro-benzene	Ethyl-benzene	Xylene
Sampled 12/09/96										
BH1-2	1.8 - 2.0	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH1-3	2.8 - 3.0	44	230	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH1-4	3.8 - 4.0	522	210	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH1-6	7.3 - 7.5	158	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH2-1	0.8 - 1.0	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH2-2	1.8 - 2.0	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH2-3	2.8 - 3.0	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH2-4	3.8 - 4.0	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH3-1	2.6	157	68	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH3-2	3.6	13	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
Sampled 09/10/96										
BH5-2	0.4 - 0.6	<2	<50	1510	558	<0.2	<0.2	<0.2	<0.2	<0.4
BH5-4	2 - 2.2	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH5-5	3 - 3.2	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH5-6	4 - 4.2	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH6-3	0.5	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH7-2	0.5	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH8-2	0.7	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH9-2	0.6	4	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH10-2	0.6	71	114	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH10-3	0.2-0.5	172	204	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
BH11-2	0.0-0.3	<2	<50	<100	<100	<0.2	<0.2	<0.2	<0.2	<0.4
Level of Reporting		2	50	100	100	0.2	0.2	0.2	0.2	0.4
DIT		100 (C5-C10)	100 (C10-C16)	1000 (C17->)	7					

Notes: All results in mg/kg, dry weight, unless otherwise specified.
Bolded and shaded values indicates a value which exceeds threshold limits.

Metals results are given in Table 2 and have been tabled with Environmental Investigation Thresholds (EIT) and Health Based Investigation Thresholds (HBIT)¹ TPH results are given in

¹ Guidelines for the Assessment of Contaminated Land in Queensland, Chemical Hazards and Emergency Management Unit, January 1992.

Table 5 and have been tabled with Draft Investigation Thresholds (DIT)² Levels of reporting (LOR) have been included within these tables.

TABLE 2
SOIL ANALYSIS RESULTS - METALS

Sample	Depth (m)	Arsenic	Cadmium	Chromium	Copper	Nickel	Lead	Zinc	Mercury
Sampled 12/09/96									
BH1-2	1.8 - 2.0	NA	NA	NA	NA	NA	21	NA	NA
BH1-3	2.8 - 3.0	NA	NA	NA	NA	NA	8	NA	NA
BH1-4	3.8 - 4.0	NA	NA	NA	NA	NA	7	NA	NA
BH1-6	7.3 - 7.5	NA	NA	NA	NA	NA	8	NA	NA
BH2-1	0.8 - 1.0	NA	NA	NA	NA	NA	28	NA	NA
BH2-2	1.8 - 2.0	NA	NA	NA	NA	NA	6	NA	NA
BH2-3	2.8 - 3.0	NA	NA	NA	NA	NA	4	NA	NA
BH2-4	3.8 - 4.0	NA	NA	NA	NA	NA	9	NA	NA
Sampled 09/10/96									
BH5-2	0.4 - 0.6	7	<0.1	13	41	14	180	112	0.2
BH5-4	2 - 2.2	6	<0.1	36	12	21	4	36	<0.1
BH5-5	3 - 3.2	7	<0.1	29	12	18	6	35	<0.1
BH5-6	4 - 4.2	4	<0.1	31	13	18	6	41	<0.1
BH6-3	0.5	3	<0.1	33	41	21	11	45	<0.1
BH7-2	0.5	10	<0.1	19	25	11	16	44	<0.1
BH8-2	0.7	9	<0.1	39	16	20	8	39	<0.1
BH9-2	0.6	12	<0.1	12	64	4	20	50	0.1
BH10-2	0.6	11	<0.1	33	53	17	12	37	<0.1
BH10-3	0.2-0.5	<1	<0.1	44	20	25	6	53	<0.1
BH11-2	0.0-0.3	<1	<0.1	31	13	17	6	35	<0.1
Level of Reporting		1	1	1	1	1	1	1	0.1
EIT		20	3	50	60	60	300	200	1
HBIT		100	20	-	-	-	300	-	-

Note: All results in mg/kg, dry weight, unless otherwise specified.
Bolded and shaded values indicates a value which exceeds threshold limits.

² Draft Guidelines for Assessment of Contaminated Land in Queensland, Chemical Hazards and Emergency Management Unit, March 1991.

TABLE 3
SOIL ANALYSIS RESULTS - PAH

Parameter	LOR	BH5-2	BH10-2	BH10-3	BH11-2
Naphthalene	0.5	<1.0	<0.5	<0.5	<0.5
2-Methylnaphthalene	0.5	<1.0	<0.5	<0.5	<0.5
2-Chloronaphthalene	0.5	<1.0	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<1.0	<0.5	<0.5	<0.5
Acenaphthene	0.5	1.5	<0.5	<0.5	<0.5
Fluorene	0.5	0.8	<0.5	<0.5	<0.5
Phenanthrene	0.5	14.1	<0.5	<0.5	<0.5
Anthracene	0.5	5.8	<0.5	<0.5	<0.5
Fluoranthene	0.5	>11.5	1.8	1.6	<0.5
Pyrene	0.5	>11.5	1.3	1.2	<0.5
N-2-Fluorenylacetamide	0.5	<1.0	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	15.5	<0.5	<0.5	<0.5
Chrysene	0.5	12.5	<0.5	<0.5	<0.5
Benzo(b) & (k)fluoranthene	1	29	<1	<1	<1
7,12-Dimethylbenz(a)anthracene	0.5	<1.0	<0.5	<0.5	<0.5
Benzo(a)pyrene	0.5	15.4	<0.5	<0.5	<0.5
3-Methylcholanthrene	0.5	<1.0	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	0.5	8.2	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	1.6	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	5.7	<0.5	<0.5	<0.5
Total PAHs		<140.1	<12.6	<12.3	<10.5
DIT		20	20	20	20

Note: All results in mg/kg, dry weight, unless otherwise specified.
Bolded and shaded values indicates a value which exceeds threshold limits

TABLE 4
Groundwater Analytical Results - TPH and BETX COMPOUNDS

Sample Number	C ₆ -C ₉	C ₁₀ -C ₁₄	C ₁₅ -C ₂₈	C ₂₉ -C ₃₆	TPH	Benzene	Toluene	Ethyl Benzene	Xylene	Total BTEX
units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Sampled 15/09/96										
BH1	5660	7580	504	136	13786	<10	<20	<20	<20	<80
Sampled 11/10/96										
BH1	7230	5220	242	42	12734	19	3	<4	<5	<30
BH4	<20	<25	99	<25	<169	<1	<1	<4	<4	<10
BH5	<20	<25	90	<25	<160	<1	<1	<4	<4	<10
LOR	20	25	25	25		1	1	4	4	
Anzecc 1992	NOT ESTABLISHED					300	300	NE	NE	NE
Anzecc 1992	NOT ESTABLISHED					10	NE	NE	NE	NE
Dutch Inter.	NE	600			NE	30	1000	150	70	NE

Notes: All results in micrograms per liter unless otherwise specified.
Bolded and shaded values indicates a value which exceeds threshold limits

TABLE 5
Groundwater Analytical Results - Metals

Sample Number	As	Cd	Cr	Cu	Ni	Pb	Zn	Hg
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm
Sampled 15/09/96								
BH1	NA	NA	NA	NA	NA	0.003	NA	NA
Sampled 11/10/96								
BH1	0.021	0.0002	0.005	0.017	0.031	0.013	0.076	<.0001
BH4	0.002	<.0002	0.002	0.004	0.004	0.001	0.031	<.0001
BH5	0.001	<.0002	<.001	0.004	0.006	<.001	0.017	<.0001
LOR	0.001	0.0002	0.001	0.001	0.001	0.001	0.001	0.0001
ANZECC - fresh	0.01	0.0002	0.001	0.001	0.001	0.001	0.001	0.0001
Drinking Water	0.05	0.005	0.05	1	0.1	0.05	5	0.001

4. DISCUSSION OF RESULTS

Results of laboratory analysis from the initial round of borehole installations conducted on 11 September 1996 indicate concentrations of TPH's above regulatory thresholds in exist in soil samples BH1-3, BH1-4 and BH1-6. TPH's were also present in samples BH3-1 and BH3-2 but remained below guideline levels. The concentrations of BTEX compounds were below regulatory guidelines in all soil samples collected during this round.

The groundwater sample collected from monitoring well BH1 on 15 September 1996 was found to have high levels of TPH in excess of regulatory guidelines. The groundwater level was detected at 5.2 metres below ground surface (bgs) during drilling, but equilibrated later to 3.2 metres bgs. There are several exceedances of ANZECC freshwater guidelines for metals in BH1 excluding cadmium and mercury.

Since samples BH1-4 and BH1-6 were taken from beneath the equilibrated groundwater level, the samples may have become contaminated while withdrawing the sample through the contaminated groundwater.

The second round of drilling and sampling indicated TPH concentrations above guidelines in boreholes BH5-2, BH10-2, and BH10-3. All other samples were within guidelines. In addition, sample BH5-2 also exceeds the draft investigation thresholds (DIT) for concentrations of PAH's. Results of metals analysis for all soil samples remained within regulatory guidelines except for sample BH9-2 which had copper levels marginally above thresholds. The copper concentration in sample BH9-2 is most likely related to background levels associated with the Bunya phyllite basement rock.

The groundwater samples collected from monitoring wells BH4 and BH5 on 10 October 1996 indicated the presence of TPH's but these however remained below the regulatory thresholds. Samples collected from BH1 (reported on laboratory results as BH3) were in excess of the thresholds for TPH's and the BTEX compound benzene. BH4 and BH5 exceed ANZECC freshwater guidelines for Cr, Cu, Ni and Zn with the exception of Cr in BH5.

Field observations during the drilling of BH9 indicated high hydrocarbon odour and PID readings near the bottom of the borehole. The sample collected indicated TPH concentrations below threshold limits, but the field observations suggest that a sample taken from deeper strata will likely yield TPH concentrations above threshold limits.

The results indicate a strata of TPH-contaminated soil between 1.5 metres and 3.5 metres bgs. The strata appears to lie in the corner of the site and extends beneath the basement floor slab. Due to the above-threshold TPH concentrations found in BH5, the strata may be much more widespread and extend along the Coronation Drive frontage and possibly beneath the basement floor slab along this frontage. Due to its proximity to BH5, the building footprint may lay above a portion of the contamination. However, due to the preponderance of low permeability clay and the typical nature of underground storage tank leakage, the TPH concentrations found in BH5 and from the other boreholes may be more localised to these two areas.

5. RECOMMENDATIONS

Based on our findings and the possibility of TPH contamination laying beneath the building footprint, we recommend pursuing a "Restricted" classification for this site. To accomplish a "Restricted" status, we anticipate requirement of a risk assessment to assure the DOE that there is no risk to human health or the environment. This will entail identification of potential receptors of contaminated materials and evaluation of a risk-based threshold level. At this time, we anticipate the only receptor of concern will be the Brisbane River which will require meeting relatively strict freshwater ANZECC guidelines. However, a risk assessment will likely show that there is significant attenuation of the contaminant concentrations prior to reaching the river, and further diffusion within the river. Under these circumstances, concentration levels will likely meet ANZECC guidelines and additional investigation will not be necessary. The DOE has verbally agreed with this strategy and likely outcome in principle.

5.1 RECOMMENDED REMEDIAL STRATEGY

If a goal of a "Former" reclassification is preferred, remediation of the site below threshold levels will likely be required by the DOE. In this case, three site actions will be required:

- Excavation of the petroleum-contaminated soil to the groundwater level;
- Disposal of the petroleum-contaminated groundwater;
- Excavation of TPH and PAH-contaminated fill near the front entrance of the building.

Due to the complex arrangement of the nearby intersection and the progression of contaminated soil beneath the basement floor, additional investigation and design activities will be required. These minimum preconstruction activities include:

- A soil vapour survey performed in the basement to more accurately determine the delineation of the TPH contaminated soil;
- A detailed design to include a geotechnical analysis and a structural analysis for shoring and underpinning.

Due to the site complexity, a premium will be attached to normally-expected earthwork costs. The following minimum construction activities and features will be required:

- Contaminated soil excavation and disposal;
- Shoring along the footpath;
- Sealing of the shored face along the property boundary followed by backfilling;
- Underpinning and demolition of basement floor slab where appropriate up to 3 metres from edge of basement wall;
- Reconstruction of the basement to 3 metres from edge of basement wall;
- Signage, barricading and traffic redirection;
- Groundwater treatment and disposal.

The contaminated soil will require excavation to a depth of around 3.5 metres below ground surface. The material will require disposal at the Brisbane City Council tip or at an on-site location for landfarming. Due to the lack of on-site space, the first option will likely prevail.

The proximity of services and the heavily trafficked intersection suggests that shoring of the footpath along the property boundary will be necessary. In conjunction with shoring, we recommend sealing of the excavated wall face along the property boundary prior to backfilling to prevent off-site contamination from migrating back onto the property. This can be accomplished by plastic sheeting or spray-concreting the face of the excavation.

At this stage, we anticipate the least cost option to accomplish shoring will be to drill soldier piles along the property boundary where the contamination exists. Soldier piles are boreholes spaced closely together that are filled with concrete and allowed to set before excavation. Due to the natural arching effect of soil between the piles, a sheer excavation face can be accomplished that is safe and remains in-place after backfilling.

Underpinning of the basement corner will be necessary to excavate contamination beneath the basement floor slab. A portion of the basement corner may not form a part of the building foundation, and therefore, temporary support of the basement is relatively economical. The contaminated material will be removed through the floor, followed by reconstruction of the floors. If the contamination is found to be more pervasive, costs will escalate dramatically. If the contamination extends past the support columns for the building,

demolition and reconstruction of the entire building may be the only structurally viable alternative to remove the contamination.

Because of the location of the contamination on the site, safety precautions will place a premium on the construction. The location is highly visible and on a highly trafficked intersection requiring careful signage, barricading and possibly the presence of a traffic officer.

Treatment of the groundwater will likely entail pumping the water from the open excavation to Trade Waste via a temporary holding tank until the contaminant concentration reduces below threshold levels. Because of the highly impermeable soils and the localised nature of the contamination, we anticipate a relatively cost for this operation.

5.2 CONSTRUCTION COST ESTIMATES

Four construction cost estimates were solicited from contractors experienced in earthworks and remediation. They are the following:

- McKinnon Excavation Pty Ltd- no response;
- Richardson Excavation Pty Ltd- \$20,000;
- Pullins Petroleum & Environmental Services - \$70,000;
- Petroleum and Chemical Services - \$250,000.

The widely disparate costs are due to the lack of a detailed design. The three responding contractors provided estimates based on varying assumptions. McKinnon Excavation proposed to subcontract to Petroleum & Chemical Services for this project. Richardson Excavation assumed excavation of the material only and neglected shoring or underpinning of the basement. Pullins assumed excavation of the material with shoring, but neglected underpinning of the basement due to the lack of complete information.

Petroleum & Chemical Services returned an estimate to allow for the condition of a maximum 3 metre progression of contamination beneath the basement floor slab as listed above. They provided the caveat that without a detailed design it was very difficult to provide an estimate with respect to the basement underpinning and the full extent of contamination. They stated that depending on the progression of contamination beneath the

contamination. They stated that depending on the progression of contamination beneath the floor slab, different measures would be taken. However, their estimate allows for the conditions stated.

We stress that the full horizontal extent of the contamination has not been determined accurately enough to determine the full extent of the works. Quantity escalation is very possible at this site and would be performed at a significant premium to normal remediation costs.

Based on the above, we recommend budgeting \$325,000 to accomplish reclassification as a "Former" site. This value includes management, validation testing and reporting of the described preconstruction activities and construction activities described above. A detailed geotechnical analysis and design may decrease the cost through value engineering, but the capacity for quantity escalation may overwhelm this potential savings.

6. CONCLUSION

The site is not listed as a "Probable" site on the Contaminated Sites Register, but due to known past site usage as a service station, it may be listed in the future. Reclassification as a "Restricted" site is possible with some additional investigation and performance of a risk assessment to show there is no danger to human health or the environment. Reclassification as a "Former" site will require additional investigation, likely remediation of the contamination and validation that the contamination is below threshold levels.

Based on the large disparity in expenses, we recommend pursuing a "Restricted" status for this site.

7. LIMITATIONS OF REPORT

This report has been prepared in a form suitable for submission to Kurts Developments Pty Ltd and the Director, Hazardous Waste and Contaminated Sites Section, Department of Environment. The report relates to land which is proposed for purchase and describes the results of a Stage II Contaminated Land Assessment of that land carried out by Dames and Moore at the request of the client.

The report has been prepared with reference to the *Guidelines for the Assessment of Contaminated Land in Queensland* (CHEM Unit, January 1992), and to a standard consistent with generally accepted and current professional consulting practice for this phase of work. No other warranty, expressed or implied, is made as to the contents of the report.

This report has not been prepared for the use by parties other than the client and their consulting advisers, and the Queensland Department of Environment. It may not contain sufficient information for purposes of other parties or for other uses.

Whilst to the best of our knowledge information contained in this report is accurate at the date of issue, subsurface conditions including groundwater levels and contaminant concentrations can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There are always some variations in subsurface conditions across a site which cannot be fully defined by investigation. Hence it is unlikely that the measurements and values obtained from sampling and testing during the investigation will represent the extremes of conditions which exist within the site.

Use of the land for any purpose whatsoever subsequent to the assessment reported herein is beyond the control of Dames & Moore, and as a result may affect or invalidate the conclusions presented in this report.

Respectfully submitted
for DAMES & MOORE

Reviewed by

Sean Murphy
Geologist
Geoscience and Engineering

Joel Farrier
Consultant-In-Charge
Geoscience and Engineering

APPENDIX A
CERTIFICATES OF ANALYSIS

SRAEB06358

**SAMPLE RECEIPT ADVICE**

COMPANY: DAMES & MOORE
ATTENTION: s78(B)(2)
DATE: Oct. 14, 1996
FROM: Janine Hew, ENV BRISBANE

ALS has received samples pertaining to your reference: BBN 2724

For future reference the batch number on this order is: EB06358

All samples and paper work were received in good order.
Samples have been received within recommended holding times.
Samples chilled when received.
Samples received in appropriately pretreated and preserved containers.
Please direct any turnaround/technical queries to s78(B)(2).
Any queries relating to sample condition/numbering/breakages should
be directed to s78(B)(2).

You can expect results to be reported as detailed below:

All Environmental Results Oct. 17, 1996

Comments: We received water sample BH1 instead of BH3,
we will assume the sample bottle id's is incorrect
and should read as BH3, Please confirm.

A L S - SERVICING YOUR NEEDS BETTER

AUSTRALIAN LABORATORY SERVICES P/L**A.C.N. 009 936 029**

Sydney
Phone (02) 899 5722
Fax (02) 899 3200

Melbourne
Phone (03) 853 5299
Fax (03) 853 0730

Perth Laboratory
Phone (09) 249 2988
Fax (09) 249 2942

Phone
(07) 352 5577
(07) 352 5109

CHAIN OF CUSTODY RECORD DM-FORM-43

B&M JOB NO.: 26101-008 SITE: Crashdown Dve.
 SAMPLER: G. Niederbach PROJECT MANAGER: A. Thomas
 TURNAROUND TIME: _____ FINAL REPORT BY: _____
 REPORT FORMAT: HARD: ☒ FAX: ☐ DISK: ☐ BULLETIN BOARD: ☒

SAMPLE DATA				CONTAINER DATA	
SAMPLE ID	MATRIX	DATE	TIME	(1) TYPE & (2) PRES.	NO.
BH4	80 water	11/10/96		PBN, GB, VU	4
BH5	water	11/10/96		H " "	4
BH13	"	"		" " "	
LB6358 note we received					
LHC 2 BH1 & not BH3.					
11/10					
Crf					

RELINQUISHED BY (signature) _____ DATE: 11/10/96 TIME: 5pm
 NAME: _____ OF: _____
 NAME: _____ DATE: _____ TIME: _____
 NAME: _____ OF: _____
 NAME: _____ DATE: _____ TIME: _____

RECEIVED BY (signature) _____ DATE: 11/10/96 TIME: 530
 NAME: _____ OF: _____
 NAME: _____ DATE: _____ TIME: _____
 NAME: _____ OF: _____
 NAME: _____ DATE: _____ TIME: _____

(1) TYPE CODES: J = jar, GB = glass bottle, PB = plastic bottle, V = glass vials;
 SS = stainless steel rings.
 (2) PRESERVATIVE CODES: A = acid washed solvent rinsed; C = caustic (NaOH); E = EDTA;
 N = nitric acid; H = hydrochloric acid; S = sulphuric acid; Z = zinc acetate; U = untreated.

DAMES & MOORE

135 Wickham Terrace, Spring Hill, Brisbane, QLD 4004
 Telephone: (07) 3832 3222 FAX: (07) 3832 1687
 PLEASE SIGN AND FAX TO DAMES & MOORE UPON RECEIPT

RECEIVING LAB ALS ANALYSIS REQUIRED

COC NO: 1 SHEET 1 OF 1

8 METALS

ANALYSIS REQUIRED	RESULTS	COMMENTS
	X X	
	X X	
	X X	plastic bottle with preservative
	X X	metal sample used
		not fitted.

LABORATORY NOTES:
 8 METALS = As, Cr, Cu, Cd, Ni, Pb, Zn, Hg

QUOTE NO: _____
 LAB REFERENCE NO: _____
 ADDITIONAL QC REQUIREMENTS: Y N
 SPECIAL DETECTION LIMITS: Y N

FOR LAB USE SHIPMENT

Custody Seal on Cooler Intact: Y N
 Transport Company Name: _____
 Cooler Temperature: _____ deg. C
 Consignment Note No.: _____
 WHITE COPY - Original (Accompanies Samples) YELLOW COPY - Project General File

SRAEB06330



SAMPLE RECEIPT ADVICE

COMPANY: DAMES & MOORE
ATTENTION: s78(B)(2)
DATE: Oct. 10, 1996
FROM: Jodie WEAVER, ENV BRISBANE

ALS has received samples pertaining to your reference: 26101-008-372

For future reference the batch number on this order is: EB06330

All samples and paper work were received in good order.
Samples have been received within recommended holding times.
Samples chilled when received.
Samples received in appropriately pretreated and preserved containers.
Please direct any turnaround/technical queries to s78(B)(2)
Any queries relating to sample condition/numbering/breakages should
be directed to s78(B)(2)

You can expect results to be reported as detailed below:

All Environmental Results Oct. 24, 1996

Comments: We will assume PAH is required for samples BH10-2 and BH10-3.
The 4th column was tick on COC page 2, But PAH was not
written.

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AUSTRALIAN LABORATORY SERVICES P/L

A.C.N. 009 936 029

Sydney
Phone (07) 352 5577
Fax (07) 352 5109

Sydney
Phone (02) 899 5722
Fax (02) 899 3200

Melbourne
Phone (03) 853 5299
Fax (03) 853 0730

Perth Laboratory
Phone (09) 249 2988
Fax (09) 249 2942

D&M JOB NO: 26101-008 SITE: Coroner St						RECEIVING LAB: ALS ANALYSIS REQUIRED						QC No: SHEET 2 OF 3	
SAMPLER: Borehole BH 7-1						PROJECT MANAGER: Andrew Thomas							
BURNAROUND TIME:						FINAL REPORT BY:							
REPORT FORMAT: HARD: ☐ FAX: ☐ DISK: ☐						BULLETIN BOARD: ☐							
SAMPLE DATA				CONTAINER DATA									
SAMPLE ID	MATRIX	DATE	TIME	(1) TYPE & (2) PRES.	NO.							COMMENTS	
BH 7-1	Soil	9/10/96		glass jar	1	X	X	X	X	X	X		
BH 7-2						X	X	X	X	X	X		
BH 8-1						X	X	X	X	X	X		
BH 8-2						X	X	X	X	X	X		
BH 9-1						X	X	X	X	X	X		
BH 9-2						X	X	X	X	X	X		
BH 10-1						X	X	X	X	X	X		
BH 10-2						X	X	X	X	X	X		
BH 10-3						X	X	X	X	X	X		
RELINQUISHED BY (signature)						RECEIVED BY (signature)							
NAME: [Signature] DATE: 10/10/96						NAME: [Signature] DATE: 10/10/96							
OF: RAMES MOORE TIME: 12:00						OF: ALS TIME: 12:00							
NAME: NAME: DATE: DATE: TIME: TIME:						NAME: NAME: DATE: DATE: TIME: TIME:							
NAME: NAME: DATE: DATE: TIME: TIME:						NAME: NAME: DATE: DATE: TIME: TIME:							
(1) TYPE CODES: J = Jar, GB = glass bottle; PB = plastic bottle; V = glass vials;													
SS = stainless steel rings.													
(2) PRESERVATIVE CODES: A = acid washed solvent rinsed; C = caustic (NaOH); E = EDTA;													
N = nitric acid; H = hydrochloric acid; S = sulphuric acid; Z = zinc acetate; U = untreated.													
DAMES & MOORE													
65 Wickham Terrace, Spring Hill, Brisbane, QLD 4004													
Telephone: (07) 3832 3222 FAX: (07) 3832 1687													
PLEASE SIGN AND FAX TO DAMES & MOORE UPON RECEIPT													

QUOTE NO:		LAB REFERENCE NO:		ADDITIONAL QC REQUIREMENTS:		SPECIAL DETECTION LIMITS:	
				Y N		Y N	
FOR LAB USE				SHIPMENT			
Custody Seal on Cooler Intact: Y N				Transport Company Name:			
Cooler Temperature: deg. C				Consignment Note No.:			
WHITE COPY - Original (Accompanies Samples)							

DISCLAIMER

We will assume is read
PAH in Airborne

D&M JOB NO.: 26101-008 SITE: C-002010 S1

SAMPLER: C. N. de Noux PROJECT MANAGER: Andrew Thomas

TURNAROUND TIME: _____ **FINAL REPORT BY:** _____

REPORT FORMAT: HARD: ☒ FAX: ☐ DISK: ☐ BULLETIN BOARD: ☒

CONTAINER DATA

SAMPLE ID	MATRIX	DATE	TIME	(1) TYPE & (2) PRES.	NO.
-----------	--------	------	------	----------------------	-----

BH11-1	soil	10/1/66	glossy
--------	------	---------	--------

1	sol	BH11-2 (1)	sol	1
---	-----	------------	-----	---

[illegible][illegible][illegible]

--	--	--	--	--

[illegible][illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

RECEIVED BY (signature)

NAME: [REDACTED] F: DAMEG + MOORE DATE: 10/10/98 TIME: 12:00

NAME: [REDACTED] OF: AL S DATE: 10/10 TIME: [REDACTED]

Signature	DATE:	NAME:	DATE:
	TIME:	OF:	TIME:

NAME:	NAME:	DATE:	DATE:
F:	OF:	TIME:	TIME:

TYPE CODES: J = jar; GB = glass bottle; PB = plastic bottle; V = glass vials;
S = stainless steel rings.

Abbreviations: A = acid washed solvent rinsed; C = caustic (NaOH); E = EDTA; H = nitric acid; H = hydrochloric acid; S = sulphuric acid; Z = zinc acetate; U = untreated.

DAMES & MOORE

35 Wickham Terrace, Spring Hill, Brisbane, QLD 4004

Telephone: (07) 3832 3222 FAX: (07) 3832 1687

PLEASE SIGN AND FAX TO DAMES & MOORE UPON RECEIPT

LABORATORY NOTES:

QUOTE NO:

LAB REFERENCE NO:

ADDITIONAL QC REQUIREMENTS:

SPECIAL DETECTION LIMITS:

FOR LAB USE

Custody Seal on Cooler Intact:	Y	N
Transport Company Name:		

Cooler Temperature: _____ deg. C Consignment Note No.: _____

WHITE COPY - Original (Accompanies Samples)

PLEASE SIGN AND FAX TO DAMES & MOORE UPON RECEIPT

SRAEB05976

**SAMPLE RECEIPT ADVICE**

COMPANY: DAMES & MOORE
ATTENTION: s78(B)(2)
DATE: Sep. 16, 1996
FROM: Jodie WEAVER, ENV BRISBANE

ALS has received samples pertaining to your reference: 26101/008/372

For future reference the batch number on this order is: EB05976

All samples and paper work were received in good order.
Samples have been received within recommended holding times.
Samples chilled when received.
Samples received in appropriately pretreated and preserved containers.
Sample containers do not comply to pretreatment/preservation standards
(AS, APHA, USEPA)

Please direct any turnaround/technical queries to s78(B)(2)
Any queries relating to sample condition/numbering/breakages should
be directed to s78(B)(2)

You can expect results to be reported as detailed below:

All Environmental Results Sep. 17, 1996

Comments: We will assume you require samples BH1-1 and BH1-5 to be held.

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AUSTRALIAN LABORATORY SERVICES P/L**A.C.N. 009 936 029**

Sydney
Phone (07) 352 5577
Fax (07) 352 5109

Sydney
Phone (02) 899 5722
Fax (02) 899 3200

Melbourne
Phone (03) 853 5299
Fax (03) 853 0730

Perth Laboratory
Phone (09) 249 2988
Fax (09) 249 2942



DAMES & MOORE

135 WICKHAM TERRACE, SPRING HILL, BRISBANE, QUEENSLAND 4004
IN AUSTRALIA TELEPHONE: 07-832 3222 FACSIMILE: 07-832 1687
INTERNATIONAL TELEPHONE: 61-7-321 3222 FACSIMILE: 61-7-832-1687

SAMPLE ANALYSIS REQUEST FORM

PAGE 1 OF 1

Please sign and fax back on receipt

Site Location: Coronation Drive

Receiving Laboratory:

Australian Laboratory Services

Sampling Contact:

32 Shand Street, Stafford Qld 4053

Attention: s78(B)(2)

s78(B)(2)

Date Shipped: 13/9/96

Name

Job No.: 26101\008\372

07/832 3222

Phone

SAMPLE NUMBER	DATE	REQUESTED ANALYSIS	CHARGE NO
BH1-1	12-9-96		
BH1-2	12-9-96	TPH, BTEX, Pb	
BH1-3	12-9-96	TPH, BTEX, Pb	
BH1-4	12-9-96	TPH, BTEX, Pb	
BH1-5	12-9-96		
BH1-6	12-9-96	TPH, BTEX, Pb	
BH2-1	12-9-96	TPH, BTEX, Pb	
BH2-2	12-9-96	TPH, BTEX, Pb	
BH2-3	12-9-96	TPH, BTEX, Pb	
BH2-4	12-9-96	TPH, BTEX, Pb	
1			

Note: Metals = As, Cd, Cr, Cu, Ni, Pb, Zn, Hg



DAMES & MOORE

135 WICKHAM TERRACE, SPRING HILL, BRISBANE, QUEENSLAND 4004
IN AUSTRALIA TELEPHONE: 07-832 3222 FACSIMILE: 07-832 1687
INTERNATIONAL TELEPHONE: 61-7-321 3222 FACSIMILE: 61-7-832-1687

CHAIN OF CUSTODY

Please sign and fax back on receipt

Client: s78(B)(2)	Site Location: 159 Coronation Drive, Milton
Job No.: 26101\008\372	

Sample ID	No. of Containers	Sample ID	No. of Containers
BH1-1	1		
BH1-2	1		
BH1-3	1		
BH1-4	1		
BH1-5	1		
BH1-6	1		
BH2-1	1		
BH2-2	1		
BH2-3	1		
BH2-4	1		

Shipping Method & Date: 13-9-96
Shipped To: Australian Laboratory Services Attention: Jodie Weaver
Address: 32 Shand Street, Stafford Qld 4053

RELINQUISHED BY:

RECEIVED BY:

Company: <u>Dames & Moore</u>	Company: _____
Name (print): <u>s78(B)(2)</u>	Name (print): _____
Signature: <u>sch 4 - signature</u>	Signature: _____
Date: <u>13/9/96</u>	Date: _____

Explain: Results by Tuesday (am) (13-9-96) Please



DAMES & MOORE

135 WICKHAM PLACE, SPRING HILL, BRISBANE, QUEENSLAND 4004
IN AUSTRALIA TELEPHONE 07-832 3222 FACSIMILE 07-832 1687
INTERNATIONAL TELEPHONE 61-7-321 3222 FACSIMILE 61-7-832-1687

CHAIN OF CUSTODY

Please sign and fax back on receipt

Client: s78(B)(2)

Site Location: 159 Coronation Drive,
Milton

Job No.: 26101\008\372

Sample ID	No. of Containers	Sample ID	No. of Containers
BH1-1	1		
BH1-2	1		
BH1-3	1		
BH1-4	1		
BH1-5	1		
BH1-6	1		
BH2-1	1		
BH2-2	1		
BH2-3	1		
BH2-4	1		

Shipping Method & Date: 13-9-96

Shipped To: Australian Laboratory Services Attention: Jodie Weaver

Address: 32 Shand Street, Stafford Qld 4053

RELINQUISHED BY:

Company: Dames & Moore

Name (print): s78(B)(2)

Signature: sch 4 - signature

Date: 13/9/96

RECEIVED BY:

Company: s78(B)(2)

Name (print): ALD

Signature: sch 4 - signature

Date: 14/9

Explain: Results by Tuesday (am) (13-9-96) Please

We will assume BH1-1 & BH1-5 are to be held

DANES & MOORE

135 WICKHAM TERRACE, SPRING HILL, BRISBANE, QUEENSLAND 4004
IN AUSTRALIA TELEPHONE: 07-832 3222 FACSIMILE: 07-832 1687
INTERNATIONAL TELEPHONE: 61-7-321 3222 FACSIMILE: 61-7-832-1687

CHAIN OF CUSTODY

Please sign and fax back on receipt

Client: s78(B)(2)	Site Location: 159 Coronation Drive, Milton
Job No.: 26101\008\372	

[illegible]

Shipping Method & Date:

Shipped To: Australian Laboratory Services Attention: s78(B)(2)
Address: 32 Shand Street, Stafford Qld 4053

Address:

RELINQUISHED BY:

RECEIVED BY:

Company: Dames & Moore

Company:

Name (print): [REDACTED] s78(B)(2)

Name (print) s78(B)(2)

Signature: _____ sch 4 - signature

Signature: sch 4 - signature

Date: 13/9/96

Date: 10/9

Explain:

Dames & Moore

ALSO SEE



ANALYTICAL REPORT

PAGE 1 of 2

RECEIVED

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5976
SUB BATCH: 0
No. OF SAMPLES: 8
DATE RECEIVED: 13/09/96
DATE COMPLETED: 18/09/96

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

26 SEP. 1996

ORDER No.: BBN 2575

SAMPLE TYPE: SOIL

PROJECT: 26101/008/372

id	Analysis description	Units	LOR	BH1-2	BH1-3	BH1-4	BH1-6
				12/09/96	12/09/96	12/09/96	12/09/96
055	Moisture Content (dried @ 103°C)	%	0.1	14.9	17.8	19.6	31.0
05T	Lead - Total	mg/kg	1	21	8	7	8

REMARKS:

Samples as received digested by USEPA method 3051 prior to the determination of lead. Results reported on a dry weight basis.

sch 4 - signature

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

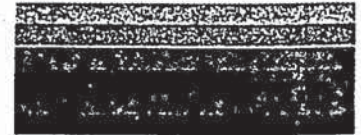
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ANALYTICAL REPORT

PAGE 2 of 2

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5976
SUB BATCH: 0
No. OF SAMPLES: 8
DATE RECEIVED: 13/09/96
DATE COMPLETED: 18/09/96

ORDER No.: BBN 2575

SAMPLE TYPE: SOIL

PROJECT: 26101/008/372

id	Analysis description	Units	LOR	BH2-1	BH2-2	BH2-3	BH2-4
				12/09/96	12/09/96	12/09/96	12/09/96
5	Moisture Content (dried @ 103°C)	%	0.1	16.0	21.1	18.7	19.9
105T	Lead - Total	mg/kg	1	28	6	4	9

COMMENTS:

sch 4 - signature

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

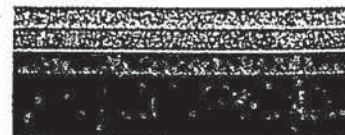
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ANALYTICAL REPORT

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5976
SUB BATCH: 0
NO. OF SAMPLES: 8
DATE RECEIVED: 13/09/96
DATE COMPLETED: 18/09/96

ORDER No.: BBN 2575

SAMPLE TYPE: QUALITY CONTROL

PROJECT: 26101/008/372

ud	Analysis description	Units	LOR	BLANK	BH1-2 %SPK REC 12/09/96	BH2-4 CHK 12/09/96
55	Moisture Content (dried @ 103°C)	%	0.1	---	---	20.0
5T	Lead - Total	mg/kg	1	<1	81.0 %	10

REMARKS:

Results which appear on this report are routine laboratory
duplicates for QUALITY CONTROL purposes.

sch 4 - signature

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• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5976
SUB BATCH: 1
No. OF SAMPLES: 8
DATE RECEIVED: 13/09/96
DATE COMPLETED: 18/09/96

ORDER No.: BBN 2575

SAMPLE TYPE: SOIL

PROJECT: 26101/008/372

d	Analysis description	Units	LOR	BH1-2	BH1-3	BH1-4	BH1-6
				12/09/96	12/09/96	12/09/96	12/09/96
055	Moisture Content (dried @ 103°C)	%	0.1	14.9	17.8	19.6	31.0
01-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	mg/kg	2	<2	44	522	158
	C10 - C14 Fraction	mg/kg	50	<50	230	210	<50
	C15 - C28 Fraction	mg/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	mg/kg	100	<100	<100	<100	<100
0-SS	BTEX						
	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2

sch 4 - signature

REMARKS:

Samples analysed on an as received basis. Results reported on a dry weight basis.

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5976
SUB BATCH: 1
No. OF SAMPLES: 8
DATE RECEIVED: 13/09/96
DATE COMPLETED: 18/09/96

ORDER No.: BBN 2575

SAMPLE TYPE: SOIL

PROJECT: 26101/008/372

id	Analysis description	Units	LOR	BH2-1 12/09/96	BH2-2 12/09/96	BH2-3 12/09/96	BH2-4 12/09/96
005	Moisture Content (dried @ 103°C)	%	0.1	16.0	21.1	18.7	19.9
071-SS	TOTAL PETROLEUM HYDROCARBONS						
	C6 - C9 Fraction	mg/kg	2	<2	<2	<2	<2
	C10 - C14 Fraction	mg/kg	50	<50	<50	<50	<50
	C15 - C28 Fraction	mg/kg	100	<100	<100	<100	<100
	C29 - C36 Fraction	mg/kg	100	<100	<100	<100	<100
10-SS	BTEX						
	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2

REMARKS:

sch 4 - signature

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

RECEIVED

26 SEP 1996

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5999
SUB BATCH: 0
No. OF SAMPLES: 1
DATE RECEIVED: 16/09/96
DATE COMPLETED: 19/09/96

ORDER No.: BBN 2585

SAMPLE TYPE: WATER

PROJECT: 26101-008-372

id	Analysis description	Units	LOR	BH1
				16/09/96
020F	Lead - Filtered	mg/L	0.001	0.003

REMARKS:

sch 4 - signature

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5999
SUB BATCH: 0
No. OF SAMPLES: 1
DATE RECEIVED: 16/09/96
DATE COMPLETED: 19/09/96

ORDER No.: BBN 2585 SAMPLE TYPE: QUALITY CONTROL PROJECT: 26101-008-372

Analysis description	Units	LOR	BLANK	BH1 %SPK REC 16/09/96	BH1 CHK 16/09/96
20F Lead - Filtered	mg/L	0.001	<0.001	103 %	0.003

REMARKS:

Results which appear on this report are routine laboratory
duplicates for QUALITY CONTROL purposes.

sch 4 - signature

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

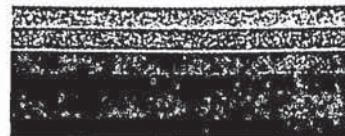
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ANALYTICAL REPORT

PAGE 1 of 1

CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5999
SUB BATCH: 1
No. OF SAMPLES: 1
DATE RECEIVED: 16/09/96
DATE COMPLETED: 19/09/96

ORDER No.: BBN 2585

SAMPLE TYPE: WATER

PROJECT: 26101-008-372

Analysis description		Units	LOR	BHI
				16/09/96
71-WS	TOTAL PETROLEUM HYDROCARBONS			
	C6 - C9 Fraction	ug/L	20	5660
	C10 - C14 Fraction	ug/L	25	7580
	C15 - C28 Fraction	ug/L	25	504
	C29 - C36 Fraction	ug/L	25	136
-WS	BTEX			
	Benzene	ug/L	1	<10
	Toluene	ug/L	2	<20
	Chlorobenzene	ug/L	2	<20
	Ethylbenzene	ug/L	2	<20
	meta- & para-Xylene	ug/L	2	<20
	ortho-Xylene	ug/L	2	<20

sch 4 - signature

REMARKS:

Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

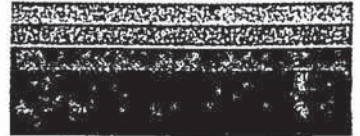
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CONTACT: s78(B)(2)
CLIENT: DAMES & MOORE
ADDRESS: P O BOX 251
SPRING HILL QLD 4004

LABORATORY: ENV BRISBANE
BATCH NUMBER: EB5999
SUB BATCH: 2
No. OF SAMPLES: 2
DATE RECEIVED: 16/09/96
DATE COMPLETED: 19/09/96

ORDER No.: BBN 2585

SAMPLE TYPE: SOIL

PROJECT: 26101-008-372

Analysis description	Units	LOR	BH3-1	BH3-2
			16/09/96	16/09/96
Moisture Content (dried @ 103°C)	%	0.1	18.5	18.9
TOTAL PETROLEUM HYDROCARBONS				
C6 - C9 Fraction	mg/kg	2	13	157
C10 - C14 Fraction	mg/kg	50	<50	68
C15 - C28 Fraction	mg/kg	100	<100	<100
C29 - C36 Fraction	mg/kg	100	<100	<100
BTEX				
Benzene	mg/kg	0.2	<0.2	<0.2
Toluene	mg/kg	0.2	<0.2	<0.2
Chlorobenzene	mg/kg	0.2	<0.2	<0.2
Ethylbenzene	mg/kg	0.2	<0.2	<0.2
meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2
ortho-Xylene	mg/kg	0.2	<0.2	<0.2

sch 4 - signature

REMARKS:

Samples analysed on an as received basis. Results reported on a dry weight basis.

This is the Final Report which supersedes any preliminary reports with this batch number.

• Results apply to sample(s) as submitted by client.

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EB6330-0



TO: [REDACTED] DAMES & MOORE

P O BOX 251
SPRING HILL QLD 4004

ATTENTION: [REDACTED] s78(B)(2)

SUBJECT: Analytical results.

BATCH: EB6330-0

DATE: 22/10/96



MES & MOORE

ENV BRISBANE

Page-no: 1

Location: s78(B)(2)
 Order: 26101-008-372
 Sample Type: SOIL
 Project: CORONATION ST

Batch-no: 6330
 Sub-batch: 0
 No-samples: 11
 Received: 10/10/96
 Checked:

Element Unit Method	Moisture %	As mg/kg EG-005T	Cd mg/kg EG-005T	Cr mg/kg EG-005T	Cu mg/kg EG-005T	Ni mg/kg EG-005T	Pb mg/kg EG-005T	Zn mg/kg EG-005T
1-2	12.9	7	<1	13	41	14	180	112
1-4	18.4	6	<1	36	12	21	4	36
1-5	18.3	7	<1	29	12	18	6	35
1-6	20.1	4	<1	31	13	18	6	41
1-3	20.0	3	<1	33	41	21	11	45
-2	18.4	10	<1	19	25	11	16	44
-2	18.9	9	<1	39	16	20	8	39
-2	8.9	12	<1	12	64	4	20	50
1-10-2	19.2	11	<1	33	53	17	12	37
1-10-3	19.8	<1	<1	44	20	25	6	53
1-2	19.4	<1	<1	31	13	17	6	35

Limit of Detection 0.1 1 1 1 1 1 1 1

Samples as received digested by USEPA method 3051 prior to the determination of metals. Results reported on a dry weight basis. This report supersedes any previous preliminary reports of the same batch number.



IES & MOORE

ENV BRISBANE

Page-no: 2

ntion: s78(B)(2)
Order: 26101-008-372
pleType: SOIL
ect: CORONATION ST

Batch-no: 6330
Sub-batch: 0
No-samples: 11
Received: 10/10/96
Checked:

Element Unit Method	Hg mg/kg EG-0207
-2	0.2
-4	<0.1
H5-5	<0.1
H5-6	<0.1
-3	<0.1
-2	<0.1
-2	<0.1
-2	0.1
H10-2	<0.1
H10-3	<0.1
1-2	<0.1

Limit of Detection 0.1

EB 6330-1



TO: DAMES & MOORE

P O BOX 251
SPRING HILL QLD 4004

ATTENTION: s78(B)(2)

SUBJECT: Analytical results.

BATCH: EB6330-1

DATE: 21/10/96



WIS & MOORE

Location: s78(B)(2)
 Order: 26101-008-372
 Sample Type: SOIL
 Project: CORONATION ST

Page-no: 1
 ENV BRISBANE
 Batch-no: 6330
 Sub-batch: 1
 No-samples: 11
 Received: 10/10/96
 Checked:

Method	Analysis description	Units	LOR	BH5-2	BH5-4	BH5-5
				09/10/96	09/10/96	09/10/96
155	Moisture Content (dried @ 103° C)	%	0.1	12.9	18.4	18.3
-071-SS	TOTAL PETROLEUM HYDROCARBONS					
-071-SS	C6 - C9 Fraction	mg/kg	2	<2	<2	<2
-071-SS	C10 - C14 Fraction	mg/kg	50	<50	<50	<50
-071-SS	C15 - C28 Fraction	mg/kg	100	1510	<100	<100
-071-SS	C29 - C36 Fraction	mg/kg	100	558	<100	<100
-080-SS	BTEX					
-080-SS	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2
-080-SS	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2
-080-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2
-080-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2
-080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2
-080-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2

Samples analysed on an as received basis. Results reported on a dry weight basis. Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.

MES & MOORE

ntion: s78(B)(2)
 Order: 26101-008-372
 Sample Type: SOIL
 Project: CORONATION ST

Page-no: 2
 ENV BRISBANE
 Batch-no: 6330
 Sub-batch: 1
 No-samples: 11
 Received: 10/10/96
 Checked:

Code	Analysis description	Units	LOR	BH5-6	BH6-3	BH7-2
				09/10/96	09/10/96	09/10/96
55	Moisture Content (dried @ 103' %		0.1	20.1	20.0	18.4
71-SS	TOTAL PETROLEUM HYDROCARBONS					
071-SS	C6 - C9 Fraction	mg/kg	2	<2	<2	<2
071-SS	C10 - C14 Fraction	mg/kg	50	<50	<50	<50
71-SS	C15 - C28 Fraction	mg/kg	100	<100	<100	<100
71-SS	C29 - C36 Fraction	mg/kg	100	<100	<100	<100
080-SS	BTEX					
080-SS	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2
080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2
080-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2



AES & MOORE

ntion: s78(B)(2)
Order: 26101-008-372
Sample Type: SOIL
Project: CORONATION ST

Page-no: 3
ENV BRISBANE
Batch-no: 6330
Sub-batch: 1
No-samples: 11
Received: 10/10/96
Checked:

Code	Analysis description	Units	LOR	BH8-2	BH9-2	BH10-2
55	Moisture Content (dried @ 103' %		0.1	09/10/96 18.9	09/10/96 8.9	09/10/96 19.2
71-SS	TOTAL PETROLEUM HYDROCARBONS					
071-SS	C6 - C9 Fraction	mg/kg	2	<2	4	71
071-SS	C10 - C14 Fraction	mg/kg	50	<50	<50	114
71-SS	C15 - C28 Fraction	mg/kg	100	<100	<100	<100
71-SS	C29 - C36 Fraction	mg/kg	100	<100	<100	<100
080-SS	BTEX					
080-SS	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2
080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2
80-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2



S & MOORE

Location: S78(B)(2)
Order: 26101-008-372
File Type: SOIL
Object: CORONATION ST

Page-no: 4
ENV BRISBANE
Batch-no: 6330
Sub-batch: 1
No-samples: 11
Received: 10/10/96
Checked:

Code	Analysis description	Units	LOR	BH10-3	BH11-2
				09/10/96	09/10/96
55	Moisture Content (dried @ 103' °C)		0.1	19.8	19.4
71-SS	TOTAL PETROLEUM HYDROCARBONS				
71-SS	C6 - C9 Fraction	mg/kg	2	172	<2
71-SS	C10 - C14 Fraction	mg/kg	50	204	<50
71-SS	C15 - C28 Fraction	mg/kg	100	<100	<100
71-SS	C29 - C36 Fraction	mg/kg	100	<100	<100
80-SS	BTEX				
80-SS	Benzene	mg/kg	0.2	<0.2	<0.2
80-SS	Toluene	mg/kg	0.2	<0.2	<0.2
80-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2
80-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2
80-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2
80-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2

EB 6330-2



TO: **DAMES & MOORE**

P O BOX 251
SPRING HILL QLD 4004

ATTENTION: s78(B)(2)

SUBJECT: Analytical results.

BATCH: EB6330-2

DATE: 22/10/96

AES & MOORE

Location: s78(B)(2)
 Order: 26101-008-372
 Sample Type: SOIL
 Project: CORONATION ST

Page-no: 1
 ENV BRISBANE
 Batch-no: 6330
 Sub-batch: 2
 No-samples: 4
 Received: 10/10/96
 Checked:

Method	Analysis description	Units	LOR	BH5-2	BH10-2	BH10-3
				09/10/96	09/10/96	09/10/96
055	Moisture Content (dried @ 103° C)	%	0.1	12.9	19.2	19.8
075B-SS	POLYNUCLEAR AROMATICS					
075B-SS	Naphthalene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	2-Methylnaphthalene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	2-Chloronaphthalene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	Acenaphthylene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	Acenaphthene	mg/kg	0.5	1.5	<0.5	<0.5
075B-SS	Fluorene	mg/kg	0.5	0.8	<0.5	<0.5
075B-SS	Phenanthrene	mg/kg	0.5	14.1	<0.5	<0.5
075B-SS	Anthracene	mg/kg	0.5	5.8	<0.5	<0.5
075B-SS	Fluoranthene	mg/kg	0.5	35.8	1.8	1.6
075B-SS	Pyrene	mg/kg	0.5	36.3	1.3	1.2
075B-SS	N-2-Fluorenylacetylamide	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	Benz(a)anthracene	mg/kg	0.5	15.5	<0.5	<0.5
075B-SS	Chrysene	mg/kg	0.5	12.5	<0.5	<0.5
075B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	29	<1	<1
075B-SS	7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	Benzo(a)pyrene	mg/kg	0.5	15.4	<0.5	<0.5
075B-SS	3-Methylcholanthrene	mg/kg	0.5	<1.0	<0.5	<0.5
075B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	8.2	<0.5	<0.5
075B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	1.6	<0.5	<0.5
075B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	5.7	<0.5	<0.5

Samples analysed on an as received basis. Results reported on a dry weight basis. Particular samples required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly. This report supersedes any previous preliminary reports of the same batch number.

MES & MOORE

Attention: s78(B)(2)
 Order: 26101-008-372
 Sample Type: SOIL
 Project: CORONATION ST

Page-no: 2
 ENV BRISBANE
 Batch-no: 6330
 Sub-batch: 2
 No-samples: 4
 Received: 10/10/96
 Checked:

Code	Analysis description	Units	LOR	BH11-2
155	Moisture Content (dried @ 103' %		0.1	09/10/96 19.4
175B-SS	POLYNUCLEAR AROMATICS			
-075B-SS	Naphthalene	mg/kg	0.5	<0.5
-075B-SS	2-Methylnaphthalene	mg/kg	0.5	<0.5
175B-SS	2-Chloronaphthalene	mg/kg	0.5	<0.5
175B-SS	Acenaphthylene	mg/kg	0.5	<0.5
-075B-SS	Acenaphthene	mg/kg	0.5	<0.5
-075B-SS	Fluorene	mg/kg	0.5	<0.5
175B-SS	Phenanthrene	mg/kg	0.5	<0.5
175B-SS	Anthracene	mg/kg	0.5	<0.5
175B-SS	Fluoranthene	mg/kg	0.5	<0.5
-075B-SS	Pyrene	mg/kg	0.5	<0.5
-075B-SS	N-2-Fluorenylacetamide	mg/kg	0.5	<0.5
175B-SS	Benz(a)anthracene	mg/kg	0.5	<0.5
175B-SS	Chrysene	mg/kg	0.5	<0.5
-075B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	<1
-075B-SS	7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	<0.5
175B-SS	Benzo(a)pyrene	mg/kg	0.5	<0.5
175B-SS	3-Methylcholanthrene	mg/kg	0.5	<0.5
-075B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5
-075B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5
175B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5

EB 6358-0



TO: DAMES & MOORE

P O BOX 251
SPRING HILL QLD 4004

ATTENTION: s78(B)(2)

SUBJECT: Analytical results.

BATCH: EB6358-0

DATE: 17/10/96



IES & MOORE

Location: s78(B)(2)
Order: EBN 2724
Sample Type: WATER
Contract: 26101-008-372

Page-no: 1
ENV BRISBANE
Batch-no: 6358
Sub-batch: 0
No-samples: 3
Received: 11/10/96
Checked:

Method	Analysis description	Units	LOR	BH4	BH5	BH3
				11/10/96	11/10/96	11/10/96
20F	Arsenic - Filtered	mg/L	0.001	0.002	0.001	0.021
u20F	Cadmium - Filtered	mg/L	0.0002	<0.0002	<0.0002	0.0002
020F	Chromium - Filtered	mg/L	0.001	0.002	<0.001	0.005
20F	Copper - Filtered	mg/L	0.001	0.004	0.004	0.017
20F	Nickel - Filtered	mg/L	0.001	0.004	0.006	0.031
20F	Lead - Filtered	mg/L	0.001	0.001	<0.001	0.013
020F	Zinc - Filtered	mg/L	0.001	0.031	0.017	0.076
035F	Mercury - Filtered	mg/L	0.0001	<0.0001	<0.0001	<0.0001

EB 6358-1



TO: DAMES & MOORE

P O BOX 251
SPRING HILL QLD 4004

ATTENTION: s78(B)(2)

SUBJECT: Analytical results.

BATCH: EB6358-1

DATE: 17/10/96



MES & MOORE

Attention: s78(B)(2)
Order: BBN 2724
Sample Type: WATER
Project: 26101-008-372

Page-no: 1
ENV BRISBANE
Batch-no: 6358
Sub-batch: 1
No-samples: 3
Received: 11/10/96
Checked:

Method	Analysis description	Units	LOR	BH4	BH5	BH3
				11/10/96	11/10/96	11/10/96
071-WS	TOTAL PETROLEUM HYDROCARBONS					
071-WS	C6 - C9 Fraction	ug/L	20	<20	<20	7230
071-WS	C10 - C14 Fraction	ug/L	25	<25	<25	5220
071-WS	C15 - C28 Fraction	ug/L	25	99	90	242
071-WS	C29 - C36 Fraction	ug/L	25	<25	<25	42
080-WS	BTEX					
080-WS	Benzene	ug/L	1	<1	<1	19
080-WS	Toluene	ug/L	1	<1	<1	3
080-WS	Chlorobenzene	ug/L	2	<2	<2	2
080-WS	Ethylbenzene	ug/L	2	<2	<2	<2
080-WS	meta- & para-Xylene	ug/L	2	<2	<2	3
080-WS	ortho-Xylene	ug/L	2	<2	<2	<2

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Disclosure Log
RTI Act 2009

APPENDIX B
DRILLING LOGS

PROJECT : 159 CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH3

CLIENT : KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG : GEMCO

BARREL TYPE : Hollow Flight

BIT TYPE : Auger

HOLE
DIRECTION
VERT'

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
FILL	SILTY SAND, dark brown.	SM		.2						G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	CLAY, dark brown.	CH		.4							
				.6							
				.8							
				1							
				1.2							
				1.4							
	GRAVEL, coarse.	GP		1.6							
				1.8							
				2							
	ESTUARINE CLAY, dark grey, dense.	CH		2.2						Hydrocarbon odour detected at 2.5m depth.	
				2.4							
				2.6	X	G (T) 1					
				2.8							
				3							
	Dark grey and orange.			3.2							
				3.4							
				3.6	X	G (T) 2					
				3.8							
				4							
	End of Hole at 4.0m.			4.2						Hydrocarbon odour.	
				4.4							
				4.6							
				4.8							

Data: CORO-B3
Script: SOIL-PID

BOREHOLE LOG

JOB No. 26101-008-372	DATE
LOGGED BY JM	-
APPROVED BY 18-xxx	

File A



DAMES & MOORE

278

PROJECT: 157 CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH2

CLIENT: KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: GEMCO

BARREL TYPE: Hollow Flight

BIT TYPE: Auger

HOLE
DIRECTION
VERT

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
	GRAVELLY CLAY, brown, loose, moist.	CL		0.2						G (T) = Solvent washed, Glass Jar with Teflon Lined Lid. No visual contamination, no hydrocarbon odour noted.	
	CLAY, dark brown, dense, moist, (natural).	CH		0.4							
				0.6							
				0.8							
				1.0	X	G (T)	1				
				1.2							
				1.4							
				1.6							
				1.8	X	G (T)	2				
				2.0							
				2.2						No visual contamination, no hydrocarbon odour noted.	
				2.4							
				2.6							
				2.8	X	G (T)	3				
				3.0							
				3.2							
				3.4							
				3.6							
				3.8	X	G (T)	4				
				4.0							
	Orange and brown.	CH		3.0							
				3.2							
				3.4							
				3.6							
				3.8							
				4.0							
	End of Hole at 4.0m.			4.2							
				4.4							
				4.6							
				4.8							

DRILLING COMPANY: SOIL SURVEYS
DRILLER:
DATE/TIME COMMENCED: 12 SEP 96
DATE/TIME COMPLETED: 12 SEP 96

Data: CORO-B2
Script: SOIL-PID

JOB No. 26101-008-372	DATE
LOGGED BY JM	-
APPROVED BY	

File A



BOREHOLE LOG

DAMES & MOORE

279

PROJECT : CNR CORONATION DRIVE/CRIBB STREET SITE CONTAMINATION INVESTIGATION				BORE No. BH4			
CLIENT : KURTS DEVELOPMENT PTY LTD				SHEET 1 OF 1			
DRILLING RIG : JACRO 100		BORE STATUS MONITORING BORE		CO-ORD'S OF COLLAR		R.L. OF COLLAR	
DRILLING METHOD : Solid Flight Auger				N : Adjacent		DATUM	
				E : to Ramp			
TOTAL DRILLED DEPTH (m)		7.3		STATIC WATER LEVEL (m, btoc)		2.11	
TOTAL CASED DEPTH (m)		7.3		DATE OF MEASUREMENT		11/10/96	
MINIMUM CASING DIAMETER (mm)		50		OPEN INTERVAL (m, bgl)		3.0	
MINIMUM SCREEN DIAMETER (mm)		50		CONDUCTIVITY (uS/cm @25 deg C)			
ADDITIONAL NOTES 80mm Diameter bore. No Visual Contamination. No Hydrocarbon Odour.				GEOLOGICAL UNIT		UNIFIED SYMBOL	
				SAMPLE No.		PID READING (ppm)	
				R.L. (m)			
SCHEMATIC BORE CONSTRUCTION 				GRAPHIC LOG 			
LITHOLOGICAL DESCRIPTION SANDY SILT, dark brown, fine to medium grained, medium dense, moist. CLAYEY SAND, dark brown, fine grained, medium dense, moist, rounded river pebbles throughout. SANDY SILT, dark grey, fine grained, medium plasticity, moist, soft to firm. SILTY CLAY, mottled yellowish red and olive grey, medium plasticity, moist, firm to stiff. Fine grained sand throughout. Brown in colour, fine gravel sand throughout. Mottled yellowish red and grey. Wet, no sand grains. SANDY CLAY, yellowish red, fine grained, medium plasticity, very moist, firm. SILTY CLAY, mottled grey and brown, medium plasticity, moist, stiff. SILT, dark grey, high plasticity, moist, soft. End of Hole at 7.3m depth.				TOPSOIL		ML	
				FILL		SC	
				FILL?		ML	
				NATURAL		CI	
						0	
						CI	
						CI	
				MH			

Data : MB-BH4
Script : MANLYWEL

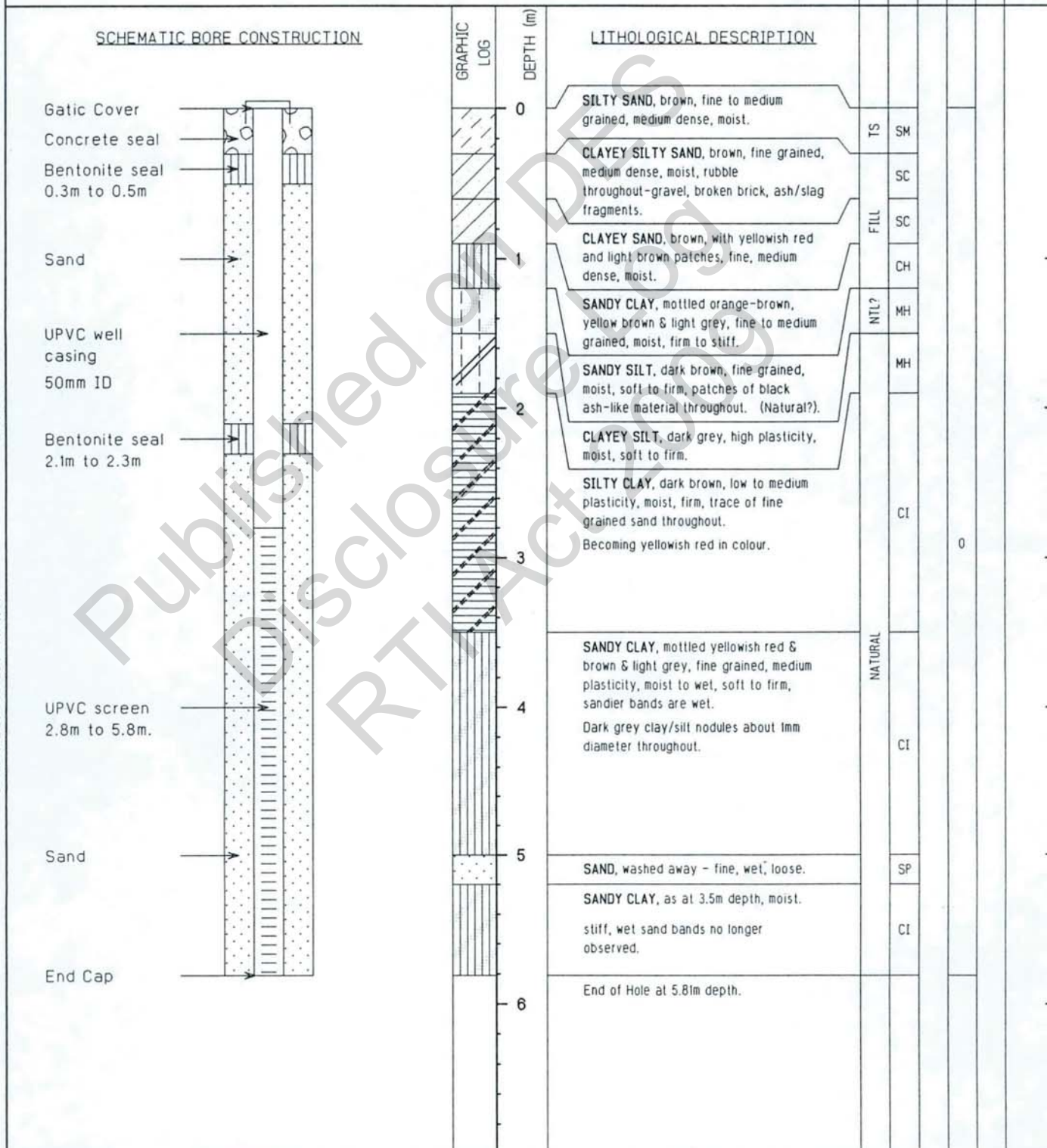
JOB No. 26101-008-372	DATE
LOGGED BY GAN	2.10.93
APPROVED BY	

BORE COMPLETION REPORT



DAMES & MOORE

PROJECT : CNR CORONATION DRIVE/CRIBB STREET SITE CONTAMINATION INVESTIGATION		BORE No. BH5		
CLIENT : KURTS DEVELOPMENT PTY LTD		SHEET 1 OF 1		
DRILLING RIG : GEMCO	BORE STATUS MONITORING BORE	CO-ORD'S OF COLLAR	R.L. OF COLLAR	DATUM
DRILLING METHOD : Hollow Flight Auger		N : Coro Dve		
		E : Footpath		
TOTAL DRILLED DEPTH (m)	5.81	STATIC WATER LEVEL (m, btoc)	4.21	GEOLOGICAL UNIT UNIFIED SYMBOL SAMPLE No. PID READING (ppm) R.L. (m)
TOTAL CASED DEPTH (m)	5.81	DATE OF MEASUREMENT	11/10/96	
MINIMUM CASING DIAMETER (mm)	50	OPEN INTERVAL (m, bgl)	3.0	
MINIMUM SCREEN DIAMETER (mm)	50	CONDUCTIVITY (uS/cm @25 deg C)		
ADDITIONAL NOTES				
80mm Diameter bore.				
No Hydrocarbon Odour.				
Only visual contamination was ash in fill material.				



Data : MB-BH5
Script : MANLYWEL

JOB No. 26101-008-372	DATE
LOGGED BY GAN	2.10.93
APPROVED BY	

BORE COMPLETION REPORT



DAMES & MOORE

PROJECT: CNR CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH6

CLIENT: KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT'

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

BARREL TYPE:
BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
FILL	CONCRETE, 140mm thick.									G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	CLAYEY GRAVEL, light brown, fine to coarse grained, angular, dry, no odour. Gravel typically blue road base or quartz.	GC		.2		X	G (T) 1	0	1.7	Plastic moisture/vapour barrier under concrete slab.	
	CLAY, black, high plasticity, trace of silt, moist, faint odour, firm.	CH		.4		X	G (T) 2	0	0	Very faint odour, but no PID response.	
	SILTY CLAY, dark grey, medium plasticity, moist, stiff.	CI				X	G (T) 3	0	26.3		
	End of Hole at 0.55m.			.6							
				.8							
				1							
				1.2							

DRILLING COMPANY: Dames & Moore
DRILLER: LBH

DATE/TIME COMMENCED: 09 OCT 96
DATE/TIME COMPLETED: 09 OCT 96

Data: CORO-BH6
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY	

File A



HAND AUGER LOG

DAMES & MOORE

282

PROJECT : CNR CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH7

CLIENT : KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT*

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

BARREL TYPE :

BIT TYPE :

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
	CONCRETE, 150mm thick.									G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
FILL	CLAYEY SANDY GRAVEL, light brown, fine to coarse grained, angular, dry, no odour. Gravel typically blue road base or quartz.	GC		.2		G (T) 1		0	0	Plastic moisture/vapour barrier under concrete slab.	
	CLAY, olive grey/brown, mottles of orange and dusky red, low plasticity, damp, soft/loose, no odour. Fill?	CL		.4		G (T) 2		0	0		
	Grades greenish grey with reddish brown and orange mottles, moist, soft to firm.			.6				0			
	Grades greenish grey, medium plasticity.			.8				0			
	CLAYEY SAND, yellow brown/light grey, dry, medium dense to dense.	SC									
	Refusal at 0.85m, no recovery of soil.			1							
				1.2							

DRILLING COMPANY : Dames & Moore
DRILLER : LBH

DATE/TIME COMMENCED : 09 OCT 96
DATE/TIME COMPLETED : 09 OCT 96

Data: CORO-BH7
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY 18-xxx	

File A



HAND AUGER LOG

DAMES & MOORE

283

PROJECT: CNR CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH8

CLIENT: KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

BARREL TYPE:
BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL / CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
FILL	CONCRETE, 130mm thick.									G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	CLAYEY GRAVEL, light brown, fine to coarse grained, angular, dry, no odour. Gravel typically blue road base or quartz. Some cobbles to 50mm.	GC		.2				0		Plastic moisture/vapour barrier under concrete slab.	
				.4				0			
						G (T)	1	0	0		
	CLAY, black, low to medium plasticity, trace of silt, damp, slightly organic odour, firm.	CL		.6				0			
						G (T)	2	0	44.9		
	End of Hole at 0.7m.			.8							
				1							
				1.2							

DRILLING COMPANY: Dames & Moore
DRILLER: LBH

DATE/TIME COMMENCED: 09 OCT 96
DATE/TIME COMPLETED: 09 OCT 96

Data: CORO-BH8
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY 18 xxx	

File A



HAND AUGER LOG

DAMES & MOORE

284

PROJECT : CNR CORONATION DRIVE/CRIBB STREET SITE CONTAMINATION INVESTIGATION						HOLE No. BH9						
CLIENT : KURTS DEVELOPMENTS PTY LTD						SHEET 1 OF 1						
DRILLING RIG: HAND AUGER		HOLE DIRECTION VERT'		HOLE ANGLE FROM HORIZONTAL 90°		CO-ORD'S OF COLLAR NORTH		R.L. OF COLLAR		DATUM		
BARREL TYPE :						EAST						
BIT TYPE :												
GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS		RL (m)
										LABORATORY TESTS		
GROUNDWATER OBSERVATIONS										CASING		ADDITIONAL NOTES
FILL	CONCRETE, 120mm thick.										G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	CLAYEY GRAVEL, light brown, fine to coarse grained, angular to subangular, dry, no odour, gravel typically blue road base or quartz 10 to 40mm, some cobbles up to 80mm. Grades brown/dark grey. Becoming damp, gravel sub-rounded.	GC		.2					(0)		Plastic moisture/vapour barrier under concrete slab.	
				.4					(0)		Background PID between 2 & 4 ppm. Brackets indicate 0 change from background.	
									(0)		Background PID between 6 & 8 ppm.	
	SANDY CLAY, black, fine to medium grained, dry, firm to stiff, gravel throughout.	CT		.6							Background PID between 5 & 6 ppm.	
	End of Hole at 0.65m. Termination of hole due to very strong odours. Level C equipment required.			.8							Strong hydrocarbon odour.	
				1								
				1.2								

Data: CORO-BH9
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY 18-xxx	

File A



HAND AUGER LOG

DAMES & MOORE

285

PROJECT: CNR CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH10

CLIENT: KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

BARREL TYPE:
BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
FILL	CONCRETE, 105mm thick.									G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	SANDY CLAYEY GRAVEL, yellow-brown, fine to coarse grained, angular, dry, no odour. Gravel typically blue road base or quartz. Moist, dense.	GC		.2		G (T)	1	6.5	0	Plastic moisture/vapour barrier under concrete slab. Background PID 6.5ppm.	
				.4				7.0		Background PID 7.0ppm.	
	SANDY GRAVELLY CLAY, mottled grey and black, dry, stiff. Very strong hydrocarbon odour.	CH		.6		G (T)	2	119	1492		
								248	350		
	End of Hole at 0.7m. Termination due to strong odours.			.8							
				1							
				1.2							

DRILLING COMPANY: Dames & Moore
DRILLER: LBH

DATE/TIME COMMENCED: 09 OCT 96
DATE/TIME COMPLETED: 09 OCT 96

Data: CORO-B10
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY	

File A

HAND AUGER LOG



DAMES & MOORE

286

PROJECT: CNR CORONATION DRIVE/CRIBB STREET
SITE CONTAMINATION INVESTIGATION

HOLE No. BH11

CLIENT: KURTS DEVELOPMENTS PTY LTD

SHEET 1 OF 1

DRILLING RIG: HAND AUGER

HOLE
DIRECTION
VERT

HOLE ANGLE
FROM HORIZONTAL
90°

CO-ORD'S OF COLLAR
NORTH
EAST

R.L. OF COLLAR

DATUM

BARREL TYPE:

BIT TYPE:

GEOLOGICAL UNIT	DESCRIPTION	UNIFIED SYMBOL	GRAPHIC LOG	DOWN HOLE DEPTH (m)	SAMPLE SYMBOL/CORE RUN	SAMPLE TYPE	SAMPLE No. / RUN No.	DOWN HOLE PID (ppm)	HEADSPACE PID (ppm)	FIELD TESTS LABORATORY TESTS GROUNDWATER OBSERVATIONS CASING ADDITIONAL NOTES	R.L. (m)
FILL	CONCRETE, 135mm thick.									G (T) = Solvent washed, Glass Jar with Teflon Lined Lid.	
	CLAYEY SANDY GRAVEL, light brown, fine to coarse grained, subangular, dry, no odour. Gravel typically blue road base or quartz to 40mm.	GC		.2				0		Plastic moisture/vapour barrier under concrete slab.	
	CLAY, very dark brown, high plasticity, trace of silt, damp, no odour, soft.	CH		.4		G (T) 1		0	12.7		
	Faint organic? odour.			.6				0			
	End of Hole at 0.8m.			.8		G (T) 2		0	0		
				1							
				1.2							

DRILLING COMPANY: Dames & Moore
DRILLER: LBH

DATE/TIME COMMENCED: 09 OCT 96
DATE/TIME COMPLETED: 09 OCT 96

Data: CORO-BII
Script: HandAugr

JOB No. 26101-008-372	DATE
LOGGED BY LBH/GN	-
APPROVED BY	

File A



HAND AUGER LOG

DAMES & MOORE

287

Lot:	23	Plan:	RP193152	Category:	PRO	CSR Cont Site ID:	140-37552
Local Authority:	BRISBANE CITY			Entry Date:	02/10/1997	MR Alter Date:	20/10/1997
Site Name:	SERVICE STATION, MILTON			Prescribed Purpose	SERVICE STATION		
Location Street:	157 CORONATION DRIVE						
Location Suburb:	MILTON	Post Code:	4064				
Owner Address:	QLD LOCAL GOVERNMENT SUPERANNUATION			Contsite File:	902038	Officer:	NIL
	C/- SAMUT & COMPANY			Current Use:	2231	Past Use:	2231
	GPO BOX 808			DNR Parcel Status:	C	Contaminant:	UNK
	BRISBANE			Prev Lot No:	23		
	QLD	Post Code:	4001	Prev Plan No:	RP193152		
				Zoning:		Area:	3973
				UXO Region:		Cont Grid Water:	U

Comments:

| NOTIFIED BY BCC - SEE LETTER DATED 26/9/97 (REF:JB:JB). SITE PREVIOUSLY OPERATED AS A SERVICE STATION. 2/10/97.TMB// CSI APPLICATION RECEIVED FROM DAMES & MOORE PTY LTD ON 07/10/97 (REF:33287-005-074): STAGE 1 AND PRELIMINARY STAGE 2 INVESTIGATIONS HAVE BEEN CARRIED OUT. A FURTHER STAGE 2 INVESTIGATION IS CURRENTLY BEING UNDERTAKEN.-20/10/97.RT.//

Lot:	23	Plan:	RP193152
Category:	NOTIFIABLE ACTIVITY		
LGA:	Brisbane City Council		
Site Name:	SERVICE STATION, MILTON		
Street:	157 CORONATION DRIVE		
Suburb:	MILTON	Post Code:	4064
Owner:	QLD LOCAL GOVERNMENT SUPERANNUATION BOARD		
Address:	C/- SAMUT & COMPANY		
	GPO BOX 808		
	BRISBANE		
	QLD		
Post Code:	4001		

Rec Type:	BP	ID:	2998
Region:		Hist. ID:	140-37552
AMA/AN:			
Notified By:	DATA CONV	Notif. Rec'd:	
Entry Date:	27/06/1998	Last Altered Date:	08/08/2001
File:	902038		
Officer:	NIL		
Parcel Status:	D	Area:	3973 m2

External References

Hazardous Contaminants

Notifiable Activities

SERVICE STATIONS

Comments

Create Date	User ID	Corr No	Officer Name	Date Final	How Finalized
14/02/2001	TSOURGR				
OFF-SITE DISPOSAL PERMIT GRANTED 14/2/01 TO REMOVE AND DISPOSE OF SOIL CONTAMINATED WITH LEAD FROM 159 CORONATION DRIVE, MILTON, TO THE BRISBANE CITY COUNCIL'S NUDGEES HARDFILL.					
27/06/2001	TSOURGR				
OFF-SITE DISPOSAL PERMIT GRANTED 27/6/01 (FOR NEW PARCEL LOT 16 ON SP135243 OF THIS BASE PARCEL L23/RP193152) TO REMOVE AND DISPOSE OF SOIL CONTAMINATED WITH LEAD FROM 159 CORONATION DRIVE, MILTON, AT BRISBANE CITY COUNCIL'S NUDGEES HARDFILL.					
08/08/2001	TSOURGR				
OFF-SITE DISPOSAL PERMIT GRANTED 7/8/01 (FOR NEW PARCEL L16/SP135243 OF THIS BASE PARCEL L23/RP193152) TO REMOVE AND DISPOSE OF SOIL CONTAMINATED WITH LEAD FROM 159 CORONATION DRIVE, MILTON, AT BRISBANE CITY COUNCIL'S NUDGEES HARDFILL.					