



Engineering the Future

THE CORPORATION OF THE TRUSTEES OF THE ROMAN CATHOLIC ARCHDIOCESE OF BRISBANE

BROOKVIEW LAUNDRY

Site Contamination Investigation Report

This document is produced by Cardno MBK (Qld) Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno MBK (Qld) Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

**DECEMBER 2001
JOB NO. 7141-01/2**

Release

Brookview Laundry

Site Contamination Investigation Report

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	SUMMARY.....	1
3.0	SITE INFORMATION	1
3.1	Location and Property Description	1
3.2	EMR Status.....	2
4.0	SITE HISTORY	2
4.1	Fuel Storage	2
5.0	CONTAMINATION.....	3
6.0	SITE DECOMMISSIONING	3
7.0	SOIL SAMPLING	4
7.1	Boiler House	4
7.2	Bulk Fuel Oil Storage	6
7.3	Transformer	8
8.0	CONCLUSION AND RECOMMENDATION	10

STATUS

PRELIMINARY

☐

DRAFT

☐

FINAL

☒

SUPERSEDED

☐

OTHER (Specify)

AUTHOR

REVIEWER

sch4p4(6) Personal information

SIGNATURE

SIGNATURE

sch4p4(6) Personal information

DATE 19-12-01

DATE 19-12-01

APPENDICES

APPENDIX A :	Certificate of Title
APPENDIX B :	EMR Search
APPENDIX C :	Article – Opening of The Good Shepherd Laundry, 1932.
APPENDIX D :	Correspondence from EPA on Site Clean-Up
APPENDIX E :	Notification of Site for Fuel Storage
APPENDIX F :	Photos
APPENDIX G :	Laboratory Analytical Results

PLANS AND FIGURES

FIGURE 1:	Site Location
FIGURE 2:	Site Layout Plan
FIGURE 3:	Soil Sampling Locations

1.0 INTRODUCTION

This report details the site investigation of the former Brookview Laundry, previously occupying part of the Australian Catholic University McAuley Campus, Prospect Road, Mitchelton.

This site was placed on the Environmental Management Register (EMR) by virtue of fuel storage to supply two boilers at the former laundry.

The investigation follows the demolition of the former laundry and subsequent examination of soil adjacent the former boiler room for potential hydrocarbon contamination.

The former laundry site is proposed to be sold by the Roman Catholic Church.

2.0 SUMMARY

The history of land use for the site has been clearly established over the period extending back to 1932. The site was used as a commercial laundry and was listed on the Environmental Management Register by virtue of fuel storage.

An accidental spill of approximately 7,000 litres of fuel oil occurred on 25 August 2000 as a result of the rupture of the concrete above ground secondary bulk fuel oil vessel. The spill contaminated soil immediately north of the above ground bulk fuel storage vessels. Ground contamination was limited to the College grounds.

The accidental spill was immediately notified at the time to the Environmental Protection Agency (EPA) and the Brisbane City Council (BCC). The site clean-up was supervised by the EPA.

Following demolition of the former laundry, site sampling revealed no soil contamination apart from one small area (adjacent the Energex transformer) which showed minor contamination from transformer oil hydrocarbons. This contaminated hydrocarbon soil was remediated on-site by aerobic bioremediation.

Validation sampling from the soil remediation process indicated the soil had been successfully remediated with hydrocarbon levels below the investigation threshold.

3.0 SITE INFORMATION

3.1 Location and Property Description

The site of the former laundry lies immediately south of the Brookside Shopping Centre, and within the Mt Maria Senior Catholic College, Osborne Road, Mitchelton (refer Figure 1, UBD May 138 Reference M5). A site layout plan is shown in Figure 2.

The real property description is: Lot 1 RP 155212

The property is under the ownership of The Corporation of the Trustees of the Roman Catholic Archdiocese of Brisbane. A copy of the Title Certificate is provided in Appendix A.

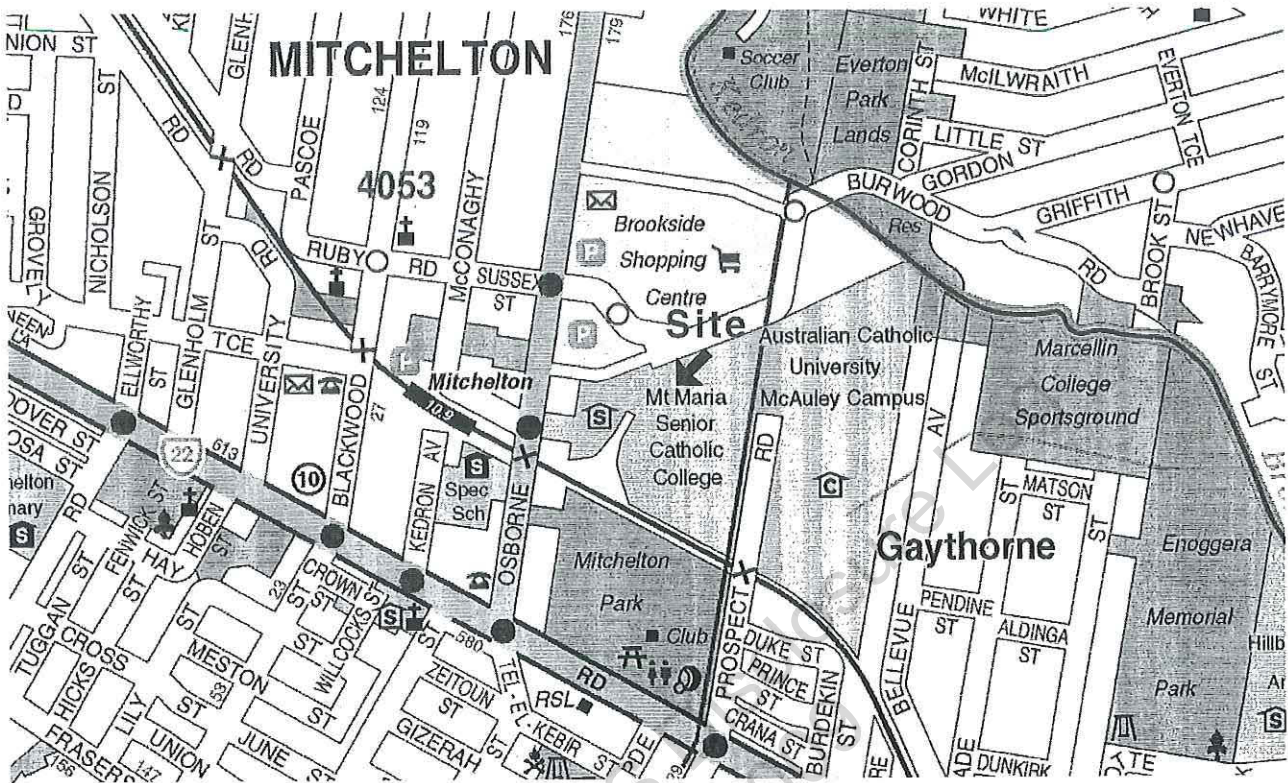


Figure 1 : Site Location

RP
LOT
PAR
COU
SITE

1

ROAD

CARPARK

EXISTING
FIRE
HYDRANT

EXISTING
CLASSROOMS

EXISTING
WORKSHOP

EXISTING
MANUAL
ARTS

EXISTING
COVERED
AREA

12.430
317°44'30"

4

ARCHDIOCESAN SERVICES

Mt Maria Senior College
Brookview Laundry

Demolition of disused Buildings

Release

3.2 EMR Status

Lot 1 RP 155212 is included on the EMR. A copy of the EMR search is provided in Appendix B.

The site was notified to the EPA on 11 October 2000 (Appendix E) for consideration for inclusion on the EMR by virtue of fuel storage, comprising, Fuel oil above ground storage 25,000 litres and diesel above ground storage 2,000 litres.

4.0 SITE HISTORY

The laundry, originally known as the Good Shepherd Laundry, opened on 30 April 1932. A newspaper article on the opening of the former laundry is included in Appendix C. The laundry consisted of a brick building, 128ft long by 85ft wide, being part of a building complex operated by the then Nuns of Our Lady of Charity of the Good Shepherd. This brick building complex comprised an entrance hall, recreational room, refectory and dormitory. The complex was for neglected children given to the care of the nuns. The laundry facility provided a source of income for the nuns with the neglected children working in the laundry. This complex later became a school and eventually Mt Maria College.

The nuns continued to operate the laundry with the site ownership being transferred to The Corporation of the Trustees of the Roman Catholic Archdiocese of Brisbane on 8 December 1993 when the laundry was leased to the Sisters of Mercy, Holy Cross Laundry.

The laundry continued in service by the Sisters of Mercy until March 2001 when laundry operations were transferred to a new laundry located at Chalk Street, Woolloowin, Brisbane. The Brookview laundry was then decommissioned, with all equipment including boilers and fuel storage removed.

4.1 Fuel Storage

There are no records as to when the respective fuel storage vessels were installed at the site. Given the establishment of the laundry in 1932, it is reasonable to assume that the fuel storage vessels to supply the boilers were installed at that time. A review of aerial photographs back to 1955 held by the Department of Natural Resources and Mines clearly showed the presence of the laundry buildings, but details of the above ground fuel storage vessels could not be clearly defined. The scale of aerial photography (1:20,000) was such that fine detail at the site could not be determined. No aerial photography prior to 1955 was available from the Department of Natural Resources and Mines.

A review of the following aerial photos was undertaken:

1955

1965

1971

1982

1987

1991

1995

1997

The above aerial photography revealed no changes in the vicinity of where the above ground fuel storage vessels were located, thus indicating that the storage vessels were intact for the period 1955 to 2001.

Two concrete above ground fuel storage vessels were contained on the site as follows:

1 x 25,000 litres Fuel Oil

1 x 7,000 litres Fuel Oil

These fuel storage vessels supplied oil to two boilers, a 3MW main boiler and a 2.5MW secondary boiler. The 2.5MW boiler was decommissioned and removed in 1998.

Given the long term establishment of the laundry since 1932, installation of the fuel storage vessels pre-date any Flammable and Combustible Liquid Storage regulations. Accordingly, no record, permit or licence for the storage of Flammable and Combustible liquids was obtained.

A small diesel generator was installed on the site, adjacent to the boiler room and the above ground fuel oil storage vessels, during the 1970's. An exact date of installation could not be confirmed. This generator contained a 2,000 litre stainless steel above ground diesel storage tank.

The capacity of this above ground diesel storage tank being below the 2,500 litre above ground storage threshold, meant that a permit for the storage of Flammable and Combustible Liquids was not required (by virtue of a minor storage).

No other bulk storage of flammable or combustible liquids (other than minor amounts of dry cleaning fluids which were housed within the laundry building were contained on the site.

5.0 CONTAMINATION

An accidental spill of approximately 7,000 litres of fuel oil occurred on 25 August 2000 as a result of the rupture of the concrete above ground secondary bulk fuel oil vessel. The spill contaminated soil immediately north of the above ground bulk fuel storage vessels. Ground contamination was limited to the College grounds.

The fuel oil also entered the stormwater drainage to the laundry site and entered nearby Kedron Brook. The accidental spill was immediately notified at the time to the Environmental Protection Agency (EPA) and the Brisbane City Council (BCC). The site clean-up and clean-up of Kedron Brook was supervised by the EPA.

The contaminated soil was excavated and removed from the site to a secure landfill. Clean soil was imported to rehabilitate the site. The Brisbane City Council supervised the cleaning of the stormwater system on the site and from the site to Kedron Brook. A letter from the EPA (dated 31st August 2000) (SE Region) confirmed satisfaction with the clean-up operations (refer Appendix D).

As a result of this incident, the EPA requested the then operators of the laundry, Sisters of Mercy, Holy Cross Laundry for notification to consider placement of the site on the Environmental Management Register. A copy of the notification (dated 11 October 2000) is included in Appendix E.

6.0 SITE DECOMMISSIONING

Decommissioning of the former laundry was undertaken in February/March 2001 with all the equipment removed from the site. This included the removal of the stand-by generator; its associated above ground stainless steel 2,000 litre diesel storage tank; boiler; 25,000 litre concrete above ground fuel oil tank and the associated fuel lines from the above ground fuel oil tank to the boiler room.

A site inspection revealed that the emergency generator and associated above ground fuel tank had been located on a thick concrete slab adjacent the former bulk fuel oil tank and the boiler house (Appendix F – Photo 1).

There was no evidence of any staining on the concrete slab and no cracking of the concrete slab was evident.

The former 25,000 litre bulk fuel oil vessel had been located on a very thick concrete slab (Appendix F – Photo 2). Some black staining around this slab was evident, primarily from the rupturing of the former 7,000 litre secondary above ground fuel oil vessel in October 2000. The slab beneath the bulk oil vessel was intact with no signs of cracking (Appendix F – Photo 3).

A concrete lined channel, housing the old fuel lines from the former bulk fuel oil tank to the boiler room, did contain residues of fuel oil. These residues of fuel oil were cleaned up by Nationwide Oil and the fuel lines removed from the site (Appendix F – Photo 4).

The boilers (3MW and 2.5M) had been removed from the boiler room (Appendix F – Photo 5). There was evidence of limited oil staining on the concrete floor of the boiler room where the fuel oil lines had terminated at the 3MW boiler (The 2.5MW boiler having been decommissioned and removed in 1998). This oil staining was cleaned and subsequent inspection revealed no staining and no cracks in the concrete floor of the boiler room.

An ENERGEX transformer was located adjacent the boiler room. Some staining of the concrete slab was evident (Appendix F – Photo 8).

7.0 SOIL SAMPLING

7.1 Boiler House

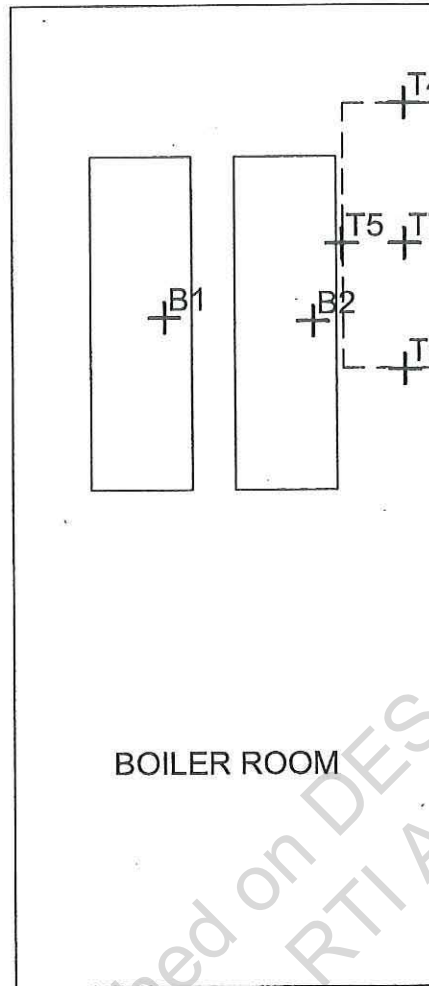
The demolition of the boiler house was witnessed. The concrete slab of the former boiler room was comprised of a thick 330mm base. No staining or smell was evident. Two samples (B1 and B2) (refer Figure 3) were taken from the soil beneath the removed slab and analysed for TPH, BTEX and PAH. These results showed levels below the level of reporting (LOR) thus indicating no hydrocarbon contamination.

Table 1: Test Results - Boiler Room

DESCRIPTION	UNIT	LOR	EIT* Levels	SAMPLE	
				B1	B2
Sample Depth (m)				0.3	0.3
PAH					
Naphthalene	mg/kg	0.5		<0.5	<0.5
2-Methylnaphthalene	mg/kg	0.5		<0.5	<0.5
2-Chloronaphthalene	mg/kg	0.5		<0.5	<0.5
Acenaphthylene	mg/kg	0.5		<0.5	<0.5
Acenaphthene	mg/kg	0.5		<0.5	<0.5
Fluorene	mg/kg	0.5		<0.5	<0.5
Phenanthrene	mg/kg	0.5		<0.5	<0.5
Anthracene	mg/kg	0.5		<0.5	<0.5
Fluoranthene	mg/kg	0.5		<0.5	<0.5
Pyrene	mg/kg	0.5		<0.5	<0.5
N-2-Fluorenylacetamide	mg/kg	0.5		<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5
Chrysene	mg/kg	0.5		<0.5	<0.5
Benzo(b) & (k)fluoranthene	mg/kg	1		<1	<1
7,12-Dimethylbenz(a)anthracene	mg/kg	0.5		<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5		<0.5	<0.5
3-Methylcholanthrene	mg/kg	0.5		<0.5	<0.5
Ideno(1,2,3-cd)pyrene	mg/kg	0.5		<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5
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
TPH					
C6 - C9 Fraction	mg/kg	2	100	<2	<2
C10 - C14 Fraction	mg/kg	50	100	<50	<50
C15 - C28 Fraction	mg/kg	100	1000	<100	<100
C29 - C36 Fraction	mg/kg	100	1000	<100	<100

- Environmental Investigation Threshold Levels (mg/kg)

TS



BOILER ROOM

LEGEND

B1 Sampling location and sample identification number

	TPH			
	C6 - C9	C10 - C14	C15 - C28	C29 - C36
on	100	100	1000	1000
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	122	<100
	<2	<50	145	113
	<2	<50	132	137
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	51	1920	212
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100
	<2	<50	<100	<100

<LOR Denotes below limit of reporting
nt Denotes not tested

7.2 Bulk Fuel Oil Storage

The slab under the former bulk fuel oil storage stand-by diesel generator and associated above ground diesel tank was excavated. The slab comprised a 330mm thick base (refer Appendix F – Photos 6 and 7) with no staining or smell evident from the soil below the slab. Similarly the concrete pipe channel was also formed over a 330mm thick base (Appendix F – Photo 4).

Soil sampling for the former bulk supply tanks (Samples BT-1, BT-2, BT-4 and BT-5); the stand-by diesel generator and its associated above ground diesel storage tank (Sample BT-3) and the fuel supply line (Samples BT-6 and BT-7) were analysed for TPH, BTEX and PAH. All samples were below LOR thus indicating that no hydrocarbon contamination was present.

Published on DES Disclosure Log
RTI Act 2009

Table 2: Test Results – Above Ground Fuel Storage Area

DESCRIPTION	UNIT	LOR	EIT* Levels	SAMPLE						
				BT-1	BT-2	BT-3	BT-4	BT-5	BT-6	BT-7
Sample Depth (m)				0.3	0.3	0.3	0.3	0.3	0.3	0.3
PAH										
Naphthalene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylnaphthalene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloronaphthalene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
N-2-Fluorenylacetamide	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b) & (k) fluoranthene	mg/kg	1		<1	<1	<1	<1	<1	<1	<1
7,12-Dimethylbenz(a) anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-Methylcholanthrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ideno(1,2,3-cd)pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BTEX										
Benzene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	mg/kg	0.2		<0.2	<0.2	<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	<0.2	<0.2	<0.2
ortho-Xylene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
TPH										
C6 - C9 Fraction	mg/kg	2	100	<2	<2	<2	<2	<2	<2	<2
C10 - C14 Fraction	mg/kg	50	100	<50	<2	<2	<2	<2	<2	<50
C15 - C28 Fraction	mg/kg	100	1000	<100	<100	122	145	132	<100	<100
C29 - C36 Fraction	mg/kg	100	1000	<100	<100	<100	113	137	<100	<100

* Environmental Investigation Threshold Levels (mg/kg)

7.3 Transformer

The transformer was located on a small slab adjacent the boiler house. This slab was yet to be demolished following removal of the transformer by ENERGEX. A black stain was noted at the side of the wall supporting the slab of the transformer (Appendix F – Photo 8). Two soil samples were taken (Samples T1 and T2) and analysed for TPH, BTEX and PCB. One sample (Sample T2) showed elevated levels of TPH in the C15-C28 fraction. No PCB's were evident, indicating that the transformer oil had been changed to PCB free oil at sometime in the past.

Table 3: Test Results - Transformer

DESCRIPTION	UNIT	LOR	EIT* Levels	Res A Level	SAMPLE	
					T1	T2
Sample Depth (m)					0.3	0.3
TPH						
C6 - C9 Fraction	mg/kg	2	100		<2	<2
C10 - C14 Fraction	mg/kg	50	100		<50	51
C15 - C28 Fraction	mg/kg	100	1000		<100	1920
C29 - C36 Fraction	mg/kg	100	1000		<100	212
TOTAL PCBs	mg/kg	0.1	1	10	<0.1	<2.0
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

* Environmental Investigation Threshold Levels (mg/kg)

The soil containing the elevated hydrocarbons (approximately 2 cu m) was excavated to a depth of 2.0m (refer Appendix F – Photo 9) and bioremediated on-site. The excavation was validated (Samples T3 to T7) free of hydrocarbons (Table 4).

Following bioremediation, the bioremediated soil was validated free of hydrocarbons (Table 5, Samples R1 and R2) and the soil respread back into the excavated hole.

Table 4 - Test Results – Transformer excavation validation

Sample Depth (m)	Sample ID	TPH			
	Batch EB41792 (Appendix H)	C6-C9	C10-C14	C15-C28	C29-C36
	Environmental Investigation Threshold Levels (mg/kg)	100	100	1000	1000
1.8	T-3	<LOR	<LOR	<LOR	<LOR
1.8	T-4	<LOR	<LOR	<LOR	<LOR
1.8	T-5	<LOR	<LOR	<LOR	<LOR
1.8	T-6	<LOR	<LOR	<LOR	<LOR
2	T-7	<LOR	<LOR	<LOR	<LOR

Table 5 - Test Results – Validation of bioremediated soil

Sample Depth (m)	Sample ID	TPH			
	Batch EB42043 (Appendix H)	C6-C9	C10-C14	C15-C28	C29-C36
	Environmental Investigation Threshold Levels (mg/kg)	100	100	1000	1000
0.2	R1	<LOR	<LOR	<LOR	<LOR
0.2	R2	<LOR	<LOR	276	<LOR

8.0 CONCLUSION AND RECOMMENDATION

The history of land use for the site has been clearly established over the period extending back to 1932. The site was used as a commercial laundry and was listed on the Environmental Management Register by virtue of fuel storage.

One area (adjacent the Energex transformer) showed minor contamination from transformer oil hydrocarbons. This contaminated hydrocarbon soil was remediated on-site by aerobic bioremediation.

Validation sampling from the soil remediation process indicated the soil had been successfully remediated with hydrocarbon levels below the investigation threshold. The remediated soil was respread over the excavated area.

It can be concluded that the area containing the elevated hydrocarbon level was successfully excavated and bioremediated.

The soil sampling investigation has revealed that the site is now clear of contamination which might pose a health risk for subsequent development. It is recommended that Lot 1, RP155212 be removed from the Environmental Management Register.

Published on DES Disclosure
RTI Act 2009

ATTACHMENTS

Published on DES Disclosure Log
RTI Act 2009

APPENDIX A

Certificate of Title

Published on DES Disclosure Log
RTI Act 2009

QUEENSLAND

(C)
Dealing No. F320986
Reference to previous
Volume Folio
1476 94

of an Estate in Fee-simple, subject nevertheless to such encumbrances, liens, and interests as are by memorandum notified hereon, in All that piece of Land situated in the County of Stanley Parish of Enoggera City of Brisbane
Containing 6.493 hectares

more or less, as shown on the Plan hereon, and therein edged red, Being Lot 1 on registered Plan No. 155212

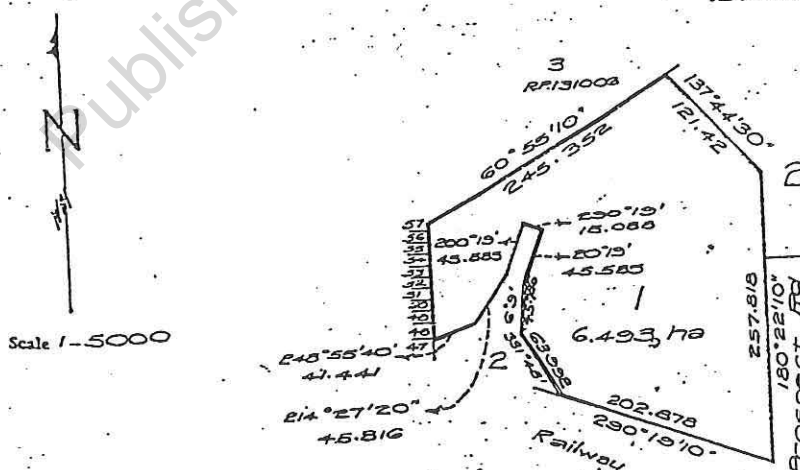
SAVING ALWAYS to the Crown all the rights and interests reserved to it by the original Deed of Grant No. 57/71 for portion 35

sch4p. 6) Personal information IN WITNESS whereof, I have hereunto signed my name and affixed my seal,
this 22nd day of October One thousand nine hundred and seventy six

Signed, Sealed, and Delivered)
in presence of 4p4(6) Personal information

sch4p4(6) Personal information

REGISTRAR OF TITLES.



The Corporation of the Trustees of the Roman Catholic Archdiocese of Brisbane

is now seized of an Estate in fee-simple in the within land

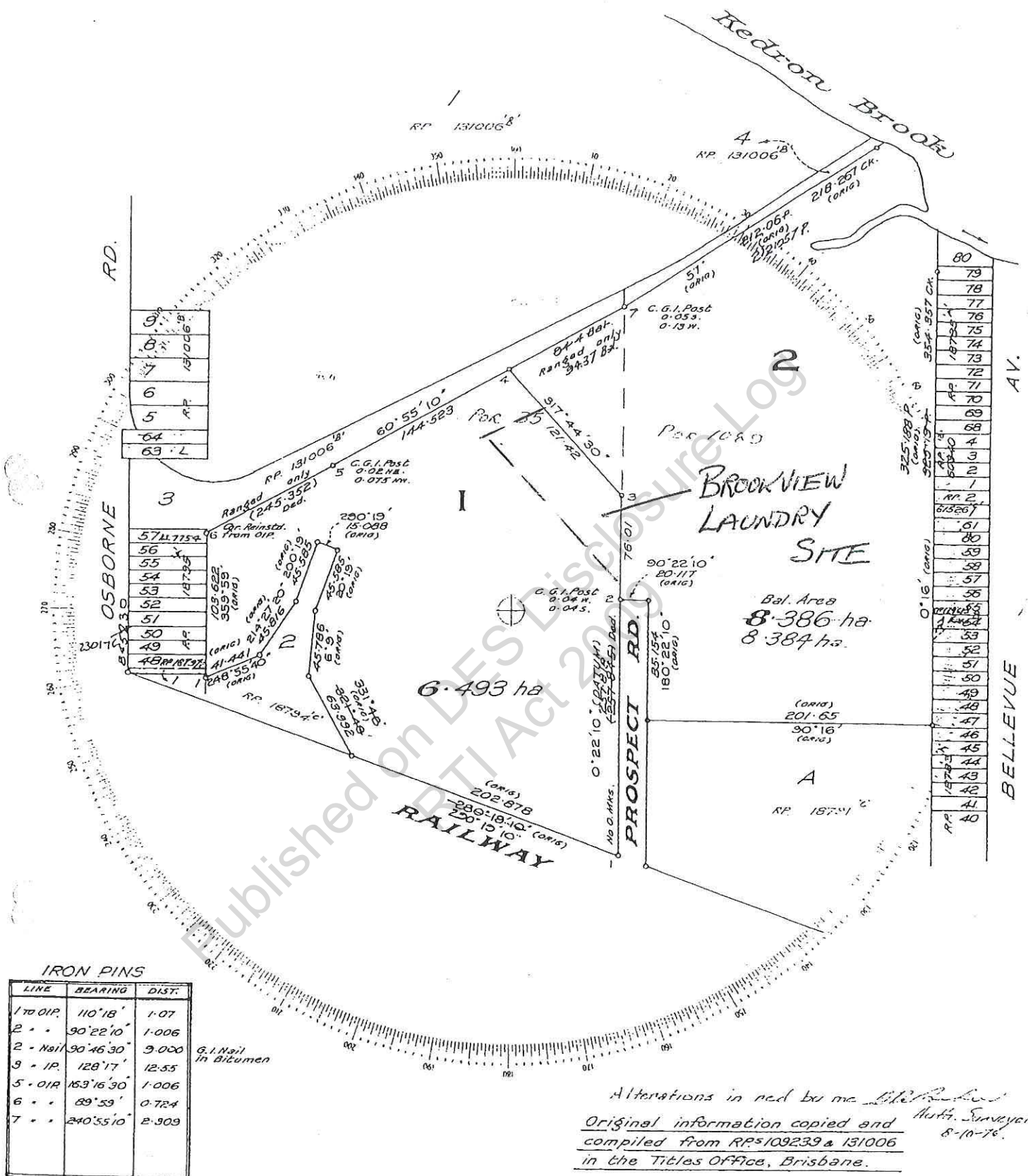
TRANSFER No. 121914 PRODUCED 8 Dec 1976

at 11.15 a m. REGD. 9 DEC 1976

sch4p4(6) Personal information

REGISTRAR OF TITLES





sch4p4(6) Personal information

Authorised Surveyor

APPENDIX B

EMR Search

Published on DES Disclosure Log
RTI Act 2009

QLD ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)

Transaction ID: 346287

29 October 2001

This response relates to a search request received for the site:

Lot: 1 Plan: RP155212

EMR RESULT

The above site IS included on the Environmental Management Register.

Lot: 1 Plan: RP155212
Address: 54 PROSPECT ROAD
ENOGGERA 4051

The site has been subject to the following Notifiable Activity pursuant to section 374 of the *Environmental Protection Act 1994*.

PETROLEUM PRODUCT OR OIL STORAGE - storing petroleum products or oil -
(a) in underground tanks with more than 200 L capacity; or
(b) in above ground tanks with -
(i) for petroleum products or oil in class 3 in packaging groups 1 and 2 of the dangerous goods code - more than 2 500 L capacity; or
(ii) for petroleum products or oil in class 3 in packaging groups 3 of the dangerous goods code - more than 5 000 L capacity; or
(iii) for petroleum products that are combustible liquids in class C1 or C2 in Australian Standard AS1940, 'The storage and handling of flammable and combustible liquids' published by Standards Australia - more than 25 000 L capacity.

CLR RESULT

The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

Please be advised that the Environmental Protection Agency will be closed for business from 5.00pm Monday 24 December 2001 and will re-open on Wednesday 2 January 2002. Searches of the Environmental Management Register and Contaminated Land Register during this time may be conducted through CITEC confirm. Call the CITEC confirm hotline on 1800 637 231 for details.

If you have any queries in relation to this search please phone (07) 3227 7370 or (07) 3225 1827.

Tess Dobinson
Acting Registrar, Contaminated Land Unit

Published on DES Disclosure Log
RTI Act 2009

Release

APPENDIX C

Article:
Opening of The Good Shepherd Laundry, 1932

Published on DES Disclosure Log
RTI Act 2009

GOOD SHEPHERD HOME AT MITCHELTON

OPENING NEXT SUNDAY

The Home of the Good Shepherd, a substantial and handsome building, illustrated elsewhere in this issue, will be opened on Sunday next by His Grace the Archbishop of Brisbane, Dr. J. Duhig, and it will mark the beginning of operations by an institution that is new to Queensland. There are many in this State, perhaps, who are, therefore, unaware of the work that is being done in other parts of the world by the nuns of Our Lady of Charity of the Good Shepherd for the reformation of girls and the care of neglected children. Their head house in Australia is at Abbotsford, Victoria, where a great and noble work is being done.

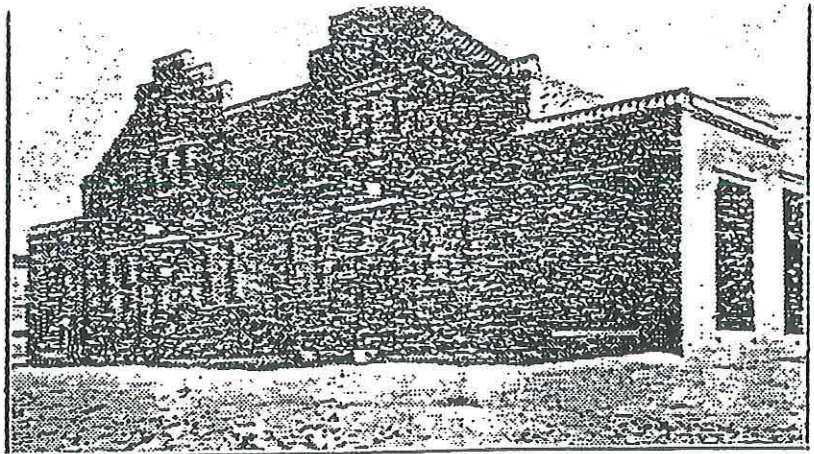
The new building is situated on one of the highest hills around Mitchelton, a property of approximately 87 acres, where it forms a striking addition to the landscape and to Brisbane's architectural features. It is, however, only portion of a scheme which, when completed, will be one of the largest and most up to date of its kind in Australia, and will cover an area of approximately 84,000 square feet. The dimensions of this first section are: Main building, 208 feet by 145 feet; laundry, 126 feet long by 85 feet wide.

THE MAIN BUILDING.

The main building comprises ground floor, entrance hall, with two reception rooms adjoining. Featured in the entrance hall is the main staircase, and adjoining the entrance hall is the class and recreation room, 76 feet long by 30 feet wide. At one end is a large stage for the presentation of plays and concerts, and an imposing ornamental proscenium which adds considerable charm. A dressing room adjoins the stage.

Another important feature on the ground floor is the chapel, 60 feet long by 30 feet wide, with additional space taken up by the sanctuary, sacristy, and vestry. In the same wing as the recreation hall is the refectory 48 feet by 30 feet, connected with the large kitchen by scullery and scullery. The bakery, where the bread for the institution will be made, adjoins the kitchen. At the end of this wing is the nuns' temporary refectory, a room 30 x 24. On both sides are arched verandas, 11ft 2in wide, adding considerable charm and coolness to the building. In the internal angle, which will eventually form the completed quadrangle, is a lavatory block, with all conveniences, hot and cold water to the baths and showers, and situated conveniently to this block is the external stair tower, giving access to the sleeping quarters above.

The first floor repeats the main outline of the ground floor, but consists entirely of sleeping quarters, the nuns section taking in one wing. The remaining wing consists of a large dormitory 71 feet long by 30 feet wide, with large lavatory block conveniently situated at the end. The whole of the space in the roof will be utilised for storing purposes. Similar to the ground floor, all rooms lead on to spacious balconies commanding a magnificent view of Mitchelton and the surrounding country.



The new Laundry of the Good Shepherd Sisters, Mitchelton.

THE GOOD SHEPHERD LAUNDRY

at Mitchelton,

WILL BE OFFICIALLY OPENED ON

SATURDAY AFTERNOON, APRIL 30, 1932,

AT 3 P.M.

The Mother Provincial and Sisters of the Good Shepherd extend a cordial invitation to all, and look forward to meeting many friends from all over Brisbane. The Good Shepherd Home is within a few minutes' walk of the Mitchelton railway station. Guests are invited to inspect the Institution after the ceremony. Train leaves Brisbane Central at 2.17 p.m., and leaves Mitchelton on the return journey at 5.25 p.m.

LAUNDRY AND WORKROOMS.

The laundry and workrooms are separated from the main building, but actually form part of the quadrangle. The internal dimensions of this structure are 126 feet by 80 feet wide, planned on a scale to meet the most minute requirements in a modern laundry. The receiving and sorting rooms are conveniently situated for the incoming vans. The soils, clothes, etc., are first deposited in the sorting room, thence to the washing room, ironing and mangle rooms. Another section is divided for the delivery room with loading stage for outgoing delivery vans.

The boiler house contains not only the boilers, but electric switchboard, pump, and all engineering requisites. Between the boiler house and the laundry a reinforced concrete underground tank has been constructed with a capacity of 60,000 gallons for the reservation of roof water. Over the main building there is another tank to give a regular pressure.

It is said by the Rev. Mother Provincial that whilst the laundry will be revenue producing, its first and definite purpose is to provide useful and healthful occupation and training for the inmates consonant with their physical capacity.

The style of architecture is Romanesque, carried out entirely of brickwork with a mottled tile roof. This style of architecture has been carried out in each section of the block, and the laundry elevation is in itself a fine feature. The materials, wherever possible, are of Queensland origin, and the whole of the work was carried out by Queensland tradesmen. The walls are plastered inside and tinted a deep cream. The medical officer's room is tiled in white, and is fitted with all sterilising apparatus. The floors are of silky oak, also the interior fittings. The architects are Messrs. Hennessy, Hennessy, and Co., of Brisbane, Sydney, and Melbourne. Mr. S. S. Carrick is the builder.

Daily Mail 11th December 1931

Release

APPENDIX D

Correspondence from EPA on Site Clean-Up

Published on DES Disclosure Log
RTI Act 2009



Environmental Protection Agency

288 Edward Street • Brisbane, Queensland • GPO Box 2771 • BRISBANE QLD 4001 • AUSTRALIA
Telephone (07) 3225 8485 • Facsimile (07) 3225 8723 • www.epw.qld.gov.au

Enquiries
Telephone
Your reference
Our reference

John Linden
(07) 3225 8567
3913

31 August 2000

Nick Clarke
Manager - Licensing and Compliance
Brisbane City Council
GPO Box 1434
BRISBANE QLD 4001

Re: Bunker oil spill at the Brookview Laundry, 162 Bellevue Avenue, Enoggera.

Dear Mr Clarke,

Please be advised that officers of the Environmental Protection Agency (EPA) have conducted preliminary investigations into an incident involving a bunker oil spill, estimated to be approximately 6000 litres, which occurred at Brookview Laundry on 25 August 2000.

At this point in time, the EPA is satisfied with the clean-up of stormwater drains and both the sealed and grassed areas adjacent to the fuel storage tanks. It is understood that the Brisbane City Council (BCC) is currently undertaking works to ensure any residual bunker oil in the stormwater pipes is contained and disposed in an appropriate manner.

The administration and enforcement of the *Environmental Protection Act 1994* in relation to carrying out storing crude oil or a petroleum product in tanks or containers having a combined total storage capacity of 10 000 litres or more but less than 500 000 litres is devolved to the local government. The EPA considers that bunker oil and fuel storage carried out at the Brookview Laundry is a devolved activity and, at this point in time, does not intend to take any further action with regard to the abovementioned oil spill.

The EPA does not consider that the Brookview Laundry is conducting ERA 17 - Fuel burning and as such, the Brookview Laundry does not presently hold a licence for this activity.

Should you wish to discuss this matter further please do not hesitate to contact John Linden of the EPA on telephone (07) 3225 8567.

Yours sincerely

sch4p4(6) Personal information

Peter Collins
Operations Manager - Compliance
Southern Region, EPA

APPENDIX E

Notification of Site for Fuel Storage

Published on DES Disclosure Log
RTI Act 2009



MERCY DISABILITY SERVICES
HOLY CROSS LAUNDRY
(ESTABLISHED IN 1889)



12 Chalk Street, Woolloowin QLD 4030

Local call: 1300 656 033

STD & MOBILE Access: (07) 3857 3155 Fax: (07) 3857 8690

11th October 2000

Ms Aleena Lovejoy
Environmental Protection Agency
Contaminated Land Unit
PO Box 155
BRISBANE ALBERT STREET Q4000

Dear Madam,

re: Lot 1 Plan RP155212 Brisbane City Council 162 Bellevue Avenue, Enoggera

We acknowledge receipt of your correspondence dated 19th September 2000 regarding Notice of Consideration of Listing Land on the Environmental Management Register.

As the lessee operating these premises at this point in time we provide the following information for your consideration.

The site is currently operated by Holy Cross Laundry as a commercial laundry utilising Fuel Oil C1 as the combustible product for boiler operation and small quantities of diesel fuel to power an emergency generator set.

A recent accidental discharge of fuel oil has resulted in a significant reduction in petroleum product and oil storage.

Our current storage capacity is 25000 litres for fuel oil and 2000 litres for diesel.

Holy Cross Laundry intends to vacate these premises no later than March 2001 and all fuel storage tanks will be removed on our departure.

Based on the guidelines identified in your correspondence it would appear that the current storage capacity does not exceed the activities considered to be notifiable under Section 118G of the Environmental Protection Act 1994.

With respect to the recent incident of accidental discharge, we have complied with all the decontamination requirements set by both the Environmental Protection Agency and the Brisbane City Council. We enclose a copy of correspondence from the Environmental

2.

Protection Agency Southern Region to the Brisbane City Council in relation to the investigation of the incident and the decontamination process for your records. This report suggests the cleanup of all surface areas and stormwater drains was completed satisfactorily.

As it is not the intention of the Roman Catholic Archdiocese to continue fuel burning activities on this site post Holy Cross Laundry operations, and in consideration of the fact that all fuel storage facilities will be removed, there would appear limited benefit in listing this site on the Environmental Management Register.

We have provided copies of all correspondence to Centacare which administers the Holy Cross Laundry lease arrangement on behalf of the Roman Catholic Archdiocese.

Should you wish to discuss this issue with Centacare, Mr Peter Halpin, Director Corporate Service would be the most appropriate point of contact. Mr Halpin's contact details are as follows:

Phone: 3224 3298 Fax: 3221 3485

Email: halpinp@bne.catholic.net.au

Postal address: The Catholic Centre, 2nd Floor,
143 Edward Street, Brisbane Q4000

Please advise if we can provide any further advice or assistance in relation to this matter.

Yours faithfully,

sch4p4(6) Personal information

DREW HUNTER
GENERAL MANAGER

APPENDIX F

Photos

Published on DES Disclosure Log
RTI Act 2009



Photo 1 : Laundry boiler room located in background. Bulk fuel oil tank formerly located on a thick concrete slab to the left. Stand-by diesel generator and above ground storage tank formerly located on the thick raised concrete slab to the left.

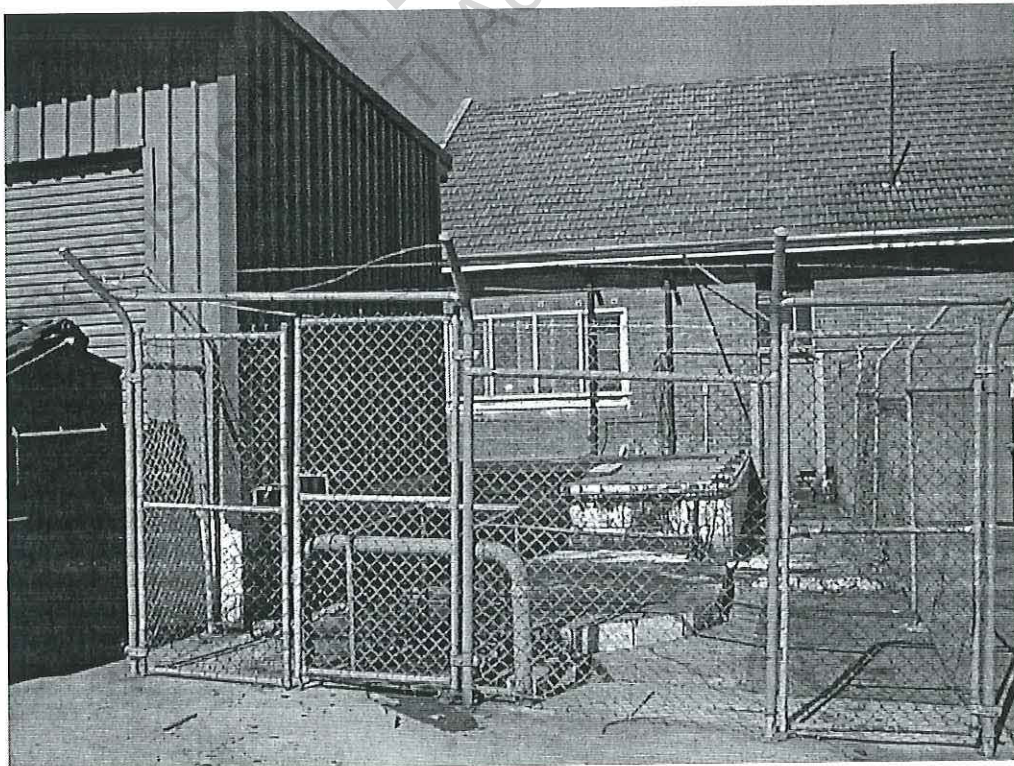


Photo 2 : Location of former 25,000 litre bulk fuel oil tank

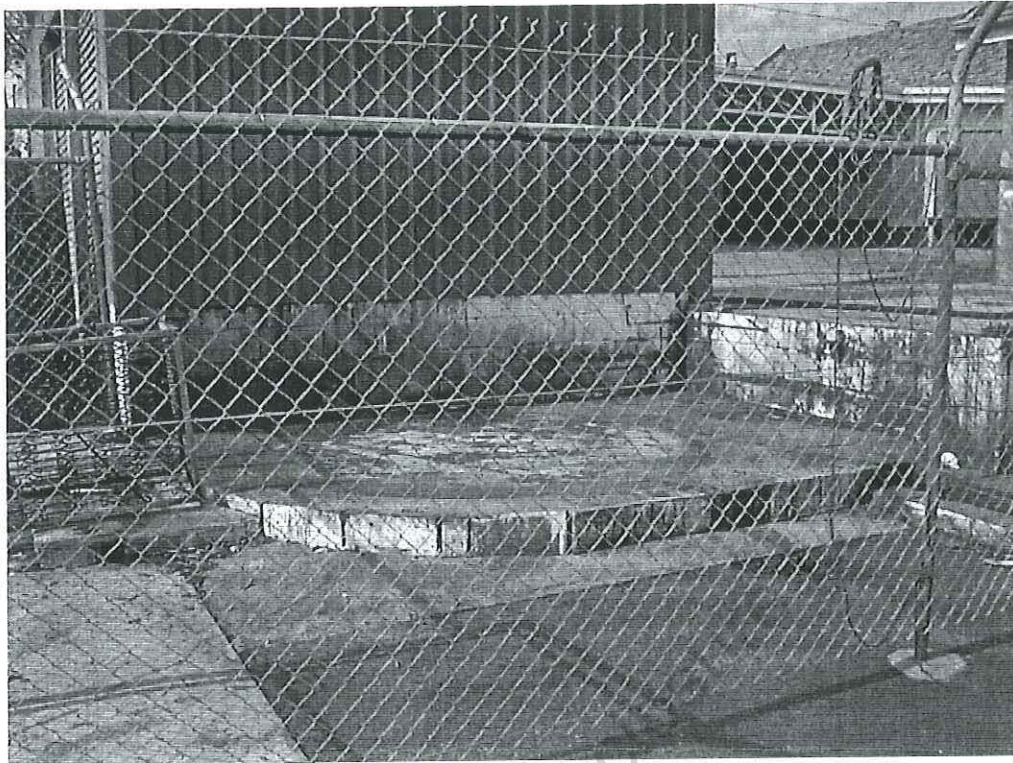


Photo 3 : Thick slab under former bulk fuel oil tank



**Photo 4 : Concrete lined channel containing the former fuel lines
from the bulk fuel oil container to the boiler room.**

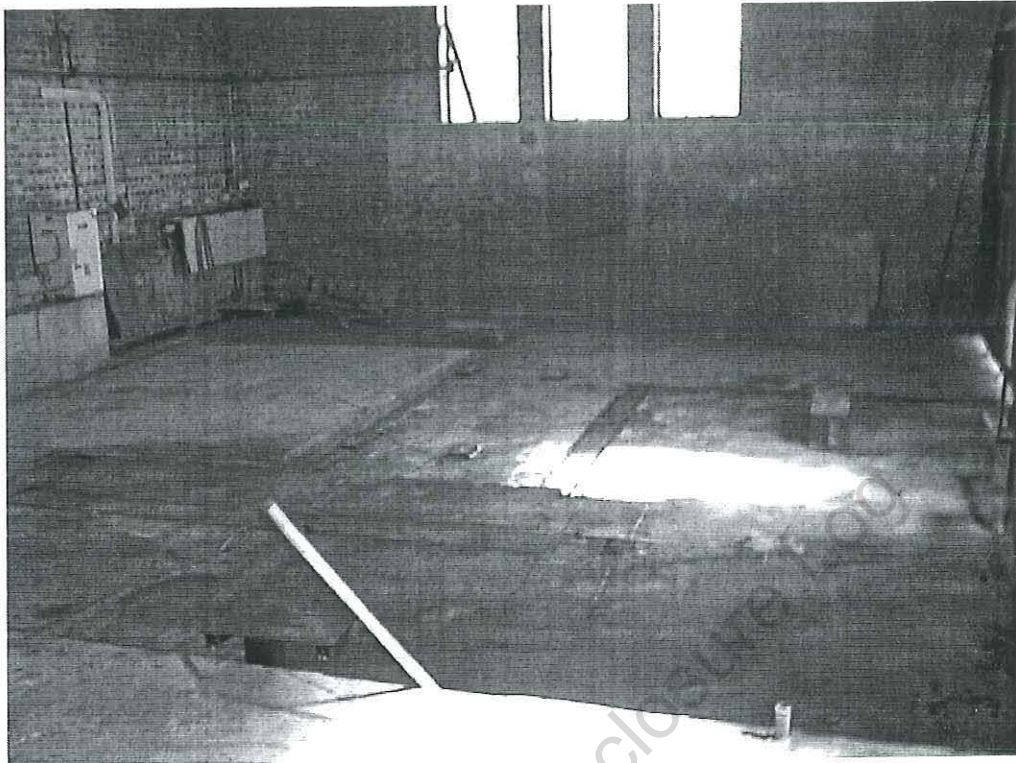


Photo 5 : Inside former boiler room. Boilers (removed) were located on a thick concrete slab.



Photo 6 : Demolition of the slab below the former bulk fuel oil vessel.



Photo 7 : Exposed thick concrete slab and soil (showing no signs of staining) below the former bulk fuel oil storage area.

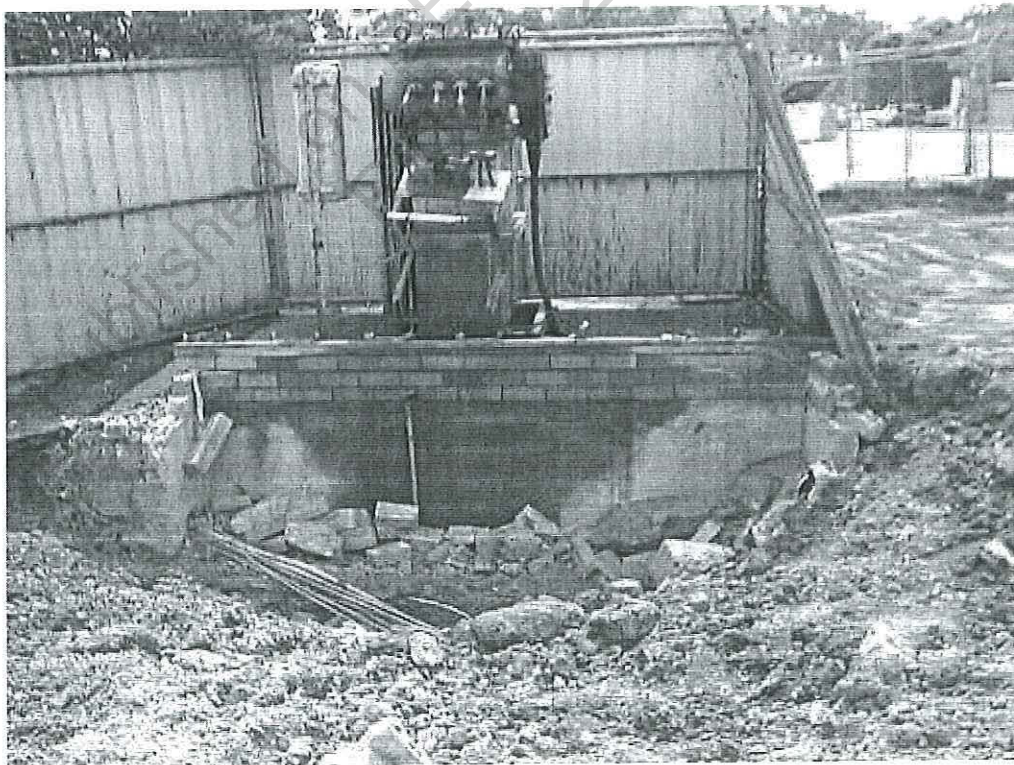


Photo 8 : Excavation adjacent old ENERGEX transformer showing staining from transformer oil.



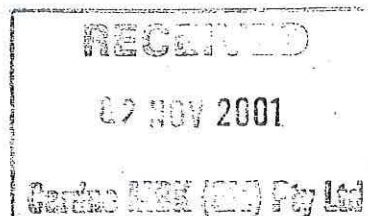
Photo 9 : Excavation of soil adjacent old ENERGEX transformer.

APPENDIX G

Laboratory Analytical Results

Published on DES Disclosure Log
RTI Act 2009

ALS Environmental



CERTIFICATE OF ANALYSIS

CONTACT: sch4p4(6) Personal information
CLIENT: CARDNO MBK (QLD) PTY LTD
ADDRESS:
P O BOX 388
TOOWONG QLD 4066
ORDER No.:
PROJECT:

BATCH: EB40794
SUB BATCH: 0
LABORATORY: BRISBANE
DATE RECEIVED: 12/10/2001
DATE COMPLETED: 31/10/2001
SAMPLE TYPE: SOIL
No. of SAMPLES: 11

COMMENTS

Results apply to sample(s) as submitted. Samples analysed on an as received basis. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222

Fax: 61-7-3243 7218

Email: sch4p4(6) Personal information@als.com.au

Signatory

sch4p4(6) Personal information

LABORATORIES

AUSTRALASIA

Brisbane
Melbourne
Sydney
Newcastle
Auckland

Hong Kong
Singapore
Kuala Lumpur
Bogor

AMERICAS

Vancouver
Santiago
Antofagasta
Lima

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of accreditation. This document shall not be reproduced except in full.



Batch: EB40794
 Sub Batch: 0
 Date of Issue: 31/10/2001
 Client: CARDNO MBK (QLD) PTY LTD
 Client Reference:

CERTIFICATE OF ANALYSIS



METHOD	ANALYSIS DESCRIPTION	SAMPLE IDENTIFICATION											
		Laboratory I.D.		1	2	3	4	5	6	7	8	9	10
		Date Sampled		12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001
		UNIT	LOR	T1	T2	B1	B2	BT-1	BT-2	BT-3	BT-4	BT-5	BT-6
EA-055	Moisture Content (dried @ 103°C)	%	0.1	10.3	14.5	11.8	10.9	12.4	10.6	12.6	11.5	10.5	11.1
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS												
EP-071-SS	C6 - C9 Fraction	mg/kg	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
EP-071-SS	C10 - C14 Fraction	mg/kg	50	<50	51	<50	<50	<50	<50	<50	<50	<50	<50
EP-071-SS	C15 - C28 Fraction	mg/kg	100	<100	1920	<100	<100	<100	<100	122	145	132	<100
EP-071-SS	C29 - C36 Fraction	mg/kg	100	<100	212	<100	<100	<100	<100	<100	113	137	<100
EP-080-SS	BTEX												
EP-080-SS	Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080-SS	Toluene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080-SS	Chlorobenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080-SS	Ethylbenzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080-SS	ortho-Xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES												
EP-080S-SS	1,2-Dichloroethane-D4	%	1	82	82	81	89	91	92	99	88	93	99
EP-080S-SS	Toluene-D8	%	1	106	100	103	105	99	101	99	104	100	99
EP-080S-SS	4-Bromofluorobenzene	%	1	96	91	94	97	92	93	92	93	91	91



Batch: EB40794
Sub Batch: 0
Date of Issue: 31/10/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION							
				Laboratory I.D.	11						
				Date Sampled	12/10/2001						
				BT-7							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR								
EA-055	Moisture Content (dried @ 103°C)	%	0.1	11.4							
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS										
EP-071-SS	C6 - C9 Fraction	mg/kg	2	<2							
EP-071-SS	C10 - C14 Fraction	mg/kg	50	<50							
EP-071-SS	C15 - C28 Fraction	mg/kg	100	<100							
EP-071-SS	C29 - C36 Fraction	mg/kg	100	<100							
EP-080-SS	BTEX										
EP-080-SS	Benzene	mg/kg	0.2	<0.2							
EP-080-SS	Toluene	mg/kg	0.2	<0.2							
EP-080-SS	Chlorobenzene	mg/kg	0.2	<0.2							
EP-080-SS	Ethylbenzene	mg/kg	0.2	<0.2							
EP-080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2							
EP-080-SS	ortho-Xylene	mg/kg	0.2	<0.2							
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES										
EP-080S-SS	1,2-Dichloroethane-D4	%	1	103							
EP-080S-SS	Toluene-D8	%	1	98							
EP-080S-SS	4-Bromofluorobenzene	%	1	89							



Batch: EB40794
Sub Batch: 0
Date of Issue: 31/10/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION									
				Laboratory I.D.	200	402	403						
				Date Sampled	12/10/2001	12/10/2001	12/10/2001						
				Method	Blank 1	TPHT3379 SCS % Rec	TPHT3379 DCS % Rec						
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	CHECKS AND SPIKES									
EA-055	Moisture Content (dried @ 103°C)	%	0.1	---	---	---							
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS												
EP-071-SS	C6 - C9 Fraction	mg/kg	2	<2	99.8%	118%							
EP-071-SS	C10 - C14 Fraction	mg/kg	50	<50	94.6%	92.5%							
EP-071-SS	C15 - C28 Fraction	mg/kg	100	<100	102%	101%							
EP-071-SS	C29 - C36 Fraction	mg/kg	100	<100	---	---							
EP-080-SS	BTEX												
EP-080-SS	Benzene	mg/kg	0.2	<0.2	101%	98.4%							
EP-080-SS	Toluene	mg/kg	0.2	<0.2	104%	100%							
EP-080-SS	Chlorobenzene	mg/kg	0.2	<0.2	98.3%	97.8%							
EP-080-SS	Ethylbenzene	mg/kg	0.2	<0.2	100%	101%							
EP-080-SS	meta- & para-Xylene	mg/kg	0.2	<0.2	99.6%	103%							
EP-080-SS	ortho-Xylene	mg/kg	0.2	<0.2	101%	103%							
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES												
EP-080S-SS	1,2-Dichloroethane-D4	%	1	97	90	98							
EP-080S-SS	Toluene-D8	%	1	104	99	102							
EP-080S-SS	4-Bromofluorobenzene	%	1	87	97	101							



CERTIFICATE OF ANALYSIS

CONTACT: sch4p4(6) Personal information
CLIENT: CARDNO MBK (QLD) PTY LTD
ADDRESS:
 P O BOX 388
 TOOWONG QLD 4066
ORDER No.:
PROJECT:

BATCH: EB40794
SUB BATCH: 1
LABORATORY: BRISBANE
DATE RECEIVED: 12/10/2001
DATE COMPLETED: 31/10/2001
SAMPLE TYPE: SOIL
No. of SAMPLES: 9

COMMENTS

Results apply to sample(s) as submitted. Samples analysed on an as received basis. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
 32 Shand Street
 Stafford QLD 4053
 Australia

Phone: 61-7-3243 7222

Fax: 61-7-3243 7218

Email: Personal@als.com.au

Signatory

sch4p4(6) Personal information

LABORATORIES

AUSTRALASIA

Brisbane
 Melbourne
 Sydney
 Newcastle
 Auckland

Hong Kong
 Singapore
 Kuala Lumpur
 Bogor

AMERICAS

Vancouver
 Santiago
 Antofagasta
 Lima

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of accreditation. This document shall not be reproduced except in full.



Batch: EB40794
 Sub Batch: 1
 Date of Issue: 31/10/2001
 Client: CARDNO MBK (QLD) PTY LTD
 Client Reference:

CERTIFICATE OF ANALYSIS



				SAMPLE IDENTIFICATION								
		Laboratory I.D.		3	4	5	6	7	8	9	10	11
		Date Sampled		12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001	12/10/2001
				B1	B2	BT-1	BT-2	BT-3	BT-4	BT-5	BT-6	BT-7
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR									
EA-055	Moisture Content (dried @ 103°C)	%	0.1	11.8	10.9	12.4	10.6	12.6	11.5	10.5	11.1	11.4
EP-075B-SS	POLYNUCLEAR AROMATICS											
EP-075B-SS	Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	2-Methylnaphthalene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	2-Chloronaphthalene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Fluorene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Phenanthrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	N-2-Fluorenylacetamide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Chrysene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
EP-075B-SS	7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	3-Methylcholanthrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
EP-075T-SS	BASE/NEUTRAL EXTRACTABLE SURROGATES											
EP-075T-SS	Nitrobenzene-D5	%	1	94	92	92	89	91	86	83	98	96
EP-075T-SS	1,2-Dichlorobenzene-D4	%	1	65	65	63	59	66	69	66	74	70
EP-075T-SS	2-Fluorobiphenyl	%	1	88	90	92	88	84	86	85	104	95
EP-075T-SS	Anthracene-d10	%	1	78	79	86	78	84	83	78	90	79
EP-075T-SS	p-Terphenyl-D14	%	1	78	81	92	87	88	84	78	90	82



Batch: EB40794
Sub Batch: 1
Date of Issue: 31/10/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION										
				Laboratory I.D.	200	404	405							
				Date Sampled	12/10/2001	12/10/2001	12/10/2001							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method	SVOCS1094	SVOCS1094								
				Blank 1	SCS % Rec	DCS % Rec								
				CHECKS AND SPIKES										
EA-055	Moisture Content (dried @ 103°C)	%	0.1	----	----	----								
EP-075B-SS	POLYNUCLEAR AROMATICS													
EP-075B-SS	Naphthalene	mg/kg	0.5	≤0.5	74.2%	81.0%								
EP-075B-SS	2-Methylnaphthalene	mg/kg	0.5	≤0.5	77.1%	80.4%								
EP-075B-SS	2-Chloronaphthalene	mg/kg	0.5	≤0.5	73.1%	80.2%								
EP-075B-SS	Acenaphthylene	mg/kg	0.5	<0.5	78.5%	84.2%								
EP-075B-SS	Acenaphthene	mg/kg	0.5	<0.5	78.4%	79.2%								
EP-075B-SS	Fluorene	mg/kg	0.5	<0.5	79.9%	83.1%								
EP-075B-SS	Phenanthrene	mg/kg	0.5	<0.5	79.9%	81.5%								
EP-075B-SS	Anthracene	mg/kg	0.5	<0.5	81.4%	80.4%								
EP-075B-SS	Fluoranthene	mg/kg	0.5	<0.5	85.7%	83.0%								
EP-075B-SS	Pyrene	mg/kg	0.5	<0.5	84.0%	82.3%								
EP-075B-SS	N-2-Fluorenylacetamide	mg/kg	0.5	<0.5	84.1%	82.1%								
EP-075B-SS	Benz(a)anthracene	mg/kg	0.5	<0.5	82.6%	83.8%								
EP-075B-SS	Chrysene	mg/kg	0.5	<0.5	102%	81.8%								
EP-075B-SS	Benzo(b) & (k)fluoranthene	mg/kg	1	<1	80.7%	83.4%								
EP-075B-SS	7,12-Dimethylbenz(a)anthracene	mg/kg	0.5	<0.5	77.8%	80.2%								
EP-075B-SS	Benzo(a)pyrene	mg/kg	0.5	<0.5	77.6%	80.4%								
EP-075B-SS	3-Methylcholanthrene	mg/kg	0.5	<0.5	84.8%	86.2%								
EP-075B-SS	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	79.4%	82.3%								
EP-075B-SS	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	79.2%	81.4%								
EP-075B-SS	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	79.5%	83.0%								
EP-075T-SS	BASE/NEUTRAL EXTRACTABLE SURROGATES													
EP-075T-SS	Nitrobenzene-D5	%	1	107	77	86								
EP-075T-SS	1,2-Dichlorobenzene-D4	%	1	89	70	77								
EP-075T-SS	2-Fluorobiphenyl	%	1	96	75	82								
EP-075T-SS	Anthracene-d10	%	1	99	84	82								
EP-075T-SS	p-Terphenyl-D14	%	1	99	83	84								



CERTIFICATE OF ANALYSIS

CONTACT: sch4p4(6) Personal information
CLIENT: CARDNO MBK (QLD) PTY LTD
ADDRESS:
P O BOX 388
TOOWONG QLD 4066
ORDER No.:
PROJECT:

BATCH: EB40794
SUB BATCH: 2
LABORATORY: BRISBANE
DATE RECEIVED: 12/10/2001
DATE COMPLETED: 31/10/2001
SAMPLE TYPE: SOIL
No. of SAMPLES: 2

COMMENTS

Results apply to sample(s) as submitted. 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.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222

Fax: 61-7-3243 7218

Email: sch4p4(6) Personal information@als.com.au

Signatory

sch4p4(6) Personal information

LABORATORIES

AUSTRALASIA

Brisbane
Melbourne
Sydney
Newcastle
Auckland

Hong Kong
Singapore
Kuala Lumpur
Bogor

AMERICAS

Vancouver
Santiago
Antofagasta
Lima

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of accreditation. This document shall not be reproduced except in full.





Batch: EB40794
Sub Batch: 2
Date of Issue: 31/10/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

CERTIFICATE OF ANALYSIS

				SAMPLE IDENTIFICATION									
				Laboratory I.D.	1	2							
				Date Sampled	12/10/2001	12/10/2001							
					T1	T2							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR										
EA-055	Moisture Content (dried @ 103°C)	%	0.1		10.3	14.5							
EP-066-SS	Total Polychlorinated biphenyls	mg/kg	0.1		<0.1	<2.0							
EP-066S-SS	POLYCHLORINATED BIPHENYL SURROGATE												
EP-066S-SS	Decachlorobiphenyl	%	1		99	77							



ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB40794

DATE BATCH RECEIVED : 12/10/01

CLIENT : Cardno MBK

DATE BATCH COMPLETED : 01/11/01

Where applicable, internal standards are added to sample extracts prior to instrumental analysis.
Absolute peak areas and retention times fall within the criteria specified in the individual methods.

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-066	PCB	Soil	Tumbler	USEPA 8270B	PCBS364	18/10/01	22/10/01
EP-071	TPH-Volatile	Soil	USEPA 5030 A	USEPA 8260A	VOCS3379	16/10/01	22/10/01
	-Semivolatile	Soil	Tumbler	USEPA 8015A	TPHT3379	17/10/01	18/10/01
EP-075	Semivolatile Scan	Soil	Tumbler	USEPA 8270B	SVOCS1094	17/10/01	23/10/01
EP-080	BTEX	Soil	USEPA 5030 A	USEPA 8260A	VOCS3379	16/10/01	22/10/01

BATCH QUALITY CONTROL

ALS EP-066 : POLYCHLORINATED BIPHENYLS

QC LOT No. : PCBS364
MATRIX: Soil

ANALYST: K. HEGARTY

COMPOUND	Blank Conc. mg/kg	Spike Conc. mg/kg	QC SPIKE RESULTS				Control Limits		
			SCS Conc mg/kg	DCS Conc mg/kg	Average Rec. %	RPD %	Rec.		RPD %
							Low	High	
Total PCB	<LOR	0.5	0.35	0.42	76	19	41	96.4	20

Monochlorobiphenyl	ND	-	0.00	0.00
Dichlorobiphenyl	ND	-	0.00	0.00
Trichlorobiphenyl	ND	-	0.12	0.12
Tetrachlorobiphenyl	ND	-	1.46	1.55
Pentachlorobiphenyl	ND	-	3.26	3.85
Hexachlorobiphenyl	ND	-	1.78	2.51
Heptachlorobiphenyl	ND	-	0.29	0.32
Octachlorobiphenyl	ND	-	0.00	0.00
Nonachlorobiphenyl	ND	-	0.00	0.00
Decachlorobiphenyl	ND	-	0.00	0.00

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.
- 3) ND : Compound not detected

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCS3379
MATRIX : Soil

ANALYST: MAT TAYLOR

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	20	20.0	23.7	109	17	88	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.

Release

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

Matrix : Soil

Analyst : Tim Kilmister

QC Lot : TPHT3379

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	%
C10-C14	50	<LOR	300	284	278	94	2	69	120	20
C15-C28	100	<LOR	560	573	564	102	2	61	120	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.

Release

BATCH QUALITY CONTROL

ALS EP-075 : SEMIVOLATILE SCAN

QC LOT No. :
MATRIX:

SVOCs1096
Soil

ANALYST: G Entwistle

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	1.09	1.23	93	12	41	111	35
2-Chlorophenol	<LOR	1.25	1.05	1.20	90	13	45	115	35
2-Methylphenol	<LOR	1.25	1.03	1.13	87	9	54	110	35
3- & 4-Methylphenol	<LOR	2.50	2.14	2.21	87	3	35	118	35
2-Nitrophenol	<LOR	1.25	1.23	1.25	99	2	45	110	35
2,4-Dimethylphenol	<LOR	1.25	0.68	0.55	49	21	15	117	35
2,4-Dichlorophenol	<LOR	1.25	1.14	1.31	98	14	51	111	35
2,6-Dichlorophenol	<LOR	1.25	1.04	1.00	82	4	54	105	35
4-Chloro-3-methylphenol	<LOR	1.25	1.46	1.25	108	16	52	114	35
2,4,6-Trichlorophenol	<LOR	1.25	1.03	1.17	88	13	55	109	35
2,4,5-Trichlorophenol	<LOR	1.25	0.97	1.23	88	24	51	108	35
Pentachlorophenol	<LOR	1.25	1.35	1.73	123	25	16	151	35
EP-075B : POLYAROMATIC HYDROCARBONS									
Naphthalene	<LOR	1.25	1.02	1.14	87	11	50	110	35
2-Methylnaphthalene	<LOR	1.25	1.04	1.17	88	12	54	107	35
2-Chloronaphthalene	<LOR	1.25	1.03	1.19	89	14	57	106	35
Acenaphthalene	<LOR	1.25	1.03	1.16	88	12	59	107	35
Acenaphthene	<LOR	1.25	1.00	1.21	89	19	57	103	35
Fluorene	<LOR	1.25	1.10	1.18	91	7	58	106	35
Phenanthrene	<LOR	1.25	1.05	1.22	91	15	58	107	35
Anthracene	<LOR	1.25	1.01	1.16	87	14	56	107	35
Fluoranthrene	<LOR	1.25	1.03	1.19	89	14	59	109	35
Pyrene	<LOR	1.25	0.94	1.17	84	21	59	109	35
N-2-Fluorenylacetimide	<LOR	1.25	1.01	1.31	93	26	49	120	35
Benz(a)anthracene	<LOR	1.25	1.02	1.20	89	16	56	109	35
Chrysene	<LOR	1.25	1.06	1.26	93	17	61	105	35
Benzo(b) & (k) fluoranthene	<LOR	2.50	1.88	2.14	80	13	57	109	35
7,12-Dimethyl benz(a)anthracene	<LOR	1.25	1.18	1.39	103	17	46	125	35
Benzo(a)pyrene	<LOR	1.25	0.85	1.05	76	20	56	106	35
3-Methylcholanthrene	<LOR	1.25	0.95	1.20	86	24	53	109	35
Indeno(1,2,3-cd)pyrene	<LOR	1.25	0.76	0.91	67	18	48	120	35
Dibenz(a,h)anthracene	<LOR	1.25	0.75	0.93	67	21	49	120	35
Benzo(g,h,i)perylene	<LOR	1.25	0.76	0.89	66	16	45	122	35
EP-075C : PHTHALATE ESTERS									
Dimethylphthalate	<LOR	1.25	1.11	1.27	95	13	52	142	35
Diethylphthalate	<LOR	1.25	1.20	1.29	99	7	61	138	35
Di-n-butylphthalate	<LOR	1.25	1.12	1.30	97	15	57	155	35
Benzyl butyl phthalate	<LOR	1.25	1.12	1.29	97	14	50	143	35
Bis(2-ethylhexyl)phthalate	<LOR	1.25	1.45	1.60	122	10	39	174	35
Di-n-octylphthalate	<LOR	1.25	1.13	1.32	98	16	44	150	35

EP-075D : NITROSAMINES

N-Nitrosomethylethylamine	<LOR	1.25	0.76	0.92	67	19	19	137	35
N-Nitrosodiethylamine	<LOR	1.25	0.71	0.82	61	14	36	127	35
N-Nitrosopyrrolidine	<LOR	1.25	0.60	0.75	54	23	24	123	35
N-Nitrosomorpholine	<LOR	1.25	0.65	0.73	55	11	39	136	35
N-Nitrosodi-n-propylamine	<LOR	1.25	0.83	0.92	70	10	44	132	35
N-Nitrosopiperidine	<LOR	1.25	0.96	1.10	82	13	42	127	35
N-Nitrosodibutylamine	<LOR	1.25	0.79	0.85	65	7	40	130	35
Diphenylamine & N-Nitrosodiphenylamine	<LOR	2.50	1.98	2.17	83	9	8	146	35
Diallate	<LOR								
Methapyriline	<LOR	1.25	1.05	1.21	91	14	0	181	35

EP-075E : NITROAROMATICS AND KETONES

2-Picoline	<LOR	1.25	0.82	1.12	78	31	0	137	35
Acetophenone	<LOR	1.25	1.13	1.26	96	10	58	124	35
Nitrobenzene	<LOR	1.25	1.03	1.15	87	11	53	123	35
Isophorone	<LOR	1.25	1.14	1.27	97	11	54	127	35
2,6-Dinitrotoluene	<LOR	1.25	1.20	1.34	101	11	33	131	35
2,4-Dinitrotoluene	<LOR	1.25	1.08	1.17	90	7	29	129	35
1-Naphthalemine	<LOR	1.25	0.74	1.55	92	71 *	0	248	35
4-Nitroquinoline-N-oxide	<LOR	1.25	2.21	2.38	184	7	0	210	35
5-Nitro-o-toluidine	<LOR	1.25	1.13	1.26	96	12	0	208	35
Azobenzene	<LOR	2.50	2.10	2.26	87	7	64	141	35
1,3,5-Trinitrobenzene	<LOR	1.25	0.77	0.93	68	19	0	142	35
Phenacetin	<LOR	1.25	1.11	1.21	93	9	16	148	35
4-Aminobiphenyl	<LOR	1.25	0.42	0.72	46	52 *	0	149	35
Pentachloronitrobenzene	<LOR	1.25	1.13	1.19	92	5	43	134	35
Pronamide	<LOR	1.25	1.09	1.22	92	11	46	148	35
Dimethylaminoazobenzene	<LOR	1.25	1.01	1.21	89	18	27	142	35
Chlorobenzilate	<LOR	1.25	1.13	1.30	97	14	45	147	35

EP-075F : HALOETHERS

Bis(2-chloroethyl)ether	<LOR	1.25	0.71	1.03	69	37 *	22	132	35
Bis(2-chloroethoxy)methane	<LOR	1.25	1.03	1.18	89	14	54	131	35
4-Chlorophenyl phenyl ether	<LOR	1.25	1.15	1.23	95	6	58	127	35
4-Bromophenyl phenyl ether	<LOR	1.25	1.15	1.30	98	12	56	131	35

EP-075G : CHLORINATED HYDROCARBONS

1,3-Dichlorobenzene	<LOR	1.25	0.83	1.03	74	21	56	111	35
1,4-Dichlorobenzene	<LOR	1.25	1.06	1.13	88	6	54	109	35
1,2-Dichlorobenzene	<LOR	1.25	1.02	1.17	88	13	55	113	35
Hexachloroethane	<LOR	1.25	0.99	1.14	85	14	44	117	35
1,2,4-Trichlorobenzene	<LOR	1.25	1.06	1.21	91	13	59	117	35
Hexachloropropylene	<LOR	1.25	0.87	0.94	72	9	0	168	35
Hexachlorobutadiene	<LOR	1.25	1.12	1.25	95	11	49	119	35
Hexachlorocyclopentadiene	<LOR	1.25	0.21	0.29	20	33	0	145	35
Pentachlorobenzene	<LOR	1.25	1.08	1.17	90	9	62	122	35
Hexachlorobenzene	<LOR	1.25	1.14	1.23	95	8	25	145	35

EP-075H : ANILINES AND BENZIDINES

Aniline	<LOR	1.25	0.39	0.82	49	72 *	0	165	35
4-Chloroaniline	<LOR	1.25	0.96	1.50	98	44 *	0	150	35
2-Nitroaniline	<LOR	1.25	1.08	1.27	94	16	11	137	35
3-Nitroaniline	<LOR	1.25	1.05	1.26	92	18	5	143	35
Dibenzofuran	<LOR	1.25	1.05	1.11	86	6	62	132	35
4-Nitroaniline	<LOR	1.25	0.96	1.13	83	16	7	151	35
Carbazole	<LOR	1.25	1.09	1.25	94	14	55	133	35
3,3'Dichlorobenzidine	<LOR	1.25	0.95	1.42	95	39 *	0	193	35

EP-075I : ORGANOCHLORINE PESTICIDES

alpha-BHC	<LOR	1.25	1.14	1.21	94	6	61	123	35
beta- & gamma-BHC	<LOR	2.50	2.12	2.30	88	8	61	130	35
delta-BHC	<LOR	1.25	0.99	1.20	87	19	53	139	35
Heptachlor	<LOR	1.25	0.99	1.08	83	9	49	141	35
Aldrin	<LOR	1.25	0.98	1.16	86	17	61	125	35
Heptachlorepoxyde	<LOR	1.25	1.10	1.28	95	16	59	129	35
Endosulfan 1	<LOR	1.25	1.03	1.19	89	15	56	133	35
p,p'-DDE	<LOR	1.25	1.16	1.39	102	18	60	123	35
Dieldrin	<LOR	1.25	1.06	1.14	88	7	60	157	35
Endrin	<LOR	1.25	1.02	1.26	91	21	32	145	35
Endosulfan 2	<LOR	1.25	1.03	1.19	89	15	59	133	35
p,p'-DDD	<LOR	1.25	1.11	1.35	98	20	60	137	35
Endosulfan sulfate	<LOR	1.25	0.93	1.16	84	22	49	157	35
p,p'-DDT	<LOR	1.25	0.79	0.95	70	19	8	179	35

EP-075J : ORGANOPHOSPHORUS PESTICIDES

Dichlorvos	<LOR	1.25	1.09	1.16	90	7	22	144	35
Dimethoate	<LOR	1.25	1.07	1.19	90	11	15	159	35
Diazinon	<LOR	1.25	1.18	1.40	103	17	27	137	35
Chlorpyrifos methyl	<LOR	1.25	1.04	1.25	92	19	30	145	35
Malathion	<LOR	1.25	1.05	1.24	92	17	32	146	35
Fenthion	<LOR	1.25	1.12	1.27	96	13	36	131	35
Chlorpyrifos	<LOR	1.25	1.07	1.23	92	13	19	167	35
Phosphorothion	<LOR	1.25	1.16	1.36	101	15	27	139	35
Chlorfenvinphos-E	<LOR	1.25	ND	ND	--	--	--	--	--
Chlorfenvinphos-Z	<LOR	1.25	1.17	1.30	99	11	26	146	35
Prothiofos	<LOR	1.25	1.07	1.25	93	15	40	137	35
Ethion	<LOR	1.25	1.11	1.34	98	19	31	145	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-080 : BTEX ANALYSIS

QC Lot No. : VOCS3379
MATRIX : Soil

ANALYST: MAT TAYLOR

COMPOUND	Blank	Spike	QC SPIKE RESULTS				Control Limits		
	Results	Conc	SCS	DCS	Av.	RPD	Recovery		RPD
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
Benzene	<LOR	1.0	1.0	1.0	100	3	92	112	20
Toluene	<LOR	1.0	1.0	1.0	102	4	88	113	20
Chlorobenzene	<LOR	1.0	1.0	1.0	98	1	92	110	20
Ethylbenzene	<LOR	1.0	1.0	1.0	101	1	91	112	20
m- & p-Xylene	<LOR	1.0	1.0	1.0	101	3	89	114	20
o-Xylene	<LOR	1.0	1.0	1.0	102	2	90	113	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.

ALS Environmental



CERTIFICATE OF ANALYSIS

CONTACT: sch4p4(6) Personal information
CLIENT: CARDNO MBK (QLD) PTY LTD
ADDRESS:
P O BOX 388
TOOWONG QLD 4066
ORDER No.: 4571
PROJECT:

BATCH: EB41792
SUB BATCH: 0
LABORATORY: BRISBANE
DATE RECEIVED: 23/11/2001
DATE COMPLETED: 04/12/2001
SAMPLE TYPE: SOIL
No. of SAMPLES: 5

COMMENTS

Results apply to sample(s) as submitted. Samples analysed on an as received basis. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222

Fax: 61-7-3243 7218

Email: sch4p4(6) Personal information@als.com.au

Signatory

sch4p4(6) Personal information

LABORATORIES

AUSTRALASIA

Brisbane
Melbourne
Sydney
Newcastle
Auckland

Hong Kong
Singapore
Kuala Lumpur
Bogor

AMERICAS

Vancouver
Santiago
Antofagasta
Lima

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of accreditation. This document shall not be reproduced except in full.



Batch: EB41792
 Sub Batch: 0
 Date of Issue: 04/12/2001
 Client: CARDNO MBK (QLD) PTY LTD
 Client Reference:

CERTIFICATE OF ANALYSIS



				SAMPLE IDENTIFICATION									
		Laboratory I.D.		1	2	3	4	5					
		Date Sampled		23/11/2001	23/11/2001	23/11/2001	23/11/2001	23/11/2001					
				T-3	T-4	T-5	T-6	T-7					
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR										
A-055	Moisture Content (dried @ 103°C)	%	0.1	8.5	9.0	7.4	7.3	5.9					
P-071-SS	TOTAL PETROLEUM HYDROCARBONS												
P-071-SS	C6 - C9 Fraction	mg/kg	2	<2	<2	<2	<2	<2					
P-071-SS	C10 - C14 Fraction	mg/kg	50	<50	<50	<50	<50	<50					
P-071-SS	C15 - C28 Fraction	mg/kg	100	<100	<100	<100	<100	<100					
P-071-SS	C29 - C36 Fraction	mg/kg	100	<100	<100	<100	<100	<100					
P-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES												
P-080S-SS	1,2-Dichloroethane-D4	%	1	93	91	93	90	93					
P-080S-SS	Toluene-D8	%	1	93	91	91	92	92					
P-080S-SS	4-Bromofluorobenzene	%	1	79	76	76	77	78					

Published on DES Disclosure Log
RTI Act 2009



Batch: EB41792
Sub Batch: 0
Date of Issue: 04/12/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

QUALITY CONTROL REPORT

				SAMPLE IDENTIFICATION									
				Laboratory I.D.	200	402	403						
				Date Sampled	23/11/2001	23/11/2001	23/11/2001						
				Method	Blank 1	TPHT3419	TPHT3419						
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Blank 1	SCS % Rec	DCS % Rec							
				CHECKS AND SPIKES									
EA-055	Moisture Content (dried @ 103°C)	%	0.1	---	---	---							
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS												
EP-071-SS	C6 - C9 Fraction	mg/kg	2	<2	97.0%	92.2%							
EP-071-SS	C10 - C14 Fraction	mg/kg	50	<50	91.1%	91.1%							
EP-071-SS	C15 - C28 Fraction	mg/kg	100	<100	92.3%	91.0%							
EP-071-SS	C29 - C36 Fraction	mg/kg	100	<100	---	---							
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES												
EP-080S-SS	1,2-Dichloroethane-D4	%	1	94	97	96							
EP-080S-SS	Toluene-D8	%	1	109	104	100							
EP-080S-SS	4-Bromofluorobenzene	%	1	86	102	100							

Published on DES Disclosure
RTI Act 2009



ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB41792

DATE BATCH RECEIVED : 23/11/01

CLIENT : Cardno MBK

DATE BATCH COMPLETED : 03/12/01

Where applicable, internal standards are added to sample extracts prior to instrumental analysis.
Absolute peak areas and retention times fall within the criteria specified in the individual methods.

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-071	TPH-Volatile	Soil	USEPA 5030 A	USEPA 8260A	VOCS3419	26/11/01	26/11/01
	-Semivolatile	Soil	Tumbler	USEPA 8015A	TPHT3419	26/11/01	27/11/01

Release

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCS3419
MATRIX : Soil

ANALYST: MAT TAYLOR

Volatile 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	%	%	Low	High	%
C6-C9	2.0	<LOR	20	19.4	18.4	95	5	86	117	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.

Release

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

Matrix : Soil

Analyst : Andrew McNamara

QC Lot : TPHT3419

Semivolatile 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	%
C10-C14	50	<LOR	300	273	273	91	0	72	120	20
C15-C28	100	<LOR	560	517	510	92	1	72	120	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.

Release

ALS Environmental

RECEIVED

18 DEC 2001



CERTIFICATE OF ANALYSIS

CONTACT: sch4p4(6) Personal information
CLIENT: CARDNO MBK (QLD) PTY LTD
ADDRESS:
P O BOX 388
TOOWONG QLD 4066
ORDER No.: 4571
PROJECT:

BATCH: EB42043
SUB BATCH: 0
LABORATORY: BRISBANE
DATE RECEIVED: 04/12/2001
DATE COMPLETED: 18/12/2001
SAMPLE TYPE: SOIL
No. of SAMPLES: 2

COMMENTS

Results apply to sample(s) as submitted. Samples analysed on an as received basis. Results reported on a dry weight basis.

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222

Fax: 61-7-3243 7218

Email: Personal@als.com.au

Signatory

sch4p4(6) Personal information

LABORATORIES

AUSTRALASIA

Brisbane
Melbourne
Sydney
Newcastle
Auckland

Hong Kong
Singapore
Kuala Lumpur
Bogor

AMERICAS

Vancouver
Santiago
Antofagasta
Lima

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of accreditation. This document shall not be reproduced except in full.



No. 825

Batch: EB42043
 Sub Batch: 0
 Date of Issue: 18/12/2001
 Client: CARDNO MBK (QLD) PTY LTD
 Client Reference:

CERTIFICATE OF ANALYSIS



				SAMPLE IDENTIFICATION									
				Laboratory I.D.	1	2							
				Date Sampled	04/12/2001	04/12/2001							
					R1	R2							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR										
EA-055	Moisture Content (dried @ 103°C)	%	0.1		6.2	7.0							
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS												
EP-071-SS	C6 - C9 Fraction	mg/kg	2		<2	<2							
EP-071-SS	C10 - C14 Fraction	mg/kg	50		<50	<50							
EP-071-SS	C15 - C28 Fraction	mg/kg	100		<100	276							
EP-071-SS	C29 - C36 Fraction	mg/kg	100		<100	<100							
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES												
EP-080S-SS	1,2-Dichloroethane-D4	%	1		88	92							
EP-080S-SS	Toluene-D8	%	1		91	88							
EP-080S-SS	4-Bromofluorobenzene	%	1		78	76							

Published on DES Disclosure Log
RTI Act 2009

Release

Batch: EB42043
Sub Batch: 0
Date of Issue: 18/12/2001
Client: CARDNO MBK (QLD) PTY LTD
Client Reference:

QUALITY CONTROL REPORT



				SAMPLE IDENTIFICATION										
				Laboratory I.D.	200	402	403							
				Date Sampled	04/12/2001	04/12/2001	04/12/2001							
METHOD	ANALYSIS DESCRIPTION	UNIT	LOR	Method	TPHT3427	TPHT3427								
				Blank 1	SCS % Rec	DCS % Rec								
				CHECKS AND SPIKES										
EA-055	Moisture Content (dried @ 103°C)	%	0.1	---	---	---								
EP-071-SS	TOTAL PETROLEUM HYDROCARBONS													
EP-071-SS	C6 - C9 Fraction	mg/kg	2	<2	92.8%	98.4%								
EP-071-SS	C10 - C14 Fraction	mg/kg	50	<50	102%	99.8%								
EP-071-SS	C15 - C28 Fraction	mg/kg	100	<100	96.9%	96.0%								
EP-071-SS	C29 - C36 Fraction	mg/kg	100	<100	---	---								
EP-080S-SS	VOLATILE TPH/BTEX COMPOUND SURROGATES													
EP-080S-SS	1,2-Dichloroethane-D4	%	1	100	98	100								
EP-080S-SS	Toluene-D8	%	1	95	93	97								
EP-080S-SS	4-Bromofluorobenzene	%	1	95	94	100								

Published on DES Disclosure
RTI Act 2009



ORGANICS QUALITY CONTROL REPORT

BATCH No. : EB42043

DATE BATCH RECEIVED : 04/12/01

CLIENT : Cardno MBK

DATE BATCH COMPLETED : 18/12/01

Where applicable, internal standards are added to sample extracts prior to instrumental analysis.
Absolute peak areas and retention times fall within the criteria specified in the individual methods.

Method Code	Test	Matrix	Method Reference		QC Lot Number	Date Samples Extracted	Date Samples Analysed
			Extraction	Analysis			
EP-071	TPH-Volatile	Soil	USEPA 5030 A	USEPA 8260A	VOCS3427	06/12/01	13/12/01
	-Semivolatile	Soil	Tumbler	USEPA 8015A	TPHT3427	07/12/01	10/12/01

Release

BATCH QUALITY CONTROL

ALS EP-071 : Total Petroleum Hydrocarbons by Fractions

QC Lot No. : VOCS3427
MATRIX : Soil

ANALYST: C. Emrich

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	20	18.6	19.7	96	6	86	117	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.

Release

BATCH QUALITY CONTROL**ALS EP-071 : Total Petroleum Hydrocarbons by Fractions**

Matrix : Soil
QC Lot : TPHT3427

Analyst : Andrew McNamara

Semivolatile Components

COMPOUND	Level Of Reporting (LOR)	Blank Conc.	Spike Conc.	Spike Results				Control Limits		
				SCS	DCS	Av.	RPD	Recovery		RPD
				Conc.	Conc.	Rec.		%		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	Low	High	%
C10-C14	50	<LOR	300	305	299	101	2	72	120	20
C15-C28	100	<LOR	560	543	538	96	1	72	120	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.

Release