

Queensland Curtis LNG Project: LNG Facility and Associated Infrastructure

Phase I and II Environmental Site Assessment

for

Queensland Gas Company Limited (QGC)

April 2009

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Environmental Site
Assessment
Queensland Curtis Island
LNG Project

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**Environmental Resources Management
Australia**

Level 1, 60 Leichhardt Street

Spring Hill, QLD 4000

Telephone +61 7 3839 8393

Facsimile +61 7 3839 8381

www.erm.com

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Assessment
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April 2009

Reference: 0086165/11_Phase I&II_R01.v0

For and on behalf of
Environmental Resources Management
Australia

Approved by: David Pope



Signed:

Position: Partner

Date: 20 April 2009

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EXECUTIVE SUMMARY

Environmental Resources Management were commissioned by Queensland Gas Company (QGC) to undertake a Phase I and II Environmental Site Assessment (ESA) of the LNG plant and associated infrastructure, the plant will be located on part of Lots 10 and 27 on Plan DS220 and the roads, bridges and pipelines will occupy part of Lots 7, 28 and 11 on Plan DS220 at Curtis Island and Lots 108 and 40 on Plan DS289, Lot 2 on RP613702 and the mudflats at the main land.

The Phase I and II ESA was undertaken to identify any significant land quality liabilities at the site and to provide information to assist in the development of an investment strategy for the BG LNG plant and associated infrastructure developments such as pipelines, roads and bridges.

The future LNG Plant is located in an undeveloped area at Curtis Island, surrounded to the north and east by undeveloped bushland and to the south and west by the Gladstone Harbour. The site and surrounding land is currently used for pastoral grazing of cattle. At the main land the site is located on the mud flats, undeveloped land and agricultural land use.

According to the results of the Phase I ESA the only potential activity of soil contamination identified at the site was a former cattle dip. A limited Phase II ESA was provided with the objective to provide data on the concentrations of a suite of potential contaminants which may be present from this former activity.

A total of twenty five soil samples, including duplicate QC samples, were collected and presented for analysis. Samples were analysed for metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), organic chlorinated pesticides (OCP) and organic phosphorated pesticides (OPP).

The analytical results revealed concentrations of metals in shallow soil samples above the analytical limit of reporting but below the relevant criteria. The reported concentrations of OCP and OPP in soil were below the laboratory limit of reporting.

Based on the results from the Phase I and II ESA, it is unlikely that significant contamination from organic and inorganic compounds exist on soil and groundwater, however a baseline sampling and analysis of soils and groundwater from the project area during the construction phase is recommended to confirm this assessment as potential soil and groundwater contamination may arise from storage and handling of hydrocarbons and chemicals on the site during the construction phase.

1 INTRODUCTION

1.1 GENERAL

Environmental Resources Management Australia Pty Ltd (ERM) is pleased to present this report to Queensland Gas Company (QGC) summarising the results of a Phase I and II Environmental Site Assessment (ESA) conducted at Curtis Island located from North China Bay to Graham Creek and at the main land located from Friend Point to approximately 3.5 km East. The LNG plant will be located on part of Lots 10 and 27 on Plan DS220 and the roads, bridges and pipelines will occupy part of Lots 7, 28 and 11 on Plan DS220 at Curtis Island and Lots 108 and 40 on Plan DS289, Lot 2 on RP613702 and the mudflats at the main land. The investigation was undertaken in accordance with BG Cost Time Resource (CTR) 02-6 Land Contamination and ERM proposal reference QCLNG 0086165/11 dated 16 September 2008. Written authorisation to proceed was received on 22 September 2008. The site location is presented in *Figure 1 (Annex A)*.

1.2 OBJECTIVE

ERM understands that the objective of the Phase I and II ESA is to identify any significant land quality liabilities at the site to provide information to assist in the development of an investment strategy for the BG LNG plant and associated infrastructure developments such as pipelines, roads and bridges.

1.3 LIMITATIONS AND EXCEPTIONS

This report is intended for the sole use of BG to assist in developing an investment strategy for the site.

The report is based upon the application of scientific principles and professional judgment to certain facts with resultant subjective interpretations. Professional judgments expressed herein are based on the currently available facts within the limits of the existing data, scope of work, budget and schedule. The report is based on the conditions and circumstances prevailing at the relevant property at the time of the site visit. The report cannot, and makes no attempt to, anticipate all changes to those conditions and circumstances, which occur after its date of issue.

ERM disclaims any responsibility to the client or any other person for the use of the report for any purpose other than that for which it was specifically prepared.

To the extent that more definitive conclusions are desired by the client than are warranted by the currently available facts, it is specifically ERM's intent

that the conclusions stated herein are intended as guidance and not necessarily as a firm course of action, except where explicitly stated as such.

Save as expressly agreed between ERM and the Client, ERM makes no representations or warranties, expressed or implied as to the nature or scope of the services, including as to merchantability fitness for a particular purpose. ERM makes no representation or warranty that the use of the recommendations, findings or conclusions of this report will result in compliance with applicable laws. In addition, the information, statements and opinions provided in this report are not to be construed as legal advice.

This assessment is based on site inspection conducted by ERM personnel, sampling and analyses described in the report, and information provided by BG (or "the client") or other people with knowledge of site conditions. All conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ERM assumes no responsibility or liability for errors in data obtained from regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

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BACKGROUND INFORMATION

Background information was obtained from field observations made during a site walkover between 8 and 9 October 2008 and from field activities undertaken from 4 to 6 November 2008. Available information from these activities and the following sources were reviewed during investigations:

- Queensland Department of Natural Resources and Water Registered Bore Search (*Annex B*);
- Historical Title Searches (*Annex C*);
- Queensland Department of Natural Resources and Water available historical aerial photographs (*Annex D*);
- Queensland Government - Environmental Management Register (EMR) and Contaminated Land Register (CLR) and Historical Title Search (*Annex E*); and
- Site Photographs (*Annex F*).

Site identification details are presented in *Table 2.1*.

Table 2.1 *Site Identification*

Site Location - LNG Plant	Curtis Island - Lots: 10 and 27 on Plan DS220
Site Location - Roads, Pipelines and Bridges	Curtis Island - Lots 7, 11 and 28 on Plan DS220 Main Land - Lots 40 and 108 on Plan DS289 and Lot 2 on Plan RP613702
Ste coordinates	UTM 56K 0316385 East 73769300 South
Site Area - Curtis Island LNG Plant Area	Approximately 200 hectares

2.1

SITE LOCATION

The site location plan is provided on *Figure 1, Annex A*.

The site is located on Curtis Island on Lots 7, 10 11, 27 and 28 on Plan DS220 and on the main land on Lots 108 and 40 on Plan DS289, Lot 2 on RP613702, the site also comprises the mudflats located at the main land at Friend Point.

2.1.1 *Adjacent Land Use*

The future LNG Plant is located in a undeveloped area at Curtis Island and is surrounded to the north and east by undeveloped bushland and to the south and west by the Gladstone Harbour. The site and surrounding land is currently used for pastoral grazing of cattle. The historical land use, from 1940's to 1970's included dairying.

On the main land the site is located at the mud flats, undeveloped land and agricultural land use.

2.1.2 *Visible Surface a and Underground Utilities*

There was no visible surface infrastructure on site during the site inspection that could result in potential impact, except from a cattle tick dip site.

There was no evidence of stressed vegetation on-site or in the immediate vicinity of the site that could impact the subsurface.

There were no underground structures present at the site, such as tanks and pipelines.

2.2 *ENVIRONMENTAL SETTING*

2.2.1 *Vegetation*

The vegetation distribution across the site ranged from open woodland, with individual eucalypts and iron bark trees up to approximately 30 metres in height, to closed medium density undergrowth of eucalypt seedlings ranging in height from 1-3m. The open woodlands occupied approximately 65% of the site, with the medium density seedlings occupying the remaining 35%. The seedling understory occupied areas approximately 50-200m wide, where present, with larger trees distributed relatively evenly throughout.

The dominant vegetation types consisted of *Eucalyptus citriodora* woodland (Lemon-scented Gum), *Eucalyptus tereticornis* woodland (Red Gum) (with *Eucalyptus crebra*) (Narrow-leaved Ironbark). *Xanthorrea* spp. occurred in limited distribution across the site, and occupied approximately 5% of the total area.

2.2.2 *Geology*

The regional geology is based on the Gladstone Special Sheet 9150, 1:100 000 (Donchak and Holmes 1991). The Palaeozoic rocks of the Gladstone area form part of the Tasman orogenic zone, a linear belt of deformed rocks on the

eastern margin of the Australian craton which forms the northern extension of the New England Fold Belt.

The main geological unit in the eastern portion of the region is the Devonian – Carboniferous Curtis Island Group, which consists of conformable sequence of three formations – the Doonside, Wandilla and Shoalwater Formations. The Curtis Island Group has undergone a regional metamorphic event of upper greenschist to lower amphibolite grade, with the grade decreasing from east to west.

Holocene tidal flats occur on the western margin of the site. The area is underlain by hard Pleistocene clays at depths between 0.5m and 2.5m, with the thickness of the soft, intertidal/mangrove silts and muds decreasing towards the landward side of the site.

Information obtained from the Queensland Natural Resources and Water indicated that there were 16 registered groundwater bores situated within a 10 km radius of the site.

2.2.3 *Hydrogeology*

Reference to the *Queensland Department of Mines 1:2 500 000, Groundwater Resources of Queensland Map (1987)* showed aquifer lithology within the vicinity of the site to be unconsolidated sediments (eg. sands and gravels) and metamorphic rocks. Groundwater recharge rates are <5L/sec and is suitable for most purposes but marginal for human consumption and low salt tolerant crops.

Information obtained from the Queensland Natural Resources and Water indicated that there were two registered groundwater bores situated at Curtis Island and 14 at the main land within a 10 km radius of Lot 27 on DS220, the main propose of the wells is for water supply. The information provided by the Queensland Department of Natural Resources, Mines and Water is presented in *Annex B*.

Details of bores, their location and relevant information are as follows:

Curtis Island

- Bore 91325 is approximately 2.3 km to the east of Lot 27 on Plan DS220 on Lot 9 on Plan DS220 and is used for water supply. Standing water level was measured at 10.6 metres below ground level (mbgl) with the water bearing zone between 22.22 mbgl and 27.27 mbgl; and
- Bore 91326 is approximately 150 m to the north of Lot 27 on Plan DS220 on Lot 11 on Plan DS220 and is used for water supply. Standing water level was measured at 10.6 mbgl with the water bearing zone between 15.0 mbgl and 30.3 mbgl.

Main land

- Bore 88338 is approximately 7 km to the south of Lot 27 on Plan DS220 and is used for water supply. Standing water level was measured at 11.20 mbgl;
- Bore 88464 is approximately 5 km to the southwest of Lot 27 on Plan DS220 and is used for water supply;
- Bore 97440 is approximately 5.1 km to the southeast of the site and is used for water supply. Water level was measured at 6.10 mbgl with pH 5.0 and electrical conductivity ranging from 1170 to 1200 uS/cm;
- Bore 111768 is approximately 7.3 km to the southeast of Lot 27 on Plan DS220 and is used for water supply. Standing water level was measured at 1.0 mbgl and electrical conductivity 9750 us/cm;
- Bore 111769 is approximately 7.3 km to the southwest of Lot 27 on Plan DS220 and is abandoned;
- Bore 111928 is approximately 5.1 km to the southeast of Lot 27 on Plan DS220 and is used for water supply;
- Bore 111929 is approximately 5 km to the southeast of Lot 27 on Plan DS220 and was used for water supply and is currently abandoned;
- Bore 111930 is approximately 5 km to the southeast of Lot 27 on Plan DS220 and was used for water supply and is currently abandoned;
- Bore 111931 is approximately 4.9 km to the southeast of Lot 27 on Plan DS220 and was used for water supply is currently abandoned;
- Bore 111932 is approximately 5.2 km to the southeast of Lot 27 on Plan DS220 and was used for water supply and is currently abandoned;
- Bore 122932 is approximately 7.2 km to the south of Lot 27 on Plan DS220 and is used for water supply;
- Bore 122949 is approximately 7.2 km to the southwest of Lot 27 on Plan DS220 and is used for water supply. Standing water level was measured at 6.7 mbgl;
- Bore 136230 is approximately 7 km to the south of Lot 27 on Plan DS220 and was used for water supply and is currently abandoned; and
- Bore 136231 is approximately 7 km to the south of Lot 27 on Plan DS220 and was used for water supply and is currently abandoned.

2.3 BACKGROUND INFORMATION

2.3.1 Certificates of Title

A search of the site land title deeds was undertaken on behalf of ERM by the Queensland Department of Natural Resources and Water on 21 November 2008.

A historical summary of the relevant Certificates of Title for Lots 7, 10, 11, 27 and 28 on Plan DS220 located at Curtis Island and Lots 40 and 108 on Plan DS289 and Lot 2 on Plan RP613702 are described on *Table 2.2*. *Annex C* shows the results of the historical title searches.

Table 2.2 Summary of Historical Certificates of Title

Year	Details of Title
Curtis Island – Lots 7, 10 11, 27 and 28 on Crown Plan DS220	
1983 – 1989	Lease to Jack Richie as a Grazing Homestead Perpetual lease – Vol 7653 Folio 63 (the lease includes also Lots 12 and 13 on Plan DS220).
1989 – 1993	Lease transferred to Giusepe Emanuele.
1993 – Current	Lease transferred to Ross William Graving, Colin Grant Graving and Mark Jon Graving as tenants in common as equal tenants (1/3 each) – Title reference 17653063.
Main Land – Lot 108 on Crown Plan DS289	
2006 - Current	The State of Queensland (Represented by the department of natural Resources and Water). Title Reference 47015438.
Main Land – Lot 40 on Crown Plan DS289	
1982 - 2008	Donald William Davey – Vol. C 496 Folio 212 (Includes also Lots 41 and 42 on Plan DS289).
2008 - Current	Queensland Energy Resources Limited – Title Reference 30496212.
Main Land – Lots 2 on Crown Plan RP613702	
1974 – 1976	Andrew Ivanoff – Vol. C 412 Folio 093.
1976 - 1980	Peter Kozloff and Riasa Kozloff – Vol C434 Folio 192.
1980 - 1988	Transfer to Nicholas Kozloff – Vol C467 Folio 118.
1988	Nicholas Kozloff, Dasha Kozloff and Alexi Gasteresky.
1988 - Current	Dasha Kozloff has become tenant in common – title reference 30580025.

No further information was available from the historical title deeds as to the nature of the activities that occurred on site prior to the initial dates shown in *Table 2.2*.

2.3.2 *Historical Aerial Photographs*

A review of aerial photographs was undertaken on behalf of ERM by the Queensland Department of Natural Resources and Water. The search included an examination of aerial photographs from the earliest available recorded photos to the most recent. A review of selected historical aerial photographs of the site and the surrounding area is summarised below in *Table 2.3* and photographs are presented in *Annex D*.

Table 2.3 *Summary of Historical Aerial Photographs*

<i>Year</i>	<i>Description</i>
1961	The Site at Curtis Island appears undeveloped as bushland. At the main land some agriculture land use is identified west from the mudflats where the road, pipeline and bridge to Curtis Island will be developed.
1970	No changes were observed from previous aerial photograph register.
1975	No changes were observed from previous aerial photograph register.
1980	The site at Curtis Island remains undeveloped as bushland. At the main land it is evident an expansion of agricultural land use and a wharf was constructed west from the site at Yarwun suburb.
1989	No significant changes were observed from previous aerial photograph register.
1996	Some tracks were observed to be opened on Curtis Island. Some future developments were observed at the wharf at Yarwun suburb.
2007	No significant changes were observed at Curtis Island. At the main land no changes were observed at the mudflats and the adjacent lots located where the future roads and pipelines will be constructed. The wharf at Yarwun suburb was redeveloped and it appears to be filled, industrial development appears west from the wharf.

2.3.3

Summary of Regulatory Research Findings

<i>Data Source</i>	<i>Description</i>
<i>Contaminated Site Search</i>	<p>A search was conducted of the Queensland EPA Environmental Management Register (EMR) and Contaminated Land Register (CLR) (<i>Annex E</i>) to identify whether the subject properties have been listed due to either historical or current activities.</p> <p>The search results indicated that the designated lots are not on either the EMR or CLR.</p>
<i>Potentially Sensitive Receptors</i>	<p>The vegetation distribution across the site ranged from open woodland, with individual eucalypts and iron bark trees up to approximately 30 metres in height, to closed medium density undergrowth of eucalypt saplings ranging in height from 1-3m. Another potential sensitive receptor is the marine environment that will be affected by sediment dragging and wharf construction and the Great Barrier Reef marine park. A site specific Ecological Assessment will be prepared as the site is within a sensitive receptors area.</p>
<i>Ramsar Wetlands Register</i>	<p>A search was conducted of the Wetlands International Ramsar Site Database to identify the Site's proximity to wetlands designated as internationally important.</p> <p>The result of the search indicated that there are no Ramsar sites at a 50 km radius from the site.</p>
<i>Acid Sulfate Soils</i>	<p>The potential exists for disturbance of ASS identified on Curtis Island and Friend Point during the construction phase of the LNG plant and the associated infrastructure. The most effective management strategy is to leave the ASS, in an undisturbed state. As the proposed locations of the infrastructure and LNG plant will result in some disturbance of ASS, there is a requirement for separate area for the treatment of acid sulfate soils which may be disturbed during the construction phase. A ASS assessment was provided for the site and is described in the Environmental Impact Statement developed for the construction of the LNG plant and associated infrastructure, an ASS Management Plan will be provided for the project execution to handle with potential impacts from ASS during the construction phase.</p>

2.3.4

Information of Former Cattle Tick Dip Site

It was reported by BG staff that a former cattle tick dip site was suspected to be present on site. During the site walkover the former cattle tick dip site was identified and located at Lot 27 on Plan DS 220 at the following UTM coordinates 56K 0316533 east 7370038 south. During the site walkover the remaining infrastructure from the former cattle tick dip site was recognized (*Photo 1 Annex F*).

As there is a potential for contamination of the subsurface by organic and inorganic compounds from the cattle tick dip activities a limited Phase II Environmental Site Assessment was undertaken to identify potential sources of contamination and any associated potential pollutant linkages from this activity.

3.1 OBJECTIVES

The objective of the limited Phase II Environmental Site Assessment (ESA) was to provide BG with data on the soil conditions of the cattle dip site identified during the Phase I ESA site walkover. The location of the Cattle Dip is shown in *Figure 2*.

The Phase II ESA was undertaken following the confirmation of the presence of the cattle dip site during Phase I site walkover. The current Phase II ESA was intended to provide coverage of this area and to provide data on the concentrations of a suite of potential contaminants which may be present from these former activities.

3.2 SAMPLING AND ANALYTICAL PLAN

The sampling and analytical plan for the Phase II ESA work involved a limited intrusive sampling program consisting of six soil bore holes to a maximum depth of 3.8 metres using Geoprobe push tube method. Groundwater was not identified during the drilling activities and therefore groundwater monitoring wells were not installed. The sampling locations are shown in *Figure 3* and *Annex G* presents the borehole logs.

A total of twenty five soil samples, including two duplicate Quality Control (QC) samples, were collected and presented for analysis. Three samples were collected from borehole CI01 at 0.5, 1.5 and 2.2 metres and four samples were collected from boreholes CI02 to CI06 (C02 - 0.25, 1.2, 1.8 and 3.0 metres; C03 - 0.5, 1.5, 2.5 and 3.8 metres; CI04 0.3, 1.0, 2.0 and 2.7 metres; CI05 0.2, 0.75, 2.0 and 3.2 metres and CI06 0.4, 1.2, 2.7 and 3.4 metres).

Two soil duplicate samples (CI03-2.5 DUP and CI05-2.0 DUP) were collected from sampling location CI03 at 2.5 metres and CI05 at 2.0 metres for QC purposes.

Following ERM's Standard Operating Procedures, samples were stored in labelled glass jars and placed in a cooler with ice to maintain the samples at 4°C for delivery to Amdel Labmark Laboratories in Brisbane, a NATA accredited laboratory for analysis.

Samples were analysed for the following:

- Organic Chlorinated Pesticides:

- a-BHC;
- a-chlordane;
- a-endosulfan;
- aldrin;
- b-BHC;
- b-endosulfan;
- d-BHC;
- DD;
- DDE;
- DDT;
- dieldrin;
- endosulfan sulfate;
- endrin;
- endrin aldehyde;
- g-BHC;
- g-chlordane;
- heptachlor;
- heptachlor epoxide;
- hexachlorobenzene;
- methoxychlor; and
- oxychlordane.

- Organic Phosphorated Pesticides:

- chlorpyrifos;
- chlorpyrifos methyl;

- diazinon;
- ethion;
- fenitrothion;
- malathion;
- methyl parathion;
- parathion; and
- ronnel.
- Heavy Metals:
 - arsenic;
 - cadmium;
 - chromium;
 - copper;
 - lead;
 - mercury;
 - nickel; and
 - zinc.

3.3 *DATA EVALUATION CRITERIA*

The soil analytical results were compared against relevant environmental criteria to evaluate if identified concentrations might warrant further characterisation and thus represent a material financial issue for QGC. The relevant environmental criteria against which the analytical data were compared are:

- Queensland Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (1998); and
- NEPM Health investigation level F (HIL-F) – commercial/industrial.

As part of the quality control process, two duplicate samples were collected from CI03 and CI05 (CI03-2.5 DUP and CI05-2.0 DUP) and analysed for each of the analytes.

The relative percentage difference is a measure of the difference between duplicate analyses and provides a measure of the reproducibility of analytical method. The RPD is determined by the following calculation:

$$RPD = ((x - y)/(x + y)).100$$

Analytical results are generally considered acceptable if the replicate analyses are within a $\pm 10\%$ margin. However, for analyses near the analytical detection limits, the results may still be considered as acceptable even if the margin may be greater than 10%. The RPD results for the analytes detected above the analytical detection limits are shown in *Tables 3.1 and 3.2*. The analytical results for which the RPD could be determined were limited to heavy metals, as the remaining analytes were all below the laboratory limit of reporting.

Table 3.1 *Relative Percent Difference for Duplicate Sample CI03-2.5 and CI03-2.5 DUP*

	CI03-2.5 (mg/kg)	CI03-2.5 DUP (mg/kg)	%RPD
Arsenic	7.7	4	31
Chromium	43	32	14
Copper	43	29	19
Lead	12	7.3	24
Nickel	15	8.8	26
Zinc	24	19	11

Table 3.2 *Relative Percent Difference for Duplicate Sample CI05-2.0 and CI05-2.0 DUP*

	CI05-2.0 (mg/kg)	CI05-2.0 DUP (mg/kg)	%RPD
Arsenic	12	8.8	15
Chromium	39	45	7
Copper	48	46	2
Lead	18	21	8
Nickel	11	12	4
Zinc	26	28	4

The RPD greater than 10% were considered acceptable as the results were near to the analytical detection limits, which resulted in a relatively greater RPD for the analytes identified above laboratory reporting limits.

RESULTS

The analytical results from the soil sampling are detailed below and are presented in *Table 4.1* to *Table 4.3*. The data upon which the Phase II ESA was based and the laboratory results from Amdel Labmark Laboratories are presented in *Annex H*.

4.1

METALS

The analytical results for metals in soil, shown in *Table 4.1*, revealed that the concentrations of heavy metals were below the relevant environmental criteria in all samples.

The maximum concentrations for arsenic (26 mg/kg), chromium (78 mg/kg) nickel (38 mg/kg) and zinc (64 mg/kg) were reported in sample CI02-1.8. The maximum concentrations for copper (73 mg/kg), lead (23 mg/kg), and mercury (0.14 mg/kg) were reported in samples CI06 1.2, CI05-0.2 and CI05-3.2 respectively. Cadmium was below the laboratory limit of reporting in all samples.

4.2

ORGANIC CHLORINATED (OC) AND ORGANIC PHOSPHORATED (OP) PESTICIDES

The analytical results for OC and OP pesticides for soil presented in *Tables 4.2 and 4.3* respectively revealed that the concentrations for all compounds were below the analytical detection limits in soil samples.

Table 4.1 Soil Analytical Results for Heavy Metals – BG LNG Curtis Island

Sample ID	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
QLD EPA 1998 (mg/kg)	500	100	500¹	5000	1500	3000	25000	75
EQL (mg/kg)	3	1	2	1	5	2	2	0.05
CI01-0.5	18	<1	63	56	19	28	53	<0.05
CI01-1.5	13	<1	53	46	14	22	43	<0.05
CI01-2.2	14	<1	42	52	17	26	42	<0.05
CI02-0.25	17	<1	62	48	16	26	43	<0.05
CI02-1.2	19	<1	68	50	16	27	45	<0.05
CI02-1.8	26	<1	78	68	22	38	64	<0.05
CI02-3.0	13	<1	36	48	14	19	41	<0.05
CI03-0.5	11	<1	32	54	11	19	50	<0.05
CI03-1.5	8.1	<1	28	43	11	13	29	<0.05
CI03-2.5	7.7	<1	43	43	12	15	24	<0.05
CI03-3.8	10.0	<1	41	35	7.5	11	39	<0.05
CI04-0.3	9.1	<1	37	49	13	13	35	<0.05
CI04-1.0	10.0	<1	30	61	9.7	19	39	<0.05
CI04-2.0	4.7	<1	18	35	10	16	24	0.1
CI04-2.7	11	<1	42	28	12	13	37	<0.05
CI05-0.2	11	<1	41	43	14	22	35	<0.05
CI05-0.75	5.1	<1	25	46	6.7	15	29	<0.05
CI05-2.0	12	<1	39	48	18	11	26	0.14
CI05-3.2	16	<1	40	60	23	19	58	<0.05
CI06-0.4	3.6	<1	19	27	7.2	6.3	23	<0.05
CI06-1.2	10	<1	38	73	16	20	28	<0.05
CI06-2.7	13	<1	36	41	9.4	9.4	34	<0.05
CI06-3.4	<3	<1	34	22	<5	6.8	27	<0.05
CI03-2.5 dup	4.0	<1	32	29	7.3	8.8	19	<0.05
CI05-2.0 dup	8.8	<1	45	46	21	12	28	<0.05

¹ Criteria for Chromium Hexavalent

Table 4.2 Soil Analytical Results for Organic Chlorinated Pesticides (OCP) – BG LNG Curtis Island.

Sample ID	a-BHC	a-Chlordane	a-Endosulfan	Aldrin	b-BHC	b-Endosulfan	d-BHC	DDD	DDE	DDT	Dieldrin	Endosulfan sulphate	Endrin	Endrin Aldehyde	g-BHC	g-Chlordane	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlorthane
QLD EPA 1998 (mg/kg)	-	-	-	50	-	-	-	1000	1000	1000	50	-	-	-	-	250	50	-	-	-	-
EQL (mg/kg)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CI01-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI01-1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI01-2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-0.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-3.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Sample ID	a-BHC	a-Chlordane	a-Endosulfan	Aldrin	b-BHC	b-Endosulfan	d-BHC	DDD	DDE	DDT	Dieldrin	Endosulfan sulphate	Endrin	Endrin Aldehyde	g-BHC	g-Chlordane	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	
CI04-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-0.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-2.5 dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-2.0 dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 4.3 Soil Analytical Results for Organic Phosphorated Pesticides (OPP) – BG LNG Curtis Island.

Sample ID	Chlorpyrifos	Chlorpyrifos Methyl	Diazinon	Ethion	Fenitrothion	Fenthion	Malathion	Methyl parathion	Parathion	Ronnel
QLD EPA 1994 (mg/kg)	-	-	-	-	-	-	-	-	-	-
EQL (mg/kg)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CI01-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI01-1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI01-2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-0.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI02-3.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI04-2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-0.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI06-3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI03-2.5 dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CI05-2.0 dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

5.1 CONCLUSION

ERM were directed by BG to undertake a Phase I and II ESA at the Curtis Island LNG project located in Gladstone, Queensland to identify and quantify the extent of potential contamination at the site.

The Phase 1 investigation was undertaken to verify any significant land quality liabilities at the site and to provide information to assist in the development of an investment strategy for BG LNG Curtis Island Plant.

A former cattle tick dip site was identified on Curtis Island at Lot 27 on Plan DS 220. During the site walkover the remaining infrastructure from the former cattle dip site was identified.

The Phase 2 investigation involved the execution of six soil bore holes at the identified cattle dip site. A total of twenty five soil samples including two field duplicates were collected and analysed for, metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), OC and OP pesticides.

The results from the Phase II ESA revealed that OC and OP pesticides were below the laboratory limit of reporting. The reported concentrations of metals in soils were below the adopted criteria specified in the *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland 1997*.

Based on the results from the Phase 1 and 2 ESA, it is considered unlikely that there is potential of environmental contaminants at the site due to former activities.

Based on information on the current and historical land use in the project area, it is unlikely that significant contamination from organic and inorganic compounds exist on soil and groundwater.

5.2 RECOMMENDATIONS

A baseline sampling and analysis of soils and groundwater from the project area during the construction phase is recommended to confirm this assessment. Potential soil and groundwater contamination may arise from storage and handling of hydrocarbons and chemicals on the site during the construction phase.

REFERENCES

Donchak PJT and Holmes KH. (1991). *Gladstone Sheet 9150, 1:100,000 Geological Map Commentary*. Queensland Department of Natural Resources

Queensland Government Department of Natural Resources and Water. *Historical Title Searches*. Received 21 November 2008;

Queensland Department of Natural Resources and Water. *Registered Bore Search*. Received 18 December 2008;

Queensland Government EPA. *Environmental Management Register (EMR) and Contaminated Land Register (CLR) searches*. Received 14 November 2008;

Queensland Department of Natural Resources and Water. *Available Historical Aerial Photographs*;

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

Annex A

Figures

- Legend**
- Pipe (LNG)
 - Road/Bridge Corridor
 - LNG Site Boundary
 - Channel
 - Existing
 - Proposed

Source Note:
Aerial Photo - Department of Infrastructure and Planning for QLD
Project - Queensland Curtis LNG Project
Cadastral Certainty - August 2008 - Department of Natural Resources
Water - Queensland Water
Site - Cadastral Interest

Figure 1
Preliminary Layout showing Road & Pipeline Alignment and Site Boundary on Cadastral Layout

Client:	BURCOO
Project:	Queensland Curtis LNG Project
Drawing No.:	006195B_DS_03003_01
Date:	20/10/2008
Drawn by:	AB
Reviewed by:	AB



Disclaimer:
This map and figures contained in this figure may be based on third party data, which may not be to scale and are intended as guides only. ERM does not warrant the accuracy of any such maps and figures.



Legend

Area of Investigation



LNG Site (November)



Area: 340.6Ha

Figure 2

Cattle Dip Site Location.



Client: BG/QGC

Project: Queensland Curtis Island LNG Project

Drawing No: 0086165_02_Cattle Dip

Date: 23/12/2008 Drawing size: A4

Drawn by: AB Reviewed by: AB

Scale: Refer to Scale Bar



Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393



Legend  Soil Bore Sample Locations



B

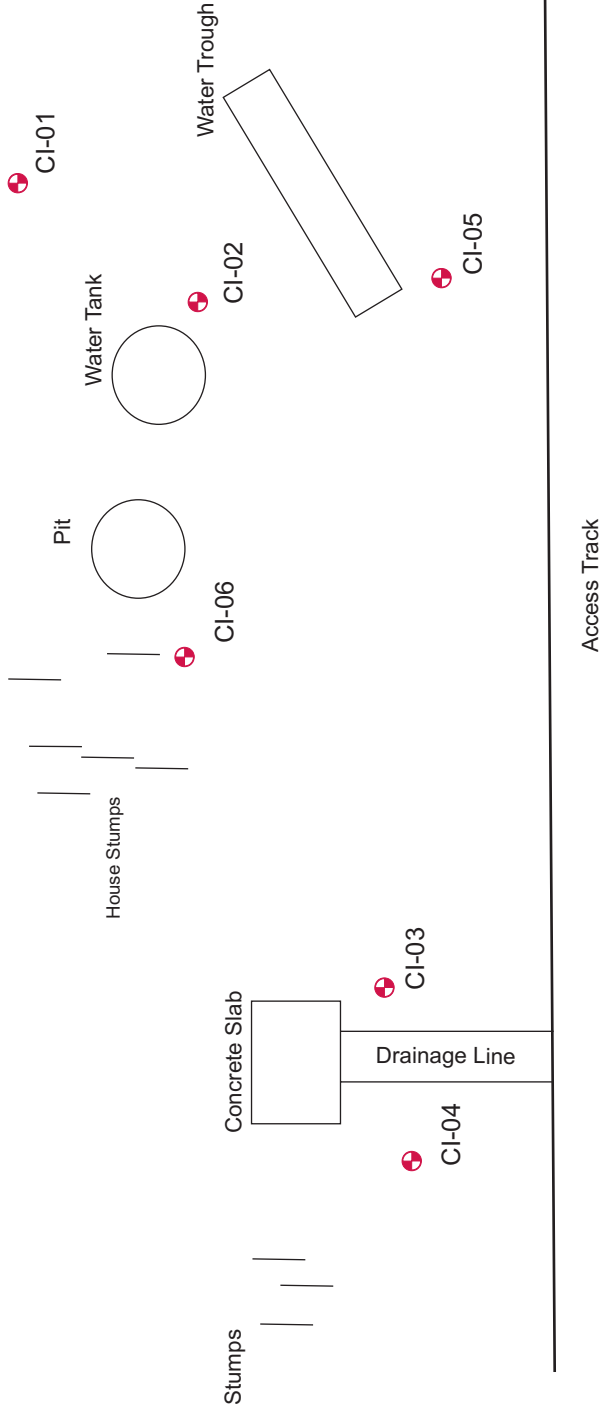


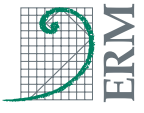
Figure 3

Cattle Dip Site Features and Soil Sample Locations.

Client:	BG/QGC		
Project:	Queensland Curtis Island LNG Project		
Drawing No:	0086165_01_Cattle Dip		
Date:	23/12/2008	Drawing size:	A4
Drawn by:	AB	Reviewed by:	AB
Scale:	Refer to Scale Bar		



Environmental Resources Management Australia Pty Ltd
 Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
 Telephone +61 7 3839 8393



Annex B

Results of Borehole Search

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 88338

REGISTRATION DETAILS

OFFICE Rockhampton **BASIN** 1320 **LATITUDE** 23-49-51 **MAP-SCALE** 104
DATE LOG RECD **SUB-AREA** **LONGITUDE** 151-09-31 **MAP-SERIES** M
D/O FILE NO. 515/030/0282 **SHIRE** 3360-GLADSTONE REGI **EASTING** 312438 **MAP-NO** 9150
R/O FILE NO. 30-0282 **LOT** 1 **NORTHING** 7363279 **MAP NAME** GLADSTONE
H/O FILE NO. **PLAN** RP612126 **ZONE** 56 **PROG SECTION**
ORIGINAL DESCRIPTION P108 **ACCURACY** SKET **PRES EQUIPMENT**
GIS LAT -23.830876784 **PARISH NAME** 897-CALLIOPE **ORIGINAL BORE NO** OFFICE LICENCE ONLY
GIS LNG 151.158551632 **COUNTY** CLINTON **BORE LINE** -
CHECKED Y **PROPERTY NAME** **POLYGON**
FIELD LOCATION **RN OF BORE REPLACE**
DATE DRILLED **DATA OWNER**
DRILLERS NAME **CONFIDENTIAL**
DRILL COMPANY **METHOD OF CONST.** CABLE TOOL

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	01/10/1969	1	Steel Casing (unspecified)	4.760	WT	152	0.00	23.80
A	01/10/1969	2	Perforated or Slotted Casing		AP	152	21.90	23.80

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	12.80	SOIL & GRITTY CLAY
2	12.80	23.77	MED TO HARD GRANITE(????) SOFT BANDS
902			SWL 23/10/69 - 11.2 M
903			BAILER TEST - 1.0 L/S
910			WRC COND 10/69 - 1880 MICROS/CM

STRATIGRAPHY DETAILS

DNR	FORMATION
1	DOONSIDE FORMATION

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 88338

SOURCE	RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
DNR	2	0.00		DOONSIDE FORMATION

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL (m)	FLOW	QUALITY	YIELD (l/s)	CONDIT	FORMATION NAME
1	17.40		GNTE	23/10/1969	-11.20	N			Y	WZ DOONSIDE FORMATION
2	22.00	23.80	GNTE			N	COND 1880	1.00	Y	WZ DOONSIDE FORMATION

AQUIFER DETAILS

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2

**** NO RECORDS FOUND ****

BORE CONDITION

**** NO RECORDS FOUND ****

ELEVATION DETAILS

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1

PIPE	DATE	RD	ANALYST	QAN	DEPT H (m)	RMK	SRC	COND (uS/cm)	pH	Si (mg/L)	TOTAL IONS (mg/L)	TOTAL SOLIDS (mg/L)	HARD	ALK	FIG. OF MERIT	SAR	RAH
A	23/10/1969	1	GCL	44034	22.00	PU	GB	1880	7.6		1256.55	1042.56	486	350	1.0	4.5	
A	09/09/1970	1	GCL	46660	22.00	PU	GB	1710	7.1		1221.20	982.30	439	385	0.9	4.6	

WATER ANALYSIS PART 2

PIPE	DATE	RD	Na	K	Ca	Mg	Mn	HCO3	Fe	CO3	Cl	F	NO3	SO4	Zn	Al	B	Cu
A	23/10/1969	1	227.0		84.0	67.0		421.0		3.0	430.0	0.55		24.0				
A	09/09/1970	1	222.0		82.0	57.0		470.0			355.0	0.20		35.0				

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 88338

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
**** NO RECORDS FOUND ****

FIELD MEASUREMENTS
**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDQ	FIELDQ
Y 24/01/1992	Y 24/01/1992	Y 24/01/1992	Y 04/08/1999	Y 24/01/1992	Y 24/01/1992	Y 24/01/1992	Y 24/01/1992

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPRDAD	GNOTES
Y 24/01/1992		Y 24/01/1992		Y 24/01/1992			

GENERAL NOTES
**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

REG NUMBER 88464

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-47-17	MAP-SCALE	104
DATE LOG RECD		SUB-AREA		LONGITUDE	151-08-41	MAP-SERIES	M
D/O FILE NO.	515/030/2352	SHIRE	3360-GLADSTONE REGI	EASTING	310951	MAP-NO	9150
R/O FILE NO.	30-2352	LOT	1	NORTHING	7367986	MAP NAME	GLADSTONE
H/O FILE NO.		PLAN	RP608978	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION	P30	ACCURACY SKET		PRES EQUIPMENT	
				GPS ACC			
GIS LAT	-23.788209053	PARISH NAME	4441-TARGINIE	ORIGINAL BORE NO	OFFICE LICENSE ONLY		
GIS LNG	151.144563894	COUNTY	DEAS THOMPSON	BORE LINE	-		
CHECKED	Y	PROPERTY NAME		POLYGON			
		FIELD LOCATION		RN OF BORE REPLACE			
FACILITY TYPE	SF	DATE DRILLED	02/09/1969	DATA OWNER			
STATUS	EX	DRILLERS NAME	SHANAHAN G	CONFIDENTIAL			
ROLES	WS	DRILL COMPANY					
		METHOD OF CONST.	CABLE TOOL				

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	3.05	RED SOIL & RED CLAY WITH BARS OF HARD IRONSTONE
2			
3	3.05	6.10	RED CLAY
4	6.10	13.72	GREY PIPE CLAY SLIGHTLY GRITTY
5	13.72	15.24	BROWN CLAY
6	15.24	21.34	BLUE CLAY
7	21.34	22.86	BROWN CLAY SOAK
8	22.86	25.91	BLUE CLAY
9	25.91	32.00	BLUE CLAY
10	32.00	32.92	BROWN CLAY
11	32.92	53.34	BLUE CLAY WATER AT 61M

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REG NUMBER 88464

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION	YIELD CTR (l/s)	CONDIT	FORMATION NAME
12	53.34	62.48	BLUE CLAY WITH ROCK BAR 58.2M - 58.5M	0.65	Y	UC RUNDLE FORMATION
13	62.48	67.06	BROWN CLAY WITH GRAINS OF QUATZ			

STRATIGRAPHY DETAILS

SOURCE	RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
DNR	1	0.00		RUNDLE FORMATION

AQUIFER DETAILS

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL (m)	FLOW (m)	QUALITY (mg/L)	TDS (mg/L)	YIELD CTR (l/s)	CONDIT	FORMATION NAME
1	62.50	65.60	CLAY	02/09/1969	-99.99	N	17,000	17,000	0.65	Y	UC RUNDLE FORMATION

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2

**** NO RECORDS FOUND ****

BORE CONDITION

**** NO RECORDS FOUND ****

ELEVATION DETAILS

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2

**** NO RECORDS FOUND ****

WATER LEVEL DETAILS

**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 88464

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIF	PUMTES	ELVDET	WLVDQ	FIELDQ
Y 31/07/2000	Y 25/06/1992	Y 31/07/2000	Y 31/07/2000	Y 25/06/1992	Y 25/06/1992	Y 25/06/1992	Y 25/06/1992

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPRDAD	GNOTES
Y 25/06/1992		Y 25/06/1992		Y 25/06/1992			

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
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DATE 18/12/2008

REG NUMBER 91325

SOURCE	RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION	SWL (m)	FLOW (l/s)	QUALITY	COND	CTR	CONDIT	FORMATION NAME	YIELD (l/s)
DNR	1	0.00		WANDILLA FORMATION	-10.60	N	COND 12000		Y	FR	WANDILLA FORMATION	3.00

AQUIFER DETAILS

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

WATER LEVEL DETAILS
 **** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
 **** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 91325

**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
Y 26/07/2000		Y 26/07/2000					

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FSPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

DATE 18/12/2008

REG NUMBER 91326

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1310	LATITUDE	23-45-06	MAP-SCALE	104
DATE LOG RECD		SUB-AREA		LONGITUDE	151-11-38	MAP-SERIES	M
D/O FILE NO.	520/001(66)	SHIRE	3360-GLADSTONE REGI	EASTING	315916	MAP-NO	9150
R/O FILE NO.	81-01038	LOT	11	NORTHING	7372089	MAP NAME	GLADSTONE
H/O FILE NO.		PLAN	DS220	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION	POR 11	ACCURACY	SKET	PRES EQUIPMENT	
				GPS ACC			
GIS LAT	-23.75174937	PARISH NAME	1405-CURTIS	ORIGINAL BORE NO	OFFICE LICENSE ONLY		
GIS LNG	151.193783893	COUNTY	DEAS THOMPSON	BORE LINE	-		
CHECKED	Y	PROPERTY NAME		POLYGON			
		FIELD LOCATION		RN OF BORE REPLACE			
FACILITY TYPE	SF	DATE DRILLED	10/09/1993	DATA OWNER			
STATUS	EX	DRILLERS NAME	J AUSTON	CONFIDENTIAL			
ROLES	WS	DRILL COMPANY	STOLZENBURG DRILLING				
		METHOD OF CONST.	ROTARY				

CASING DETAILS

PIP	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	13/09/1993	1	Polyvinyl Chloride	5.900	WT	141	0.00	30.00
A	13/09/1993	2	Perforated or Slotted Casing		AP	141	15.00	27.30
A	13/09/1993	3	Gravel Pack	6.000	GR		15.00	27.30

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	1.00	SOIL
2	1.00	6.00	BROWN CLAY AND BOULDERS
3	6.00	21.21	WHITE MUDSTONE AND BROKEN ROCK
4	21.21	30.30	BLUE BASALT WATER

STRATIGRAPHY DETAILS

DNR 1 0.00 WANDILLA FORMATION

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REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	<u>AQUIFER DETAILS</u>		SWL FLOW (m)	QUALITY	YIELD CTR (l/s)	CONDIT	FORMATION NAME
1	15.00	30.30	MDST	13/09/1993	-10.60	N	SALTY	0.52	Y	FR	WANDILLA FORMATION

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

WATER LEVEL DETAILS
 **** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
 **** NO RECORDS FOUND ****

FIELD MEASUREMENTS
 **** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
 **** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 91326

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
Y 26/07/2000	Y 10/06/1994	Y 26/07/2000	Y 26/07/2000	Y 10/06/1994	Y 10/06/1994	Y 10/06/1994	Y 10/06/1994

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPRDAD	GNOTES
Y 10/06/1994		Y 10/06/1994		Y 10/06/1994			

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
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DATE 18/12/2008

REG NUMBER 97440

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-47-58	MAP-SCALE	104
DATE LOG RECD		SUB-AREA		LONGITUDE	151-08-56	MAP-SERIES	M
D/O FILE NO.	520/001(32)	SHIRE	3360-GLADSTONE REGI	EASTING	311406	MAP-NO	9150
R/O FILE NO.	520/001(32)	LOT	101	NORTHING	7366735	MAP NAME	GLADSTONE
H/O FILE NO.		PLAN	RP620971	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	SKET	PRES EQUIPMENT	
				GPS ACC			

GIS LAT -23.799557968
 GIS LNG 151.148869575
 CHECKED Y

PARISH NAME 4441-TARGINIE
 COUNTY DEAS THOMPSON
 PROPERTY NAME
 FIELD LOCATION

FACILITY TYPE SF
 STATUS EX
 ROLES WS

DATE DRILLED 20/08/1997
 DRILLERS NAME GARDNER Z
 DRILL COMPANY DEPCO
 METHOD OF CONST. ROTARY

ORIGINAL BORE NO
 BORE LINE -
 POLYGON
 RN OF BORE REPLACE
 DATA OWNER
 CONFIDENTIAL

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	20/08/1997	1	Polyvinyl Chloride	5.900	WT	140	0.00	23.00
A	20/08/1997	2	Perforated or Slotted Casing					
A	20/08/1997	3	Gravel Pack	5.000	GR		17.00	23.00

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	15.00	CLAY & WEATHERED SHALE
2	15.00	23.00	FRESH FRACTURED SHALE *

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

GROUNDWATER DATABASE
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DATE 18/12/2008

REG NUMBER 97440

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL (m)	FLOW	QUALITY	YIELD (l/s)	CTR	CONDIT	FORMATION NAME
1	17.00	23.00	SCHT	20/08/1997	-10.00	N	900 US/CM	3.00	Y	FR	WANDILLA FORMATION

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

WATER LEVEL DETAILS		WATER ANALYSIS PART 1		WATER ANALYSIS PART 2	
PIPE	DATE	MEASURE (m)	N/R	RMK	LOG
A	20/08/1997	-10.00	R		
A	23/09/2002	-6.10	R		

WATER LEVEL DETAILS		WATER ANALYSIS PART 1		WATER ANALYSIS PART 2	
PIPE	DATE	MEASURE (m)	N/R	RMK	LOG
A	20/08/1997	-10.00	R		
A	23/09/2002	-6.10	R		

WIRE LINE LOG DETAILS
 **** NO RECORDS FOUND ****

FIELD MEASUREMENTS			
PIPE	DATE	DEPTH (m)	COND (uS/cm)
A	20/08/1997	23.00	900

FIELD MEASUREMENTS			
PH	TEMP (C)	NO3 (mg/L)	DO (mg/L)

FIELD MEASUREMENTS			
Eh (mV)	METH	SOURCE	
	PU	GB	

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PIPE	DATE	DEPTH (m)	COND (uS/cm)	pH	TEMP (C)	NO3 (mg/L)	DO (mg/L)	Eh (mV)	METH	SOURCE
A	23/09/2002	23.00	1200	5.0					PU	GB
A	08/10/2002	23.00	1170						PU	GB

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
Y 06/03/1998		Y 19/10/2000	Y 19/10/2000				

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FSPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 111768

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-51-07	MAP-SCALE	503
DATE LOG RECD		SUB-AREA		LONGITUDE	151-13-02	MAP-SERIES	M
D/O FILE NO.	520/001/66	SHIRE	3360-GLADSTONE REGI	EASTING	318432	MAP-NO	9150-3
R/O FILE NO.		LOT	1	NORTHING	7361019	MAP NAME	
H/O FILE NO.		PLAN	CP818823	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	SKET	PRES EQUIPMENT	
				GPS ACC			

GIS LAT	-23.851969122	PARISH NAME	202-AUCKLAND	ORIGINAL BORE NO	GLADSTONE POWER STATION
GIS LNG	151.217094869	COUNTY	CLINTON	BORE LINE	-
CHECKED	Y	PROPERTY NAME			
		FIELD LOCATION			

FACILITY TYPE	SF	DATE DRILLED	07/06/2002	DATA OWNER	DNR
STATUS	EX	DRILLERS NAME	GOLDSWORTHY R	CONFIDENTIAL	N
ROLES	WS	DRILL COMPANY	PIONEER DRILLING		
		METHOD OF CONST.	ROTARY		

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	07/06/2002	1	Polyvinyl Chloride	5.900	WT	140	0.00	17.50
A	07/06/2002	2	Perforated or Slotted Casing				11.50	17.50
A	07/06/2002	3	Gravel Pack	5.000	GR	165	0.00	17.50

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	0.50	BLACK SOIL
2	0.50	4.00	MUDSTONE ORANGE *
3	4.00	5.00	MUDSTONE WHITE
4	5.00	10.00	MUDSTONE ORANGE
5	10.00	12.00	ORANGE BLACK ROCK
6	12.00	13.00	SAND *

GROUNDWATER DATABASE
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REG NUMBER 111768

RECORD NUMBER 7
 STRATA TOP (m) 13.00
 STRATA BOT (m) 17.50
 STRATA DESCRIPTION BASALT

STRATIGRAPHY DETAILS
 **** NO RECORDS FOUND ****

AQUIFER DETAILS

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL (m)	FLOW	QUALITY	YIELD (l/s)	CTR	CONDIT	FORMATION NAME
1	2.00	13.00	MDST	07/06/2002	-1.00	N	9750 US/CM	0.95	Y	FR	WANDILLA FORMATION

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

PIPE	DATE	MEASURE (m)	N/R	RMK	LOG	PIPE	DATE	MEASURE (m)	N/R	RMK	LOG
A	07/06/2002	-1.00			R						

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BORE CARD REPORT - PUBLISHABLE**

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REG NUMBER 111768

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

PIPE	DATE	DEPTH (m)	COND (uS/cm)	pH	TEMP (C)	NO3 (mg/L)	DO (mg/L)	Eh (mV)	METH	SOURCE
A	07/06/2002	17.50	9750						AI	GB

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
Y 18/02/2003	Y 18/02/2003	Y 18/02/2003	Y 18/02/2003		ELVDET	WLVDET	FIELDQ

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
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REG NUMBER 111769

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-50-53	MAP-SCALE	503
DATE LOG RECD		SUB-AREA		LONGITUDE	151-13-16	MAP-SERIES	M
D/O FILE NO.	520/001/66	SHIRE	3360-GLADSTONE REGI	EASTING	318822	MAP-NO	9150-3
R/O FILE NO.		LOT	1	NORTHING	7361455	MAP NAME	
H/O FILE NO.		PLAN	CP818823	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	SKET	PRES EQUIPMENT	
GIS LAT	-23.848083189	PARISH NAME	202-AUCKLAND			ORIGINAL BORE NO	GLADSTONE POWER STATION
GIS LNG	151.220980711	COUNTY	CLINTON			BORE LINE	-
CHECKED	Y	PROPERTY NAME				POLYGON	
		FIELD LOCATION				RN OF BORE REPLACE	
FACILITY TYPE	SF	DATE DRILLED	06/06/2002			DATA OWNER	DNR
STATUS	AD	DRILLERS NAME	GOLDSWORTHY R			CONFIDENTIAL	N
ROLES		DRILL COMPANY	PIONEER DRILLING				
		METHOD OF CONST.	ROTARY				

GPS ACC

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	0.50	TOP FILL
2	0.50	3.00	SANDY CLAY
3	3.00	4.00	MUDSTONE ORANGE
4	4.00	5.00	MUDSTONE & CLAY
5	5.00	11.00	MUDSTONE
6	11.00	25.00	DECOMPOSED MUDSTONE
7	25.00	40.00	MUDSTONE DRY HOLE ABANDONED

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

GROUNDWATER DATABASE
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REG NUMBER 111769

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 1
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
**** NO RECORDS FOUND ****

BORE CONDITION
**** NO RECORDS FOUND ****

ELEVATION DETAILS
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
**** NO RECORDS FOUND ****

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
**** NO RECORDS FOUND ****

FIELD MEASUREMENTS
**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET CASING STRLOG AQUIF PUMTES ELVDET WLVDET FIELDQ

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DATE 18/12/2008

REG NUMBER 111769

Y 18/02/2003 Y 18/02/2003

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES

VALIDATION LOG - PART 2

GENERAL NOTES
**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111928

REGISTRATION DETAILS

OFFICE Rockhampton
MAP-SCALE 253
MAP-SERIES M
MAP-NO 9150-31
MAP NAME
PROG SECTION
PRES EQUIPMENT
ORIGINAL BORE NO DRY TEST HOLE- RUNDLE FMN
BORE LINE -
POLYGON
RN OF BORE REPLACE
DATA OWNER
CONFIDENTIAL

BASIN 1320
LATITUDE 23-47-49
LONGITUDE 151-08-53
SUB-AREA
EASTING 311319
NORTHING 7367021
SHIRE 3360-GLADSTONE REGI
ZONE 56
LOT 1
PLAN MPH35335
ACCURACY
GPS ACC

DATE LOG RECD
D/O FILE NO. 520/001/032
R/O FILE NO.
H/O FILE NO.

ORIGINAL DESCRIPTION
PARISH NAME 4441-TARGINIE
COUNTY DEAS THOMPSON
PROPERTY NAME
FIELD LOCATION

DATE DRILLED 15/11/2002
DRILLERS NAME KEN FORD
DRILL COMPANY FORD DRILLING
METHOD OF CONST. ROTARY

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	2.00	RED CLAY AND ALLUVIUM
2	2.00	6.00	RED LATERITE
3	6.00	7.00	LATERITE
4	7.00	9.00	GREY CLAY
5	9.00	12.00	YELLOW CLAY
6	12.00	21.00	LIGHT BROWN SHALE
7	21.00	42.00	GREY SHALE
8	42.00	72.00	GREY GREEN SHALE

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111928

AQUIFER DETAILS

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2

**** NO RECORDS FOUND ****

BORE CONDITION

**** NO RECORDS FOUND ****

ELEVATION DETAILS

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2

**** NO RECORDS FOUND ****

WATER LEVEL DETAILS

**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

**** NO RECORDS FOUND ****

REGDET CASING STRLOG AQUIF PUMTES ELVDET WLVDET FIELDQ

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111928

16/02/2004

WATANL SAMPLE STRTIG VALIDATION LOG - PART 2 BRCOND FPREAD GNOTES
WIRLOG MULCND

GENERAL NOTES
**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISABLE

REG NUMBER 111929

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-47-41	MAP-SCALE	253
DATE LOG RECD		SUB-AREA		LONGITUDE	151-09-08	MAP-SERIES	M
D/O FILE NO.	520/001/032	SHIRE	3360-GLADSTONE REGI	EASTING	311727	MAP-NO	9150-31
R/O FILE NO.		LOT	101	NORTHING	7367271	MAP NAME	
H/O FILE NO.		PLAN	SP108924	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY		PRES EQUIPMENT	
				GPS ACC			
GIS LAT	-23.794757154	PARISH NAME	4441-TARGINIE			ORIGINAL BORE NO	DRY TEST HOLE- RUNDLE FMN
GIS LNG	151.152085554	COUNTY	DEAS THOMPSON			BORE LINE	-
CHECKED	Y	PROPERTY NAME				POLYGON	
		FIELD LOCATION				RN OF BORE REPLACE	
FACILITY TYPE	SF	DATE DRILLED	13/11/2002			DATA OWNER	
STATUS	AD	DRILLERS NAME	KEN FORD			CONFIDENTIAL	
ROLES	WS	DRILL COMPANY	FORD DRILLING				
		METHOD OF CONST.	ROTARY				

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	2.00	RED CLAY(FILL)
2	2.00	4.00	BROWN CLAY
3	4.00	6.00	GREY CLAY
4	6.00	12.00	BROWN CLAY
5	12.00	29.00	DARK GREY CLAY/SHALE
6	29.00	72.00	GREY/GREEN SHALE

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 111929

PUMP TEST DETAILS PART 1
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
**** NO RECORDS FOUND ****

BORE CONDITION
**** NO RECORDS FOUND ****

ELEVATION DETAILS
**** NO RECORDS FOUND ****

WATER ANALYSIS PART1
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
**** NO RECORDS FOUND ****

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
**** NO RECORDS FOUND ****

FIELD MEASUREMENTS
**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
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VALIDATION LOG - PART 2

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111929

WATANL SAMPLE STRTIG WIRLOG MULCND BRCOND FPREAD GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 111930

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-47-43	MAP-SCALE	253
DATE LOG RECD		SUB-AREA		LONGITUDE	151-09-19	MAP-SERIES	M
D/O FILE NO.	520/001/032	SHIRE	3360-GLADSTONE REGI	EASTING	312052	MAP-NO	9150-31
R/O FILE NO.		LOT	101	NORTHING	7367221	MAP NAME	
H/O FILE NO.		PLAN	SP108924	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY		PRES EQUIPMENT	
				GPS ACC			
GIS LAT	-23.795244225	PARISH NAME	4441-TARGINIE			ORIGINAL BORE NO	DRY BORE- RUNDLE FMN
GIS LNG	151.155261903	COUNTY	DEAS THOMPSON			BORE LINE	-
CHECKED	Y	PROPERTY NAME				POLYGON	
		FIELD LOCATION				RN OF BORE REPLACE	
FACILITY TYPE	SF	DATE DRILLED	14/11/2002			DATA OWNER	
STATUS	AD	DRILLERS NAME	KEN FORD			CONFIDENTIAL	
ROLES	WS	DRILL COMPANY	FORD DRILLING				
		METHOD OF CONST.	ROTARY				

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	2.00	RED CLAY AND ALLUVIUM
2	2.00	6.00	RED AND WHITE CLAY (MUDSTONE)
3	6.00	24.00	YELLOW/ GREY SHALE

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 111930

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISABLE

REG NUMBER 111931

REGISTRATION DETAILS

OFFICE Rockhampton
 DATE LOG RECD 1320
 D/O FILE NO. 520/001/032
 R/O FILE NO. 3360-GLADSTONE REGI
 H/O FILE NO. 3360-GLADSTONE REGI

LATITUDE 23-47-44
 LONGITUDE 151-09-10
 EASTING 311806
 NORTHING 7367169
 ZONE 56
 ACCURACY

MAP-SCALE 253
 MAP-SERIES M
 MAP-NO 9150-032
 MAP NAME
 PROG SECTION
 PRES EQUIPMENT

GIS LAT -23.795688918
 GIS LNG 151.152847837
 CHECKED Y

GPS ACC

ORIGINAL BORE NO DRY TEST HOLE- RUNDLE FMN
 BORE LINE -

PARISH NAME 4441-TARGINIE
 COUNTY DEAS THOMPSON
 PROPERTY NAME
 FIELD LOCATION

POLYGON

FACILITY TYPE SF
 STATUS AD
 ROLES WS

DATE DRILLED 14/11/2002
 DRILLERS NAME KEN FORD
 DRILL COMPANY FORD DRILLING
 METHOD OF CONST. ROTARY

RN OF BORE REPLACE
 DATA OWNER
 CONFIDENTIAL

CASING DETAILS

**** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	3.00	REG CLAY & ALLUVIUM
2	3.00	6.00	RED AND WHITE CLAY
3	6.00	8.00	GREY CLAY
4	8.00	18.00	GREEN CLAY
5	18.00	48.00	GREY SHALE

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 111931

PUMP TEST DETAILS PART 1
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
**** NO RECORDS FOUND ****

BORE CONDITION
**** NO RECORDS FOUND ****

ELEVATION DETAILS
**** NO RECORDS FOUND ****

WATER ANALYSIS PART1
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
**** NO RECORDS FOUND ****

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
**** NO RECORDS FOUND ****

FIELD MEASUREMENTS
**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
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VALIDATION LOG - PART 2

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111931

WATANL SAMPLE STRTIG WIRLOG MULCND BRCOND FPREAD GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

REG NUMBER 111932

REGISTRATION DETAILS

OFFICE Rockhampton **BASIN** 1320 **LATITUDE** 23-48-07 **MAP-SCALE** 253
DATE LOG RECD **SUB-AREA** **LONGITUDE** 151-08-59 **MAP-SERIES** M
D/O FILE NO. 520/001/032 **SHIRE** 3360-GLADSTONE REGI **EASTING** 311485 **MAP-NO** 9150-31
R/O FILE NO. **LOT** 1 **NORTHING** 7366466 **MAP NAME**
H/O FILE NO. **PLAN** RP614039 **ZONE** 56 **PROG SECTION**
ORIGINAL DESCRIPTION **ACCURACY** **PRES EQUIPMENT**

GIS LAT -23.801994959 **PARISH NAME** 4441-TARGINIE **GPS ACC**
GIS LNG 151.149605757 **COUNTY** DEAS THOMPSON **ORIGINAL BORE NO** DRY TEST HOLE-RUNDLE FMN
CHECKED Y **PROPERTY NAME** **BORE LINE** -

FACILITY TYPE SF **DATE DRILLED** 15/11/2002 **POLYGON**
STATUS AD **DRILLERS NAME** KEN FORD **RN OF BORE REPLACE**
ROLES WS **DRILL COMPANY** FORD DRILLING **DATA OWNER**
METHOD OF CONST. ROTARY **CONFIDENTIAL**

CASING DETAILS
 **** NO RECORDS FOUND ****

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	1.00	RED TOP SOIL
2	1.00	6.00	RED CLAY ALLUVIUM
3	6.00	7.00	RED LATERITE
4	7.00	12.00	GREY CLAY
5	12.00	18.00	BROWN/GREEN OILS SHALE BANDS
6	18.00	21.00	GREEN SHALE
7	21.00	36.00	BROWN GREEN SHALE BANDS

STRATIGRAPHY DETAILS
 **** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111932

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	<u>AQUIFER DETAILS</u>			YIELD (l/s)	CTR	CONDIT	FORMATION NAME
1	24.00		SHLE	15/11/2002	SWL (m)	FLOW	QUALITY	1.70	N	FR	RUNDLE FORMATION
					-9.00	N	2700MG/L				

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

WATER LEVEL DETAILS
 **** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
 **** NO RECORDS FOUND ****

FIELD MEASUREMENTS
 **** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
 **** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 111932

<u>VALIDATION LOG - PART 1</u>									
REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ		
16/02/2004									

<u>VALIDATION LOG - PART 2</u>									
WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES		

GENERAL NOTES
**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122932

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-50-58	MAP-SCALE	
DATE LOG RECD	24/MAY/06	SUB-AREA		LONGITUDE	151-10-40	MAP-SERIES	
D/O FILE NO.	520/0017	SHIRE	3360-GLADSTONE REGI	EASTING	314424	MAP-NO	
R/O FILE NO.		LOT	4	NORTHING	7361248	MAP NAME	
H/O FILE NO.		PLAN	SP165453	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	GPS	PRES EQUIPMENT	
				GPS ACC	20		
GIS LAT	-23.8494444	PARISH NAME	897-CALLIOPE	ORIGINAL BORE NO			
GIS LNG	151.1777778	COUNTY	CLINTON	BORE LINE	-		
CHECKED	Y	PROPERTY NAME					
		FIELD LOCATION					

POLYGON
RN OF BORE REPLACE
DATA OWNER
CONFIDENTIAL N

FACILITY TYPE SF
STATUS EX
ROLES WS

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	02/05/2006	1	Polyvinyl Chloride	3.100	WT	60	0.00	15.00
A	02/05/2006	2	Perforated or Slotted Casing	0.400	AP	60	12.00	15.00
A	02/05/2006	3	Gravel Pack	3.000	GR		11.00	15.00
A	02/05/2006	4	Bentonite Seal				10.00	11.00
A	02/05/2006	5	Grout				0.00	8.00

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	3.50	CLAY GRAVEL GREY HARD
2	3.50	15.00	CLAY SANDY SOFT

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122932

<u>AQUIFER DETAILS</u>									
REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL FLOW (m)	QUALITY	YIELD CTR (l/s)	CONDIT	FORMATION NAME
1	13.00	15.00	SANC	22/05/2006	-99.99	N	0.00	Y	UC CALLIOPE RIVER ALLUVIUM

PUMP TEST DETAILS PART 1
 **** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
 **** NO RECORDS FOUND ****

BORE CONDITION
 **** NO RECORDS FOUND ****

ELEVATION DETAILS
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
 **** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
 **** NO RECORDS FOUND ****

WATER LEVEL DETAILS
 **** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
 **** NO RECORDS FOUND ****

FIELD MEASUREMENTS
 **** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS
 **** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122932

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
		Y 03/01/2008	Y	03/01/2008			

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES

GENERAL NOTES
**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122933

REGISTRATION DETAILS

OFFICE Rockhampton **BASIN** 1320 **LATITUDE** 23-50-52 **MAP-SCALE**

DATE LOG RECD 24/MAY/06 **SUB-AREA** **LONGITUDE** 151-10-29 **MAP-SERIES**

D/O FILE NO. 520/0017 **SHIRE** 3360-GLADSTONE REGI **EASTING** 314110 **MAP-NO**

R/O FILE NO. **LOT** 21 **NORTHING** 7361429 **MAP NAME**

H/O FILE NO. **PLAN** SP159091 **ZONE** 56 **PROG SECTION**

ORIGINAL DESCRIPTION **ACCURACY** GPS **PRES EQUIPMENT**

GPS ACC 20

GIS LAT -23.8477778 **PARISH NAME** 897-CALLIOPE **ORIGINAL BORE NO**

GIS LNG 151.1747222 **COUNTY** CLINTON **BORE LINE** -

CHECKED Y **PROPERTY NAME** **POLYGON**

FIELD LOCATION **RN OF BORE REPLACE**

DATE DRILLED 02/05/2006 **DATA OWNER**

FACILITY TYPE SF **DRILLERS NAME** GRAY, MARK **CONFIDENTIAL** N

STATUS EX **DRILL COMPANY** GEOPROBE

ROLES WS **METHOD OF CONST.** ROTARY AIR

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	02/05/2006	1	Polyvinyl Chloride	3.100	WT	60	0.00	14.00
A	02/05/2006	2	Perforated or Slotted Casing	0.400	AP	60	11.00	14.00
A	02/05/2006	3	Gravel Pack	3.000	GR		10.00	14.00
A	02/05/2006	4	Bentonite Seal				9.50	10.00
A	02/05/2006	5	Grout				0.00	9.50

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	4.00	CLAY, GREY, HARD
2	4.00	8.30	CLAY, SANDY, GREY/BROWN, DAMP, SOFT
3	8.30	14.00	SANDY CLAY, GREY, MED-DENSE, WET

STRATIGRAPHY DETAILS

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122933

**** NO RECORDS FOUND ****

AQUIFER DETAILS

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL FLOW (m)	QUALITY	YIELD CTR (l/s)	CONDIT	FORMATION NAME
1	8.30	14.00	SANC	22/05/2006	-99.99	N	0.00	Y	UC CALLIOPE RIVER ALLUVIUM

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2

**** NO RECORDS FOUND ****

BORE CONDITION

**** NO RECORDS FOUND ****

ELEVATION DETAILS

**** NO RECORDS FOUND ****

WATER ANALYSIS PART1

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2

**** NO RECORDS FOUND ****

WATER LEVEL DETAILS

**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 122933

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
		Y 03/01/2008					

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122949

REGISTRATION DETAILS

OFFICE Rockhampton BASIN 1320 LATITUDE 23-49-18 MAP-SCALE

DATE LOG RECD 27/JUN/06 SUB-AREA LONGITUDE 151-08-33 MAP-SERIES

D/O FILE NO. 520/0017 SHIRE 3360-GLADSTONE REGI EASTING 310780 MAP-NO

R/O FILE NO. LOT 30 NORTHING 7364287 MAP NAME

H/O FILE NO. PLAN RP801113 ZONE 56 PROG SECTION

ORIGINAL DESCRIPTION ACCURACY GPS PRES EQUIPMENT

GIS LAT -23.8215858 PARISH NAME 897-CALLIOPE ORIGINAL BORE NO

GIS LNG 151.1424054 COUNTY CLINTON BORE LINE -

CHECKED Y PROPERTY NAME POLYGON

FIELD LOCATION RN OF BORE REPLACE

FACILITY TYPE SF DATE DRILLED 08/06/2006 DATA OWNER

STATUS EX DRILLERS NAME MACGILLIVRAY, ARCHIBALD CONFIDENTIAL N

ROLES WS DRILL COMPANY ASMAC DRILLING

METHOD OF CONST. ROTARY AIR

CASING DETAILS

PIP E	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	08/06/2006	1	Polyvinyl Chloride	5.900	WT	140	0.00	24.00
A	08/06/2006	2	Perforated or Slotted Casing	2.000	AP	140	12.00	24.00
A	08/06/2006	3	Gravel Pack	5.000	GR		0.00	8.00
A	08/06/2006	4	Cuttings or other fill between casing and hc				6.00	8.00
A	08/06/2006	5	Grout				0.00	6.00

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	4.50	BROWN BROKEN ROCK
2	4.50	8.00	FINE BROWN ROCK AND CLAY
3	8.00	15.00	BROWN CHERT ROCK
4	15.00	24.00	BROWN OPEN WATER BEARING ROCK, HARD

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 122949

STRATIGRAPHY DETAILS

**** NO RECORDS FOUND ****

AQUIFER DETAILS

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL FLOW (m)	QUALITY	COND	CTR	CONDIT	FORMATION NAME	YIELD (l/s)
1	18.00	24.00	CHER	08/06/2006	-6.70	N	COND 1250	Y	WZ	DOONSIDE FORMATION	2.50

PUMP TEST DETAILS PART 1

**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2

**** NO RECORDS FOUND ****

BORE CONDITION

**** NO RECORDS FOUND ****

ELEVATION DETAILS

**** NO RECORDS FOUND ****

WATER ANALYSIS PART1

**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2

**** NO RECORDS FOUND ****

WATER LEVEL DETAILS

**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 122949

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
		Y 03/01/2008					

Y 03/01/2008

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

REG NUMBER 136230

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-50-13	MAP-SCALE	
DATE LOG RECD		SUB-AREA		LONGITUDE	151-10-04	MAP-SERIES	
D/O FILE NO.	520/0017	SHIRE	3360-GLADSTONE REGI	EASTING	313387	MAP-NO	
R/O FILE NO.		LOT	138	NORTHING	7362610	MAP NAME	
H/O FILE NO.		PLAN	CTN2123	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	GPS	PRES EQUIPMENT	
				GPS ACC	20	ORIGINAL BORE NO	
GIS LAT	-23.8370276	PARISH NAME	897-CALLIOPE			BORE LINE	-
GIS LNG	151.1677785	COUNTY	CLINTON				
CHECKED	Y	PROPERTY NAME					
		FIELD LOCATION					

POLYGON
 RN OF BORE REPLACE
 DATA OWNER
 CONFIDENTIAL N

FACILITY TYPE SF
 STATUS AD
 ROLES WS

DATE DRILLED 22/11/2002
 DRILLERS NAME CROWSON, MARK ANTHONY
 DRILL COMPANY GLADSTONE DRILLING
 METHOD OF CONST. ROTARY AIR

CASING DETAILS

PIP	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	22/11/2002	1	Cuttings or other fill between casing and hc				0.00	59.00

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	1.00	RED CLAY, 12MM GRAIN
2	1.00	2.00	ORANGE CLAY, 3MM GRAIN
3	2.00	3.00	BROWN BROKEN ROCK, 20MM GRAIN
4	3.00	11.00	LIGHT BROWN CLAY/STONE, 3-4MM GRAIN
5	11.00	12.00	BROKEN BROWN ROCK
6	12.00	18.00	PINK/RED DAMP CLAY
7	18.00	25.00	CREAMY GREEN MUDSTONE
8	25.00	34.00	PINKY BROWN MUDSTONE

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISABLE

DATE 18/12/2008

REG NUMBER 136230

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
9	34.00	35.00	CREAMY GREEN MUDSTONE
10	35.00	36.00	LIGHT BROWN MUDSTONE
11	36.00	37.00	RED MUDSTONE
12	37.00	48.00	BROWN/ORANGE MUDSTONE
13	48.00	59.00	LIGHT GREEN SHALE

STRATIGRAPHY DETAILS
**** NO RECORDS FOUND ****

AQUIFER DETAILS
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 1
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
**** NO RECORDS FOUND ****

BORE CONDITION
**** NO RECORDS FOUND ****

ELEVATION DETAILS
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
**** NO RECORDS FOUND ****

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 136230

WIRE LINE LOG DETAILS

**** NO RECORDS FOUND ****

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIF	PUMTES	ELVDET	WLVDET	FIELDQ
		Y 03/01/2008					
			Y 03/01/2008				

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FSPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

REG NUMBER 136231

REGISTRATION DETAILS

OFFICE	Rockhampton	BASIN	1320	LATITUDE	23-50-17	MAP-SCALE	
DATE LOG RECD		SUB-AREA		LONGITUDE	151-09-49	MAP-SERIES	
D/O FILE NO.	520/0017	SHIRE	3360-GLADSTONE REGI	EASTING	312971	MAP-NO	
R/O FILE NO.		LOT	138	NORTHING	7362476	MAP NAME	
H/O FILE NO.		PLAN	CTN2123	ZONE	56	PROG SECTION	
		ORIGINAL DESCRIPTION		ACCURACY	SKET	PRES EQUIPMENT	
				GPS	ACC		

GIS LAT	-23.8381913	PARISH NAME	897-CALLIOPE	ORIGINAL BORE NO	
GIS LNG	151.1636748	COUNTY	CLINTON	BORE LINE	-
CHECKED	Y	PROPERTY NAME		POLYGON	
		FIELD LOCATION		RN OF BORE REPLACE	

FACILITY TYPE	SF	DATE DRILLED	22/11/2002	DATA OWNER	CONFIDENTIAL N
STATUS	AD	DRILLERS NAME	CROWSON, MARK ANTHONY		
ROLES	WS	DRILL COMPANY	GLADSTONE DRILLING		
		METHOD OF CONST.	ROTARY AIR		

CASING DETAILS

PIP	DATE	RECORD NUMBER	MATERIAL DESCRIPTION	MAT SIZE (mm)	SIZE DESC	OUTSIDE DIAM (mm)	TOP (m)	BOTTOM (m)
A	22/11/2002	1	Cuttings or other fill between casing and hc				0.00	59.00

STRATA LOG DETAILS

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
1	0.00	1.00	ORANGE TOPSOIL, 20MM GRAIN
2	1.00	5.00	RED STONY CLAY 20MM GRAIN
3	5.00	7.00	WHITE CLAY
4	7.00	19.00	RED WET CLAY
5	19.00	36.00	BLUE/WHITE MUDSTONE
6	36.00	43.00	RED MUDSTONE
7	43.00	48.00	BROKEN BLUE ROCK, 15MM
8	48.00	53.00	BLUE SHALE, 20MM

GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE

DATE 18/12/2008

REG NUMBER 136231

RECORD NUMBER	STRATA TOP (m)	STRATA BOT (m)	STRATA DESCRIPTION
9	53.00	59.00	BROKEN BROWN ROCK

STRATIGRAPHY DETAILS
**** NO RECORDS FOUND ****

AQUIFER DETAILS

REC	TOP BED(M)	BOTTOM BED(M)	BED LITHOLOGY	DATE	SWL FLOW (m)	QUALITY	YIELD (l/s)	CTR	CONDIT	FORMATION NAME
1	49.00		SHLE	22/11/2002	-99.99	N	0.03	N	CV	DOONSIDE FORMATION

PUMP TEST DETAILS PART 1
**** NO RECORDS FOUND ****

PUMP TEST DETAILS PART 2
**** NO RECORDS FOUND ****

BORE CONDITION
**** NO RECORDS FOUND ****

ELEVATION DETAILS
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 1
**** NO RECORDS FOUND ****

WATER ANALYSIS PART 2
**** NO RECORDS FOUND ****

WATER LEVEL DETAILS
**** NO RECORDS FOUND ****

WIRE LINE LOG DETAILS
**** NO RECORDS FOUND ****

**GROUNDWATER DATABASE
BORE CARD REPORT - PUBLISHABLE**

REG NUMBER 136231

FIELD MEASUREMENTS

**** NO RECORDS FOUND ****

SPECIAL WATER ANALYSIS

**** NO RECORDS FOUND ****

VALIDATION LOG - PART 1

REGDET	CASING	STRLOG	AQUIFR	PUMTES	ELVDET	WLVDET	FIELDQ
		Y 03/01/2008	Y	03/01/2008			

VALIDATION LOG - PART 2

WATANL	SAMPLE	STRTIG	WIRLOG	MULCND	BRCOND	FSPREAD	GNOTES

GENERAL NOTES

**** NO RECORDS FOUND ****

GROUNDWATER DATABASE

BORE CARD REPORT - PUBLISHABLE

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**** End of Report ****

27/DS220

Bores within 10Km

Legend

DCDB

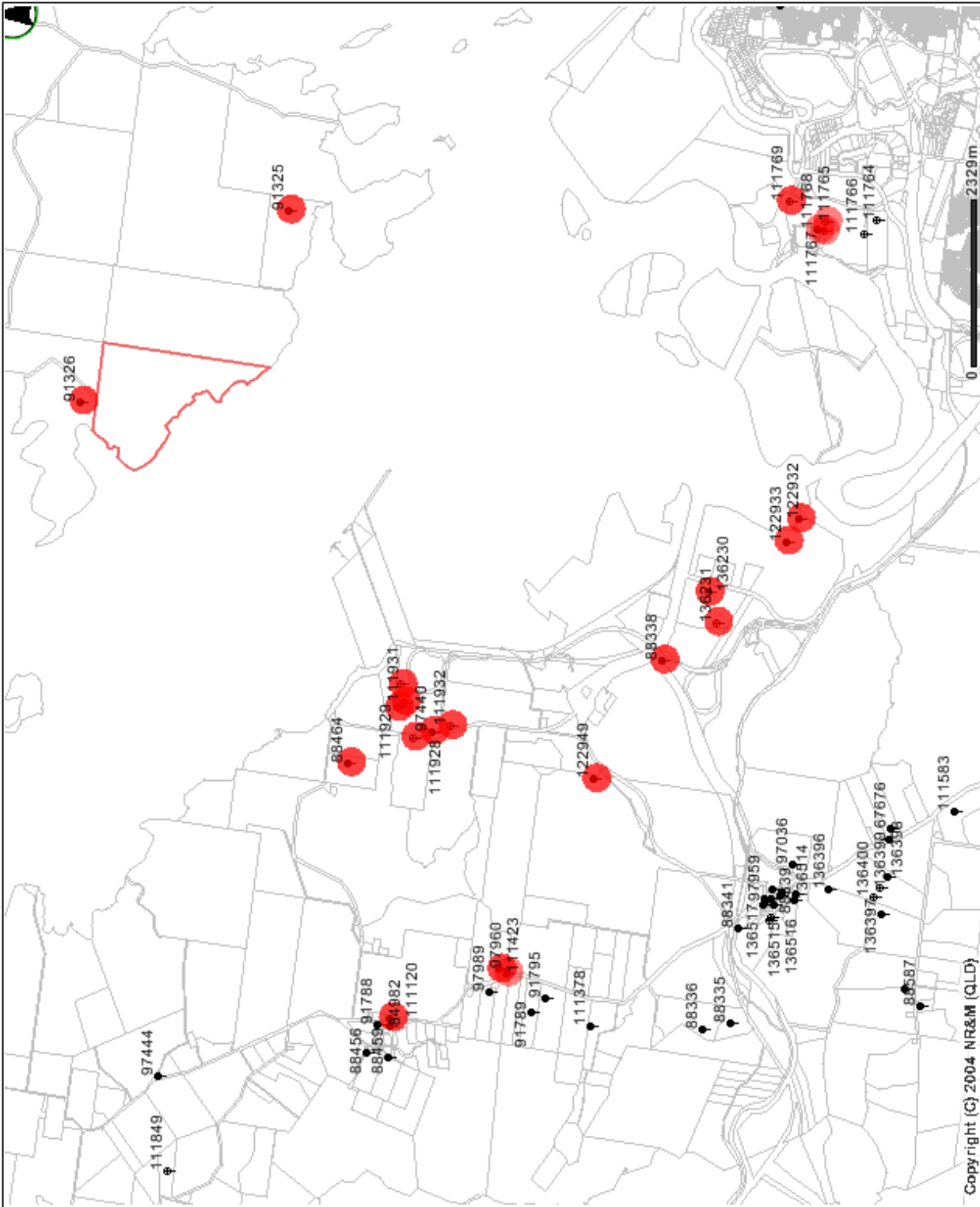
Lot



The State of Queensland
Department of Natural Resources & Mines 2004

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GDA94 Reference System



Annex C

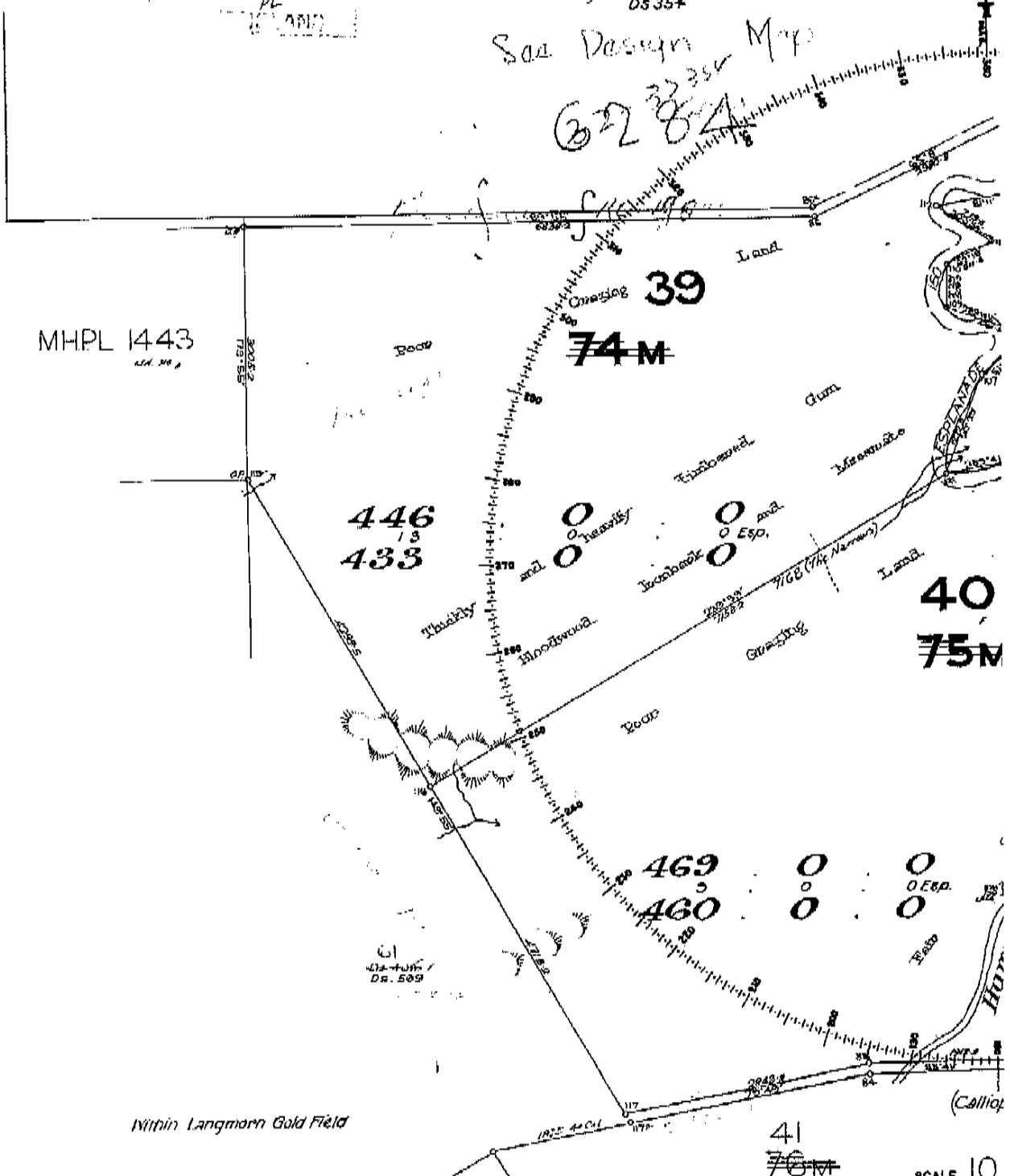
Results of Historical Title Search

For Openings/Modifications see book

See Plan of 27 Sept 28 Page 208
Ls 32, 33 Particulars
Open for Selection 7/15/28

SURVEY OFFICE
11650
1920

39
05354
Sas Design
32 33 34 Mps
622 84



MHPL 1443

446
433

39
74M

40
75M

469
460

41
76M

Within Langmore Gold Field

I hereby certify, on honour, that this survey has been carried out with the theodolite, and that the boundaries shown on the diagram accord with those marked and defined on the ground.

Edmund Robinson
Surveyor

SCALE 10
SURVEYED UNDER
DATE
BY L

D5289

AD 4142 PL 3-2102 August 1882 25/10/34 L 312664
 25 P.S. 2363 May 1881 25/10/34 25/10/34 2 1363

AD 4142 PL 3-2102 Heaman O. G. Winick
 AD 41342 PL 3-2102 Bernard M. Bayley F82:2105 (451234)

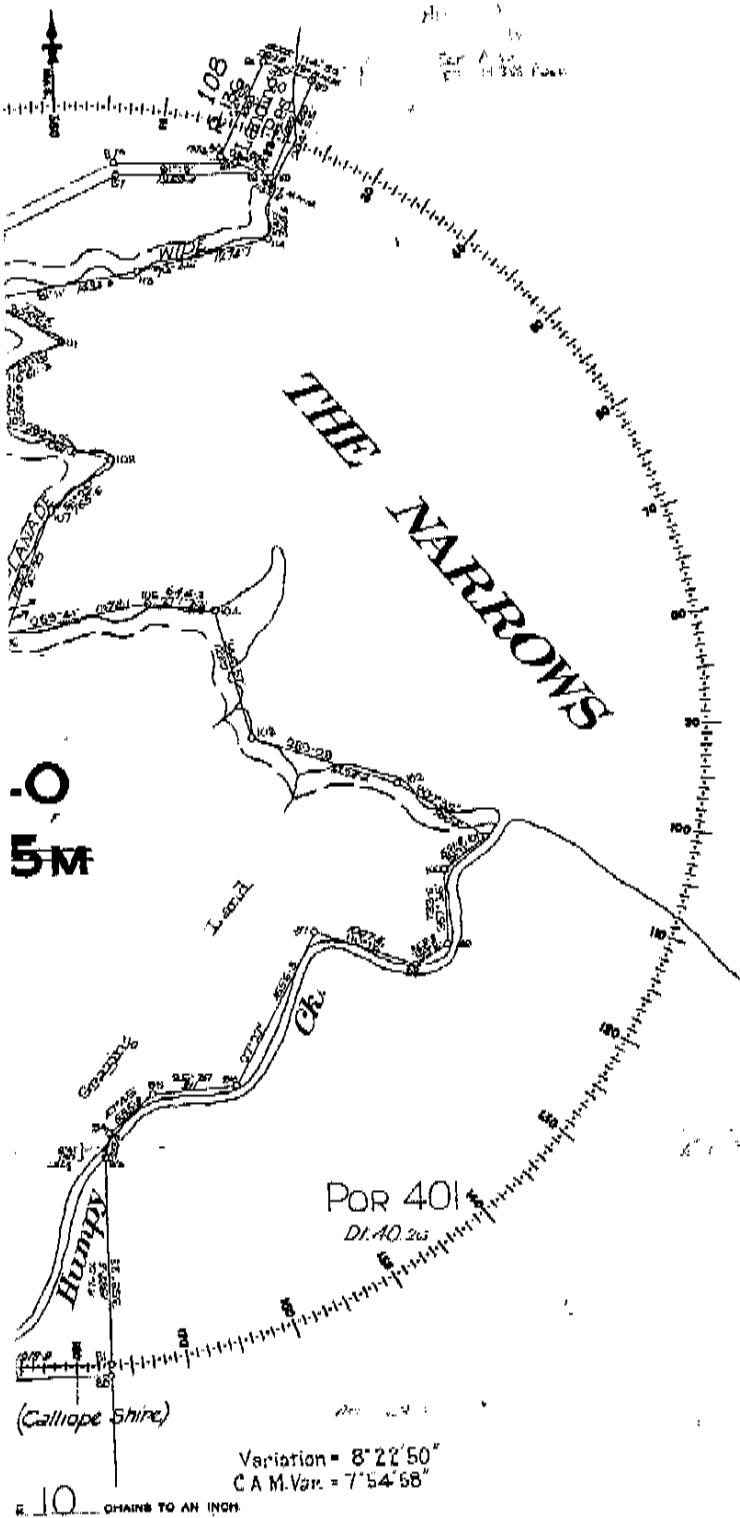
Leases Nos.

Reference to Sights

Line	Bearing	Dist
86 - 87	341° 30'	100.2
87 - 87	248° 11'	100.66
88 - 88	280° 50'	249.1
117 - 117	145° 38'	108.8
84 - 84	354° 18'	100.3

Reference to Corners

Con	Bear	From	Dist	Remarks
85	241° 28'	Ironbark	81.0	- 0.78m
86	15° 10'	Cum	32.2	- 24m
87	248° 11'	Stringybark	80.1	-
88	147° 48'	Box	28.9	-
88	102° 31'	Stringybark	68.0	-
89	207° 34'	Box	32.9	-
90	208° 14'	Stringybark	30.0	-
81	216° 17'		10.0	-
106	11° 41'	Box	45.4	- 24m 75m
106	202° 18'	Cum	45.4	- 75m
	228° 11'	Stringybark	81.0	- 24m
117	145° 38'	Cum	108.7	- 75m
83	247° 51'	Blackwood	22	- 401
81	92° 52'	Ironbark	38.2	- R.



For Additional Plan & Document Holdings Refer to CISP

DESCRIPTIONS AS INDICATED HEREIN HAVE BEEN
 CONVERTED TO LOG(S) ON PLAN DS 289
 Authority M. Watson Senior Draftsman
 Date 17/1/82

Locality

On DL 360

SURVEY. Pors 39 & 40

NAME OF CLAIM Pors 39 & 40 & Location Pors LOT 308

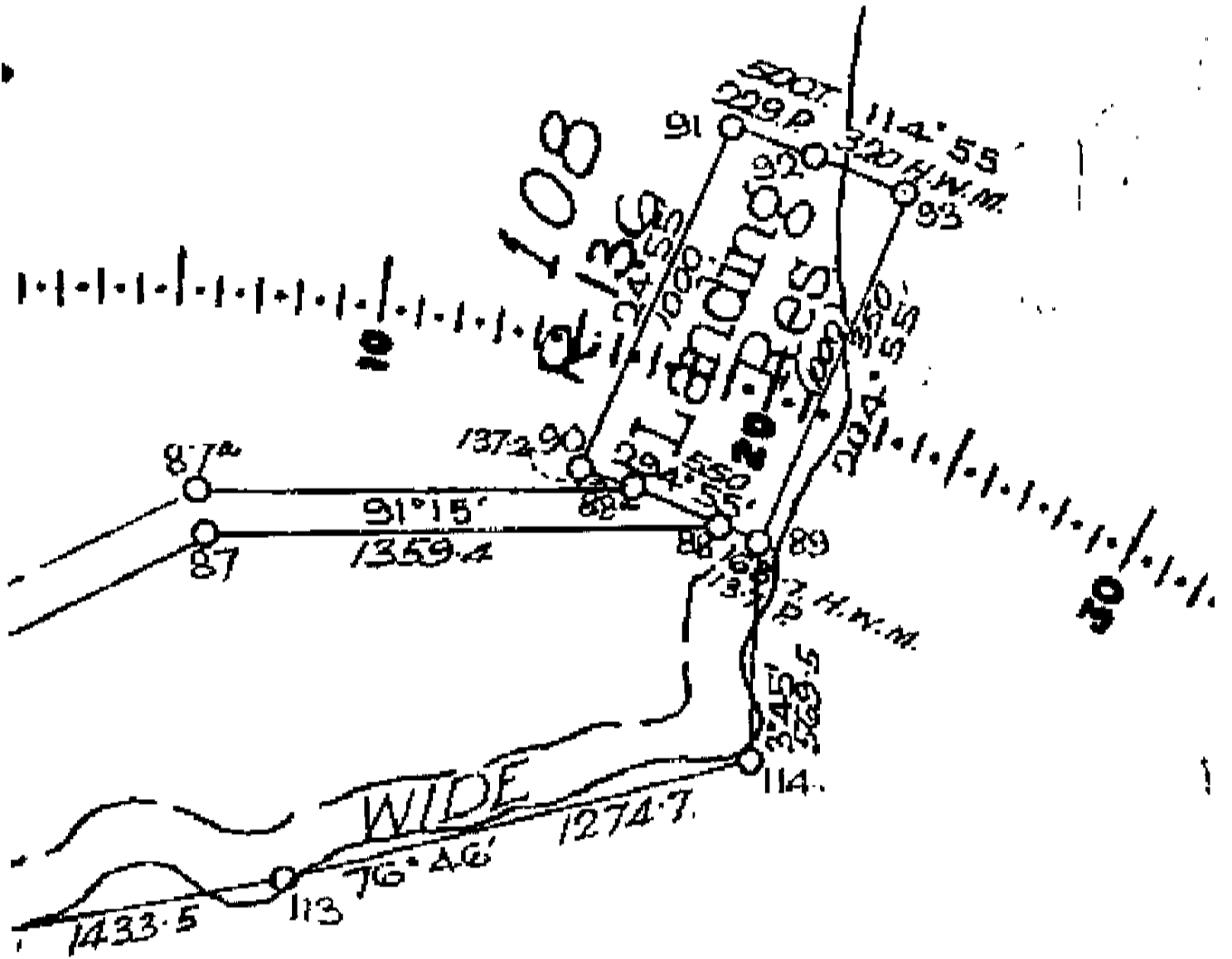
PARISH OF Targinie

COUNTY OF Deas Thompson

DISTRICT OF Port Curtis Gladstone

Cat. No. DS 289

10 CHAINS TO AN INCH
 INSTRUCTIONS FROM THE WARDEN NO.
 DATED 10 TRANSMITTED TO THE WARDEN WITH
 MY LETTER NO. DATED



HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 47015438
Date Created: 30/09/2006

OWNER

THE STATE OF QUEENSLAND (REPRESENTED BY THE DEPARTMENT
OF NATURAL RESOURCES AND WATER)

ESTATE

Estate in Unallocated State Land

LOT 108 CROWN PLAN DS289
Local Government: GLADSTONE

EASEMENTS AND ENCUMBRANCES ENCUMBRANCES

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

** End of Historical State Tenure Search **

Information provided under section 34 Land Title Act(1994)

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Requested By: External Supervisor

HISTORICAL TITLE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 30496212
Date Created: 24/06/1982

REGISTERED OWNER

Dealing No: 711578278 15/04/2008

QUEENSLAND ENERGY RESOURCES LIMITED A.C.N. 107 882 057

TRANSFER No 711578278
QUEENSLAND ENERGY RESOURCES LIMITED A.C.N. 107 882 057
Lodged at 12:54 on 15/04/2008

ESTATE AND LAND

Estate in Fee Simple

LOT 40	CROWN PLAN DS289 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of TARGINIE
LOT 41	CROWN PLAN DS290 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of TARGINIE
LOT 42	CROWN PLAN DS290 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of TARGINIE

For exclusions refer to Plan CP DS289

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. RELEASE No 711578238
MORTGAGE: 602661295 (C438414)
Lodged at 12:49 on 15/04/2008
2. WITHDRAWAL No 701537873
of
CAVEAT: 701379021
Lodged at 10:36 on 09/09/1996
3. CORRECTION No 701431288
CORRECTING THE ENDORSEMENT FOR DEALING 701379021 TO INCLUDE:
LOT 42 ON DS290
Lodged at 09:41 on 10/07/1996
4. CAVEAT No 701379021 CANCELLED BY 701537873
by
MICHAEL SHANE MCNAMARA
so far as relates to Lot 42 on DS290
Lodged at 15:12 on 25/06/1996

HISTORICAL TITLE SEARCH
NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 30496212
Date Created: 24/06/1982

EASEMENTS, ENCUMBRANCES AND INTERESTS

5. CORRECTION No 701368943
CORRECTING THE LAND DESCRIPTION BY DELETING THE EXCLUSIONS
INDICATOR
Lodged at 14:31 on 19/06/1996
6. MORTGAGE No 602661295 (C438414) CANCELLED BY 711578238
TO COMMONWEALTH TRADING BANK OF AUSTRALIA
UNDER SECTION 285 OF THE LAND ACT 1962-1977
Lodged at 00:00 on 05/07/1982
7. CAVEAT No 701609682 FULLY WITHDRAWN ON 21/11/1996
Lodged at 10:18 on 18/10/1996
8. Rights and interests reserved to the Crown by
Deed of Grant No. 30496212 (POR 40)
(POR 41)
(POR 42)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Historical Title Search **

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Requested By: External Supervisor



QUEENSLAND Deed of Grant of Land Land Act 1962-1982

Elizabeth the Second, by the Grace of God, Queen of Australia, and Her other Realms and Territories, Head of the Commonwealth:-

To all to whom these Presents shall come, Greeting:

We with the advice of the Executive Council of Our State of Queensland, and in pursuance of the provisions of the Land Act 1962-1982

do hereby Grant in fee simple unto

DONALD WILLIAM DAVEY

All that Parcel of Land in Our said State,

containing by admeasurement 451.234 HECTARES, exclusive of 3.642 hectares for an esplanade 30.175 metres wide in portion 40

be the same more or less, situated in the County of DEAS THOMPSON Parish of TARGINIE

PORTIONS FORTY, FORTY-ONE AND FORTY-TWO

as delineated on plan of Survey Catalogue No DB. 289 - 6 Da. 290

deposited in the Office of the Department of Mapping and Surveys and reproduced in whole or in part hereunder in accordance with the Reservations and Conditions hereinafter specified and such other Reservations and Conditions as may be contained in and declared by the Laws of Our said State

Specified Reservations:-

- (a) All minerals (as defined by the Mining Act 1968-1980) on and below the surface of the land; and
(b) The right of access for the purpose of searching for and working any mines (as defined by the Mining Act 1968-1980) in any part of the land
(c) All petroleum (as defined by the Petroleum Act 1923-1981) on or below the surface of the land; and
(d) All rights of access for the purpose of searching for and for the operations of obtaining petroleum in any part of the land, and all rights of way for access and for pipe-lines and other purposes requisite for obtaining and conveying petroleum in the event of petroleum being obtained in any part of the said land.

Specified Conditions:-

IN TESTIMONY WHEREOF, We have caused this Our Grant to be Sealed with the Seal of Our said State.

WITNESS Our Trusty and Well-beloved His Excellency Commodore Sir JAMES MAXWELL RAMSAY, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Commander of the Most Excellent Order of the British Empire, upon whom has been conferred the Decoration of the Distinguished Service Cross, and Commander in the Royal Australian Navy (Retired), Governor in and over the State of Queensland and its Dependencies in the Commonwealth of Australia as Government House, Brisbane, in Queensland at present this Third day of June in the thirty first year of Our Reign and in the year of Our Lord One thousand nine hundred and eighty two.

James Ramsay (Signature)

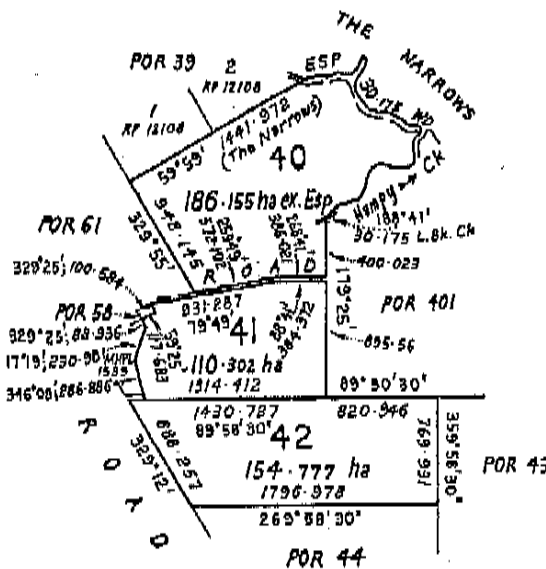
ENTERED as Country Land in the Register Book, Vol. 472 Folio 152 in the Department of Mapping and Surveys, Queensland this Ninth day of June 1982.

(Signature)

Lands Department File Reference:-

PLS. 2192 Gladstone

Survey General



TOTAL DEED AREA 451.234 ha ex Esp in Por 40

ENTERED in the Register Book, Vol. 3150-31 & 34

496

212

this 24th

day of

June

REGISTERED in the Register of Titles, CENTRAL DISTRICT

mp 159641

MORTGAGE No. 159641 under Sec. 285 of the Land Act
 1962-1977
 to Commonwealth Trading Bank of
Australia Vidc
 No. C43844
 ENTERED. **5 JUL 1987**
Hod
 DEP. REGISTRAR OF TITLES
 (Central District)

THE DESCRIPTION OF THE WITHIN LAND IS CONVERTED
 TO LOT(S) 40 on Plan No. DS289
and lots 41 and 42
 ON REGISTERED PLAN No. DS290.
28 FEB 1986
 DEP. REGISTRAR OF TITLES
 (CENTRAL DISTRICT)

HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 17653063
Date Created: 21/10/1995

DESCRIPTION OF LAND

Tenure Reference: GHPL 19/2784

LOT 7	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 10	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 11	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 12	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 13	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 27	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS
LOT 28	CROWN PLAN DS220 County of DEAS THOMPSON Local Government: GLADSTONE	Parish of CURTIS

Area: 2491.650000 Ha. (SURVEYED)

No Land Description

No Forestry Entitlement Area

Purpose for which granted:
NO PURPOSE DEFINED

TERM OF LEASE

Day of beginning of lease

Lease in perpetuity commencing on 01/04/1983

HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 17653063
Date Created: 21/10/1995

REGISTERED LESSEE

ROSS WILLIAM GRAVING
COLIN GRANT GRAVING
MARK JON GRAVING

Interest

1/3
1/3
1/3

AS TENANTS IN COMMON

CONDITIONS

- M175 Subject to the condition of Occupation as defined by the Land Act.
- M177 The lessee shall carry out and perform all the conditions to which the former selection was subject.

ENCUMBRANCES

- MORTGAGE No 602802016 (L383062R)
NATIONAL AUSTRALIA BANK LIMITED
Lodged at 00:00 on 22/02/1993

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
711926804	NOTC INT RES ACQUISITION OF LAND ACT 1967	17/09/2008 10:16	CURRENT

UNREGISTERED DEALINGS

Dealing	Type	Lodgement Date	Status
712035689	VESTING	07/11/2008 16:12	UNVERIFIED

Caution - Charges do not necessarily appear in order of priority

** End of Historical State Tenure Search **

Information provided under section 34 Land Title Act(1994)

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Requested By: External Supervisor

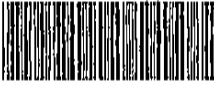
Division IV, Part VI
(Ownership of the timber
remains with the Crown)

Grazing Homestead
Perpetual Lease No. 2784

83-985

GLADSTONE District.

VOL. 5 7653 POL. 63



17653083



VOL. 7653 POL. 63

Lease of Grazing Homestead Perpetual Lease under the Land Act 1962-1983

Elizabeth the Second, by the Grace of God, Queen of Australia, and Her other Realms and Territories, Head of the Commonwealth:—

To All to whom these Presents shall come, Greeting:

Whereas,

JACK RICHEY

made application on or about the Seventeenth day of February in the year one thousand nine hundred and eighty-three under and in accordance with the provisions of Division IV of Part VI of the *Land Act 1962-1983* (hereinafter referred to as "the said Act") with respect to the land held (or lately held) by him as Grazing Farm No. 2784 situated in the abovenamed District: AND WHEREAS the said

JACK RICHEY

thereupon became entitled to a Lease in Perpetuity of the whole or part of the land as a Grazing Homestead Perpetual Lease at the yearly rent hereinafter mentioned, and with, under, and subject to the rights, powers, privileges, terms, conditions, provisions, exceptions, restrictions, reservations and provisos in the said Act, and hereinafter contained: NOW KNOW YE, that in consideration of the premises and of the rent hereby reserved and of the payment of the rent payable under the said Act for the said land, and subject to the condition of Occupation as defined by the said Act.

WE, in pursuance of the said Act, DO HEREBY, for Us, Our Heirs and Successors, Demise and Lease unto the said JACK RICHEY

(hereinafter with his Successors in title designated "the Lessee"), and his lawful Assigns, All that parcel of Land described in the Schedule endorsed on these presents, To HOLD the same unto the Lessee, and his lawful Assigns, IN PERPETUITY from the First day of April

in the year One thousand nine hundred and eighty-three with, under, and subject to the reservations hereinafter particularly mentioned, and with, under, and subject to the rights, powers, privileges, terms, conditions, provisions, exceptions, restrictions, reservations and provisos contained or prescribed in and by the said Act, the *Mining Act 1968-1983* and the *Petroleum Act 1923-1983*, or any Regulations made or which may hereafter be made under the aforesaid Acts or any of them: YIELDING AND PAYING unto Us, Our Heirs and

DUTY STAMP

[Form 9A]

7653-63

Successors, on or before the thirty-first day of March in each and every year, such yearly rent or sum as determined or prescribed subject to the provisions of the said Act such payments to be made at the Office in Brisbane, of the Department of Lands, or at any District Land Office, in Our said State, or at such other place as may from time to time be appointed by the Governor of Our said State in Council: PROVIDED ALWAYS AND WE DO HEREBY RESERVE unto Us, Our Heirs and Successors, all Gold and Minerals (the term "Mineral" to have the same meaning as in the Mining Act 1968-1983), on and below the surface of the said Land, and all Mines of Gold and Minerals, on and below the surface of the said Land: AND WE DO HEREBY ALSO RESERVE unto Us, Our Heirs and Successors, and to such persons as shall from time to time be duly authorised by Us in that behalf during the term of the said Lease, the free right and privilege of access, including ingress, egress, and regress, into, upon, over and out of the said Land, for the purpose of searching for or working Gold and Minerals, or any of them, or mines of Gold and Minerals, or any of them, in any part of the said Land: AND WE DO HEREBY ALSO RESERVE unto Us, Our Heirs and Successors, all Petroleum (the term "Petroleum" to have the same meaning as in the Petroleum Act 1923-1983), on or below the surface of the said Land: AND ALSO all rights of access for the purpose of searching for and for the operations of obtaining Petroleum in any part of the said Land: AND ALSO all rights of way for access and for pipe lines and other purposes requisite for obtaining and conveying Petroleum in the event of Petroleum being obtained in any part of the said Land: AND WE DO FURTHER RESERVE the right of any person duly authorised in that behalf by the Governor of Our said State in Council at all times to go upon the said Land, or any part thereof, for any purpose whatsoever, or to make any survey, inspection, or examination of the same.

PROVIDED NEVERTHELESS and these presents are upon the express conditions that the lessee shall carry out and perform all the conditions to which the former selection was subject.

IN TESTIMONY WHEREOF, We have caused this Our Lease to be sealed with the Seal of Our said State.

WITNESS Our Trusty and Well-beloved His Excellency Commodore Sir JAMES MAXWELL RAMSAY, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Commander of the Most Excellent Order of the British Empire, upon whom has been conferred the Decoration of the Distinguished Service Cross, and Commodore in the Royal Australian Navy (Retired), Governor in and over the State of Queensland and its Dependencies in the Commonwealth of Australia, at Government House, Brisbane, in Queensland aforesaid, this

twenty-fifth day of July, in the thirty-second year of Our Reign and in the year of Our Lord One thousand nine hundred and eighty-three.

James Ramsay

753-63

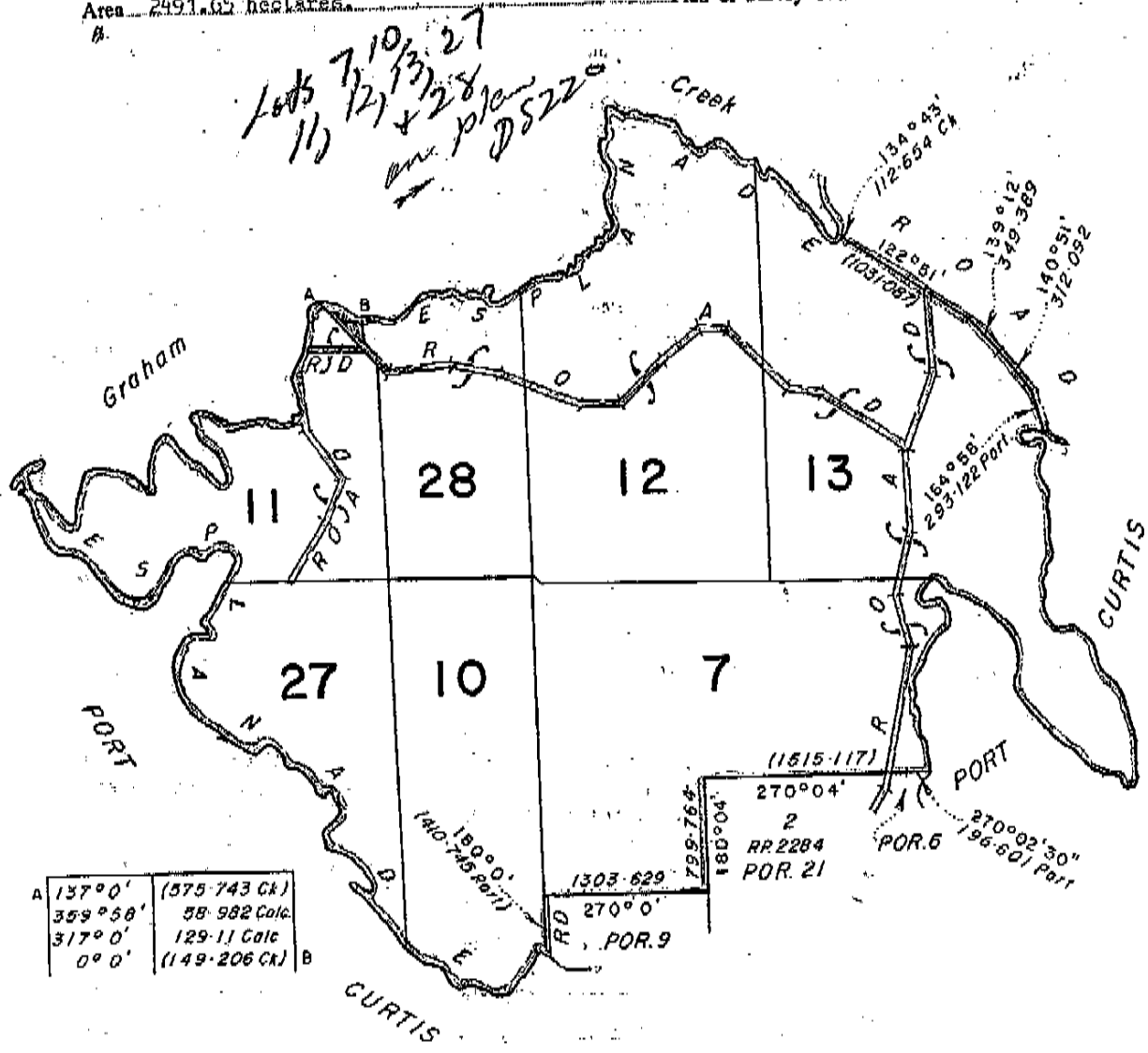
SCHEDULE

Register No. of Lease 19/2784 Gladstone District

County D² Thompson Parish Curtis


Portion Seven, Ten, Eleven, Twelve, Thirteen, Twenty-seven and Twenty-eight

Area 2491.65 hectares. Plan of Survey Cat. No. Ds.220



TOTAL LEASE AREA

2491.65 ha
ex Rds & Esp.

Scale 
Plan No. Ds.220

7653-63

Transfers, Mortgages, Etc., Registered.

IN terms of Regulation 41A (1) of the Land Regulations, the description of the Land comprised in the within lease is amended to lot on plan
701112
13427028
DS22 of [Signature]
Registrar of Dealings

TRANSFER of the Lessee's Interest in the within-described holding to GIUSEPPE EMANUELE
Registered: 17 OCT 1989 Registrar of Dealings

Mortgage No. 219719 to ARROW PROPERTIES PTY LTD
Registered 17 OCT 1989 Registrar of Dealings
REGISTRATION OF TITLE
3 SEP 1993

Ross William Graving, Colin Grant Graving and Mark Jon Graving as tenants in common in equal interests
ARE now the registered lessees of the within-described holding.
TRANSFER No. L383061P
PRODUCED 5 MAR 1993
REGISTERED 3 SEP 1993 REGISTRAR OF TITLES

Memorandum of Mortgage to National Australia Bank Limited
No. L383062R
PRODUCED 22 FEB 1993
REGISTERED 3 SEP 1993 REGISTRAR OF TITLES

Memorandum of Mortgage to Emanuele
No. L383063R
PRODUCED 22 FEB 1993
REGISTERED 3 SEP 1993 REGISTRAR OF TITLES

Elpic Limited
is mortgagee under mortgage No. L383066P
TRANSFER NO. L399099A
PRODUCED 5 MAR 1993
REGISTERED 3 SEP 1993 REGISTRAR OF TITLES

HISTORICAL TITLE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request NO: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 30580025
Date Created: 13/04/1988

Previous Title: 30467118

REGISTERED OWNER	Interest
DASHA KOZLOFF	TENANT IN COMMON 3/11

ESTATE AND LAND

Estate in Fee Simple

LOT 2 REGISTERED PLAN 613702
County of DEAS THOMPSON Parish of TARGINIE
Local Government: GLADSTONE

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. WITHDRAWAL No 709537398
CAVEAT: 701973296
Lodged at 16:17 on 21/04/2006
2. CAVEAT No 701973296 CANCELLED BY 709537398
COMMONWEALTH OF AUSTRALIA
Lodged at 14:30 on 14/05/1997
3. Rights and interests reserved to the Crown by
Deed of Grant No. 30412093 (POR 39)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - Yes Certificate No. 1

Caution - Charges do not necessarily appear in order of priority

** End of Historical Title Search **

COPYRIGHT THE STATE OF QUEENSLAND (NATURAL RESOURCES AND WATER) [2008]
Requested By: External Supervisor

77114

CERTIFICATE OF TITLE

Dealing No.: C548762M

Vol. C 580 Fol. 25

QUEENSLAND

THREE UNDIVIDED ELEVENTHS

Previous Title:
Vol. C467 Fol. 118



VOL. C 580 FOLIO: 025



30580025

Issued: 13 April, 1988

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: *[Signature]*

[Signature]



Acting Local Deputy Registrar of Titles
(Central District)

ESTATE AND LAND

Estate in Fee Simple in Lot 2 on Registered Plan No. 613702 County of Deas Thompson Parish of Targinie Containing 176.4 hectares

FIRST SCHEDULE

DASHA KOZLOFF as tenant in common in a 3/11 parts or shares

SECOND SCHEDULE

1. Rights and interests reserved to the Crown by Deed of Grant Volume C412 Folio 93 (Por. 39)

[Signature]

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

M 2—Opt. Printer. Qld.

(C)

Dealing No. C392265

Reference to previous

Volume Folio

C434 191
C434 192

QUEENSLAND.



CERTIFICATE OF TITLE

REGISTER

VOL. C 467 FOLIO 118



30467118

VOL. C 467 FOLIO 118

NICHOLAS KOZLOFF

is now seized

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 Deas Thompson Parish of Targinie ~~City of~~ Containing 176.4 hectares

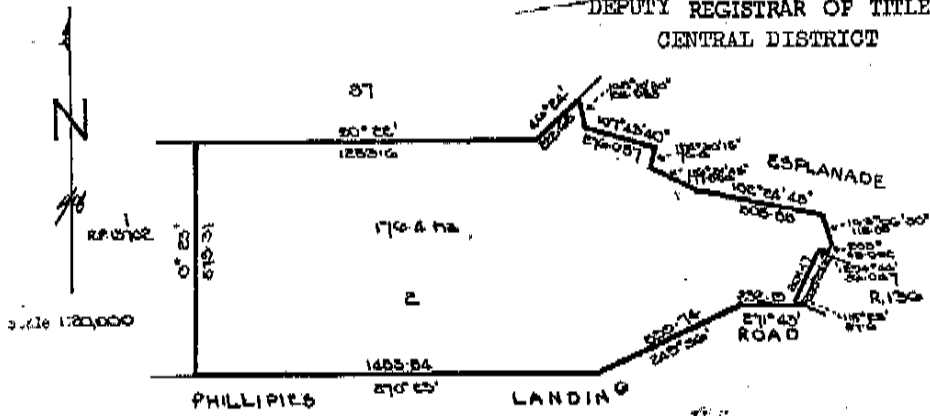
more or less, as shown on the Plan hereon, and therein edged red, Being Lot 2 on registered Plan No. 13702

SAVING ALWAYS to the Crown all the rights and interests reserved to it by the original Deed of Grant No. Vol. C412 Fol. 93 ((For. 39)

IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this 4th day of March One thousand nine hundred and ~~seventy-eight~~ Signed, Sealed, and Delivered) in presence of E.E. Gawn)

Book

DEPUTY REGISTRAR OF TITLES.
CENTRAL DISTRICT



Transfer form with handwritten details: Nicholas Kozloff and Diana Kozloff, now seized of an Estate in fee-simple in the within land, TRANSFER No. C 392265, PRODUCED 6 30 1980, 11:30 a.m. REGD. 4 MAR 1980. Includes signature of Deputy Registrar of Titles.

Transfer form with handwritten details: Nicholas Kozloff and Diana Kozloff as tenants in common, TRANSFER NO. C 392265, PRODUCED 4 Mar 1980, REGISTERED 8 MAR 1980. Includes signature of Deputy Registrar of Titles.

Dasha Reel
 Nicholas Reel and
 Alex Gostensky
 as tenants in common in the
 shares of 1/4 and 1/4
 respectively

row registered proprietors in fee simple.
 TRANSFER NO. CE 7562 B
 PRODUCED 4 MAR 1988
 REGISTERED 8 MAR 1988

ACTING DEPUTY REGISTRAR OF TITLES
 (CENTRAL DISTRICT)

REQUEST to issue Certificate of Title for the whole of
the land

No. CE 49762 M PRODUCED 28 MAR 1988
 REGD

Vol. CE 80
 Fol. 25-27

11 APR 1988

ACTING DEP. REGISTRAR OF TITLES
 (Central District)

HISTORICAL TITLE SEARCH

NATURAL RESOURCES AND WATER, QUEENSLAND

Request No: 5371614
Search Date: 21/11/2008 13:51

Title Reference: 30467136
Date Created: 10/03/1980

Previous Title: 30434191
30434192

REGISTERED OWNER

DEMETRIUS KOZLOFF

ESTATE AND LAND

Estate in Fee Simple

LOT 3 REGISTERED PLAN 613702
County of DEAS THOMPSON Parish of TARGINIE
Local Government: GLADSTONE

For exclusions refer to Plan RP 613702

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. CAVEAT No 704204035
IRINA KOZLOFF
Lodged at 11:28 on 20/07/2000
2. Rights and interests reserved to the Crown by
Deed of Grant No. 30412093 (POR 39)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - Yes

Certificate No. 1

Caution - Charges do not necessarily appear in order of priority

** End of Historical Title Search **

COPYRIGHT THE STATE OF QUEENSLAND (NATURAL RESOURCES AND WATER) [2008]
Requested By: External Supervisor

A 448319

(C)
Dealing No 0392264
Reference to previous
Volume Folio
C434 191
C434 192

QUEENSLAND.



CERTIFICATE OF TITLE

REG

VOL: C 467 FOLIO: 136



30467136

VOL. C 467 FOLIO 136

PETER KOZLOFF and RIASA KOZLOFF

as joint tenants are now seized
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 Deas Thompson Parish of Targinie City of
Containing 137.173 hectares EXCLUSIVE of 4.53 hectares reserved for esplanade
more or less, as shown on the Plan hereon, and therein edged red, Being Lot 3 on
registered Plan No. 13702

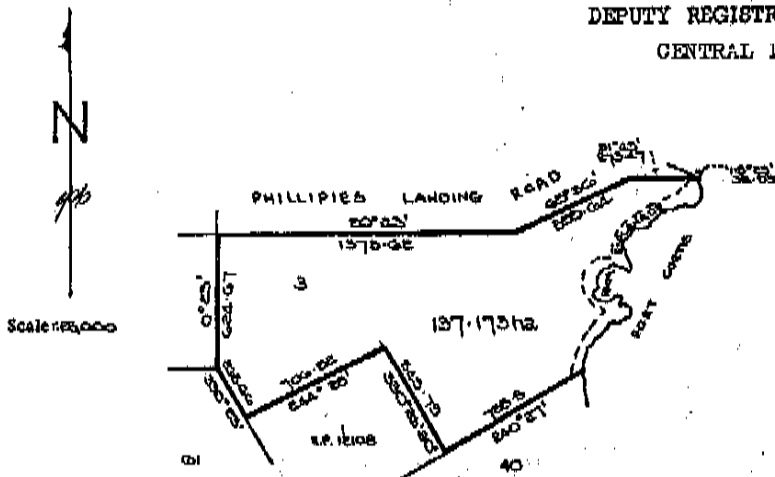
SAVING ALWAYS to the Crown all the rights and interests reserved to it by the
original Deed of Grant No. Vol. C412 Folio 93 (Por. 39)

IN WITNESS whereof, I have hereunto signed my name and affixed my seal,
this 24th day of March One thousand nine hundred and eighty

Signed, Sealed, and Delivered)
in presence of *Belmann*)

Loch

DEPUTY REGISTRAR OF TITLES.
CENTRAL DISTRICT *906*



Demetrius Kozloff
now registered proprietors in fee simple.
TRANSFER NO. *C465906*
PRODUCED *24 Oct 1983*
REGISTERED - 1 NOV 1983 *J.P. Bullock*
DEPUTY REGISTRAR OF TITLES
(CENTRAL DISTRICT)



4 21110

A 307543

(C) UNDIVIDED MOIETY

Dealing No. G343127

Reference to previous

Volume Folio

G429 212

QUEENSLAND



CERTIFICATE OF TITLE

VOL: C 434 FOLIO: 181



30434191

VOL. C 434 FOLIO 191

NICHOLAS KOZLOFF

as tenant in common in one undivided half part or share

is now seized 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 Deas Thompson Parish of Targinie 644-01 Containing 352.8 hectares EXCLUSIVE of an area of 9.105 hectares reserved for Esplanade and 4.477 hectares for a surveyed road more or less, as shown on the Plan hereon, and therein edged red, Being Lot 2 on registered Plan No. 12108

SAVING ALWAYS to the Crown all the rights and interests reserved to it by the original Deed of Grant No. Vol. C412 Folio 93 (Por. 39)

IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this 30th day of July One thousand nine hundred and seventysix

Signed, Sealed, and Delivered in presence of

Blackburn

Jarcy

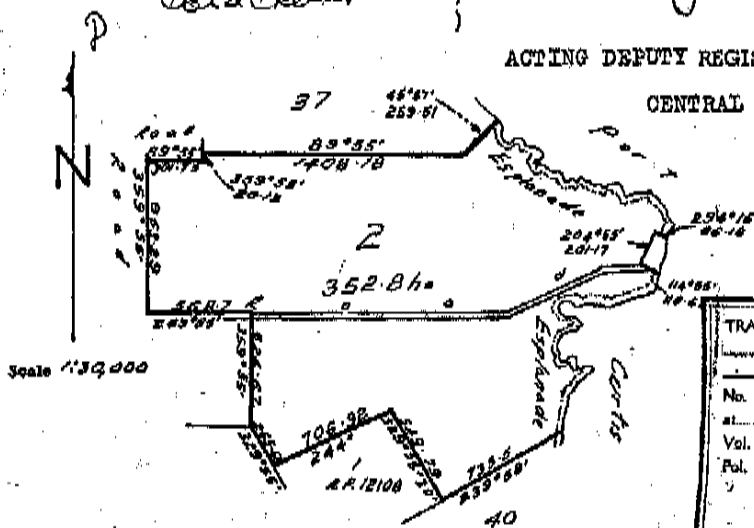


Plan C 384493 RP 19702 Lots 1-3

ACTING DEPUTY REGISTRAR OF TITLES.

CENTRAL DISTRICT

Handwritten notes: 1/1392864 (lots 1 & 3), 1/1392865 (lot 3), 1/1392266 (lot 2)




Scale 1:30,000

TRANSFER of Lot 2 on RP 19702-G-1 Nicholas Kozloff No. C 392265 PRODUCED 6 Feb 1980 at 11:30 a.m. REGD. Vol. 1167 Fol. 118 27 FEB 1980

BY PLAN CAT. No. 13702 the within land is subdivided into 2 lots 1 & 3. A 5750sq m area dedicated for esplanade, reserved and 67m2 has been dedicated for road purposes. No. C. 384493 PRODUCED 7 Aug 1979 at 1:53 p.m. REGD. 22 JAN 1980

Heckman ACTING DEP. REGISTRAR OF TITLES (Central District)

TRANSFER of lots 1 and 3 on RP 137050
to - Felix Hoptoff and
Randa Hoptoff
No. C. 135a 136 PRODUCED 6 Feb 1980
at 11:30 a. m. REGD.
Vol. Nb7
Pol. 135a 136
4 MAR 1980
Boch
DEP. REGISTRAR OF TITLES
(Central District)



FC

A 307544

(C) UNDIVIDED MOIETY

Dealing No. C343127

Reference to previous

Volume Folio
C429 212

QUEENSLAND



CERTIFICATE OF TITLE

VOL: C 434 FOLIO: 192



30434192

VOL. C434 FOLIO 192

PETER KOZLOFF

and

ELIASA KOZLOFF

as joint tenants inter se

as tenants in common in one undivided half part or share are now seized 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 Deas Thompson Parish of Targinie City-of Containing 352.8 hectares EXCLUSIVE of an area of 9.105 hectares reserved for Esplanade and 4.477 hectares for a surveyed road more or less, as shown on the Plan hereon, and therein edged red, Being Lot 2 on registered Plan No. 12108

SAVING ALWAYS to the Crown all the rights and interests reserved to it by the original Deed of Grant No. Vol. C412 Folio 93 (Por. 39)

IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this 30th day of July One thousand nine hundred and seventy six

Signed, Sealed, and Delivered) in presence of
Blackburn

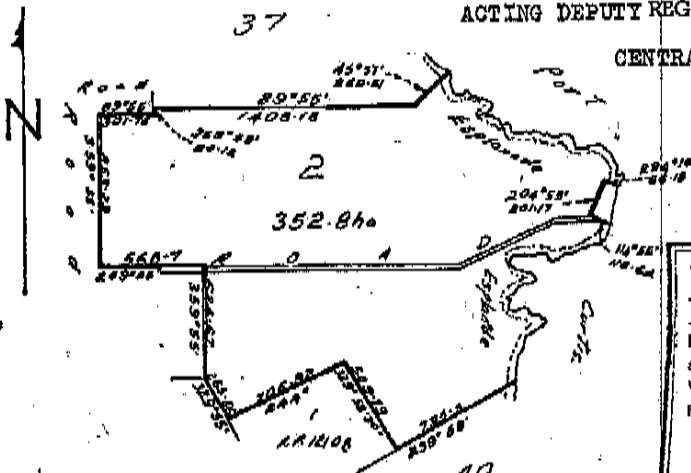
Garry



ACTING DEPUTY REGISTRAR OF TITLES.

CENTRAL DISTRICT

*Plz C384495
R.P. 12702
Lots 1-3
Hv (392264
(66143)
H. C. 392265
det 2
(392266
det 2*



TRANSFER of Lot 2 on RP 12702 - 6
Nicholas Bayleff
No. C. 392265 PRODUCED 2 Jul 1980
at 11.30 a.m. REGD.
Vol. 467
Fol. 118
27 FEB 1980
Boch
DEP. REGISTRAR OF TITLES
(Central District)

BY PLAN CAT. No. 12702 the within land is subdivided into lots 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.
dedicated for esplanade purposes and
67 m² has been dedicated for road purposes.
No. C. 384495 PRODUCED 7 Aug 1979
at 1.53 p.m. REGD. 22 JAN 1980
Sheahan
ACTING DEP. REGISTRAR OF TITLES
(Central District)


TRANSFER of *Lot 1 Land 3. 100. AP 13700*
to - Peter Hagler and Linda Hagler

No. C *39224* PRODUCED *6 Feb 1980*
 at *11:30 a.m.* REGD.

Vol. *110*
 Fol. *135 & 136*

4 MAR 1980

Koch
 DEP. REGISTRAR OF TITLES
 (Central District)



F.C

A 306535

(C)
Dealing No. 0336485
Reference to previous
Volume Folio
412 93

QUEENSLAND



CERTIFICATE OF TITLE

VOL: C 429 FOLIO: 212



30429212

VOL. C 429 FOLIO 212

ANDREW IVANOFF

is now seized
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 Deas Thompson Parish of Targinie City of
Containing 352.8 hectares EXCLUSIVE of an area of 9.105 hectares reserved for Esplanade and 4.477 hectares for a surveyed road more or less, as shown on the Plan hereon, and therein edged red, Being Lot 2 on registered Plan No. 12108

SAVING ALWAYS to the Crown all the rights and interests reserved to it by the original Deed of Grant No .Vol. 412 Folio 93 (Por. 39)

IN WITNESS whereof, I have hereunto signed my name and affixed my seal, this 26th day of February One thousand nine hundred and seventy six

Signed, Sealed, and Delivered) in presence of

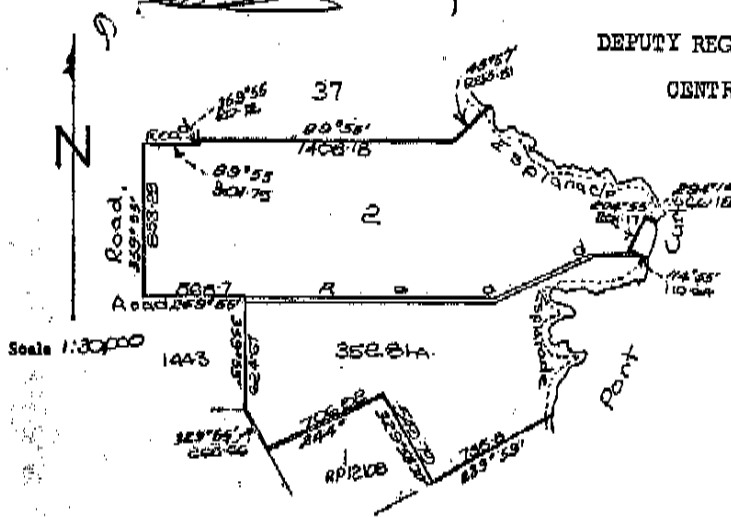


Loch



(348/27 (all))

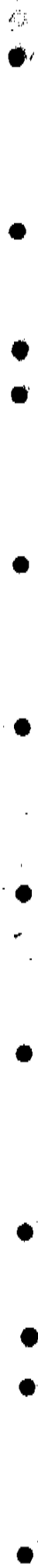
DEPUTY REGISTRAR OF TITLES.
CENTRAL DISTRICT

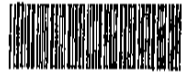


TRANSFER of the whole of the land to *Nicholas Kozloff, Peter Kozloff and Liisa Kozloff*
No. C *44312/7* PRODUCED *23 July 1976*
at *H.O.P.* REGD. *27 JUL 1976*
Vol. *434*
Folio *191/2*
ACTING DEP. REGISTRAR OF TITLES (Central District)

K/C

SA 10000





DEED OF GRANT OF LAND
Land Act 1962-1973

AGRICULTURAL SELECTION

Acquired by _____

Elizabeth the Second, by the Grace of God, Queen of Australia, and Her other Realms and Territories, Head of the Commonwealth:--

To all to whom these Presents shall come, Greeting:

Whereas in conformity with the Laws and Regulations in force for the alienation of Crown Land in our State of Queensland _____
ANDREW IVANOFF

has become entitled to a Deed of Grant in Fee-simple of the Land hereinafter described
NOW KNOW YE, in consideration of the premises and of the sum of TWO THOUSAND NINE HUNDRED AND SIXTEEN DOLLARS
for Us, and on Our behalf, paid into the Office in Brisbane of the Department of Lands or at any District Land Office of Our said State, and in further consideration of the Quit-Rent hereinafter reserved, WE, with the advice of The Executive Council of Our said State, have granted, and for Us, Our Heirs and Successors, do hereby Grant unto the said
ANDREW IVANOFF, his Administrators
and Assigns, subject to the Reservations hereinafter mentioned,

All That Parcel of Land in our State, containing by admeasurement 393.354 HECTARES
be the same more or less, situated in the County of DEAS THOMPSON Parish of TARGENTIE PORTION THIRTY-NINE,
Being the land comprised in former Agricultural Farm No. 2753,
Gladstone District,
as delineated on plan of Survey catalogue No. 25,354 deposited in the Survey Office and as shown edged red on diagram hereon, exclusive of 4.477 hectares for
a surveyed road and a further 9.105 hectares reserved for Esplanade with all the Rights and Appurtenances whatsoever thereto belonging.

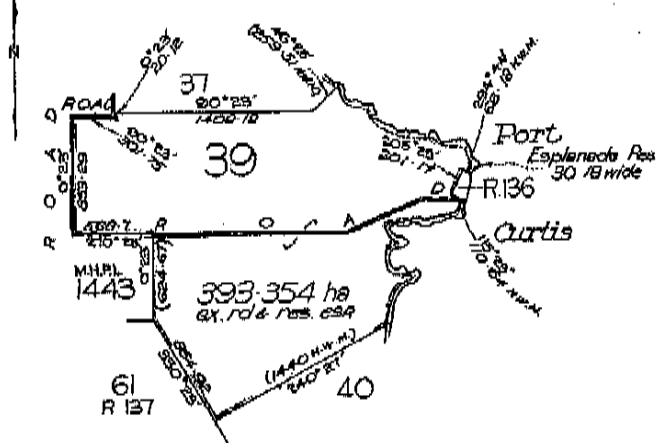
To Hold unto the said ANDREW IVANOFF, his Administrators
and Assigns for ever, Yielding and Paying therefor Yearly unto Us, Our Heirs and Successors, the Quit-Rent of One Peppercorn for ever, if demanded: But Subject Nevertheless to the several Conditions and Reservations contained in and declared by the Land Act 1962-1973, the Mining Act 1968-1973 and "The Petroleum Act, 1923 to 1967": AND WE do hereby reserve unto Us, Our Heirs and Successors, all Gold and Minerals (the term "Minerals" to have the same meaning as in the Mining Act 1968-1973), on and below the surface of the said Land, and all Mines of Gold and Minerals, or any of them, in any part of the said Land: AND WE do hereby also reserve unto Us, Our Heirs and Successors, and to such persons as shall from time to time be duly authorized by Us in that behalf, the free right and privilege of access, including ingress, egress, and regress, into, upon, over, and out of the said Land, for the purpose of searching for or working Gold and Minerals, or any of them, or Mines of Gold and Minerals, or any of them, in any part of the said Land: AND WE do hereby also reserve unto Us, Our Heirs and Successors, all Petroleum (the term "Petroleum" to have the same meaning as in "The Petroleum Act, 1923 to 1967"), on or below the surface of the said Land: AND also all rights of access for the purpose of searching for, and for the operations of obtaining Petroleum in any part of the said Land: AND also all rights of way for access and for pipe lines and other purposes requisite for obtaining and conveying Petroleum in the event of Petroleum being obtained in any part of the said Land: AND WE do also further reserve unto Us, Our Heirs and Successors, All Hellum found in association with Petroleum in any part of the said Land:

IN TESTIMONY WHEREOF, We have caused this Our Grant to be Sealed with the Seal of Our said State.

WITNESS Our Trusty and Well-beloved His Excellency SIR COLIN THOMAS HANNAM, Air Marshal on the Retired List of the Royal Australian Air Force, Knight Commander of Our Most Distinguished Order of Saint Michael and Saint George, Knight Commander of Our Most Excellent Order of the British Empire, Companion of Our Most Honourable Order of the Bath, Governor in and over the State of Queensland and its Dependencies in the Commonwealth of Australia, at Government House, Brisbane, in Queensland aforesaid, this _____ day of _____ in the twenty _____ year of Our Reign and in the year of Our Lord One thousand nine hundred and seventy _____

ENTERED as _____ Country Land in the Register Book, Vol. 403 _____ Folio _____, in the Survey Office, Brisbane, this _____ day of _____, 1974.

SURVEYOR-GENERAL



Plan Cat. No. 25,354
Scale 1:30000

Boch
Deputy Registrar of Titles
Central District


12/08
12/85
12/12

No. C. *386485* By Plan Cdb No. *12128*
 the within land is subdivided into *lots 1 and 2*

Produced *23 Jan 1977* Nat. 7-1975-10

Registered, 17 FEB 1976

Vol *429*
 fol *311/2* *Boch*



REGISTRAR OF TITLES
CENTRAL DISTRICT

Annex D

Historical Aerial Photographs



Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_01	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 1961.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393



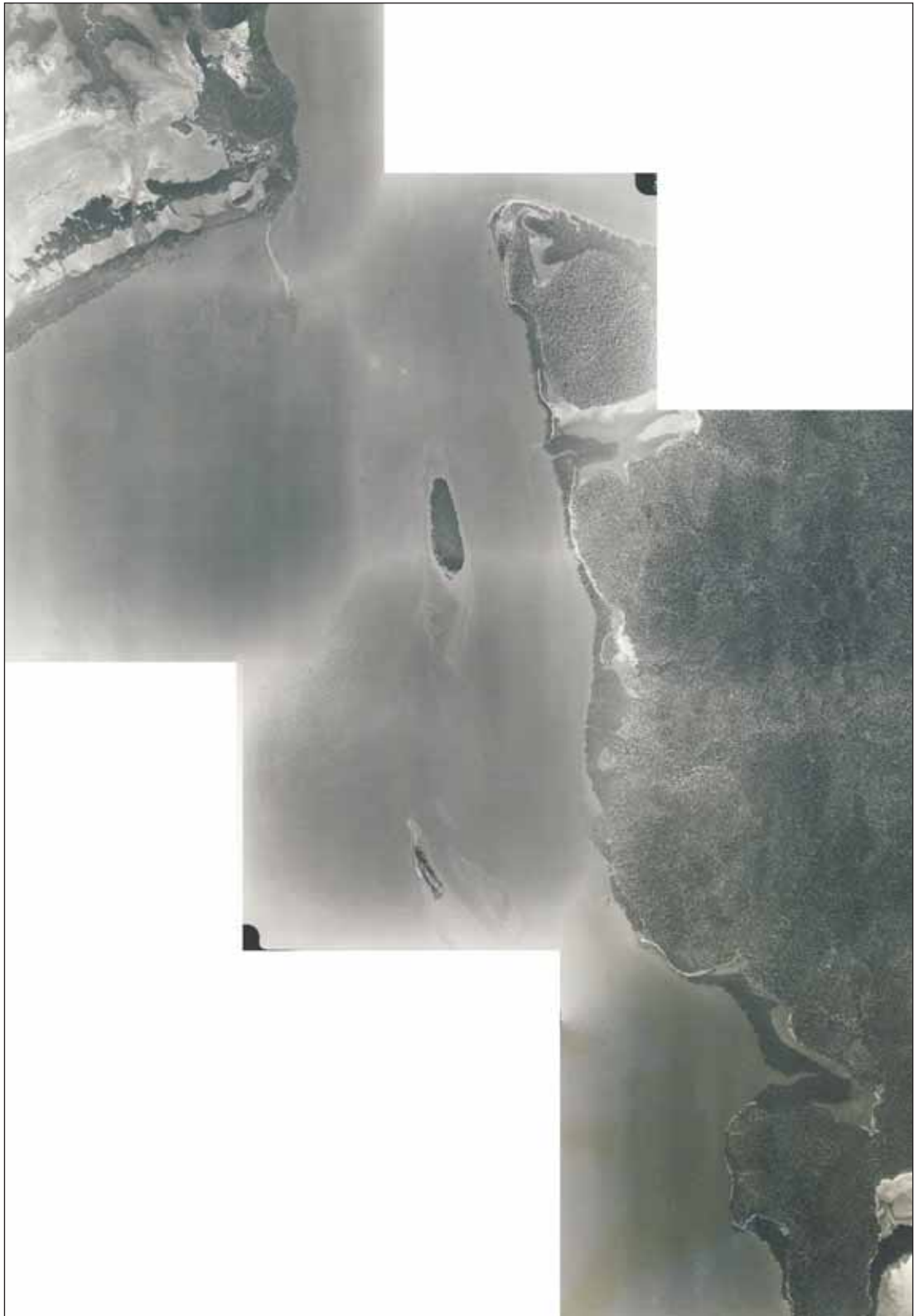


Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_02	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 1970.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393





Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_03	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 1975.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393



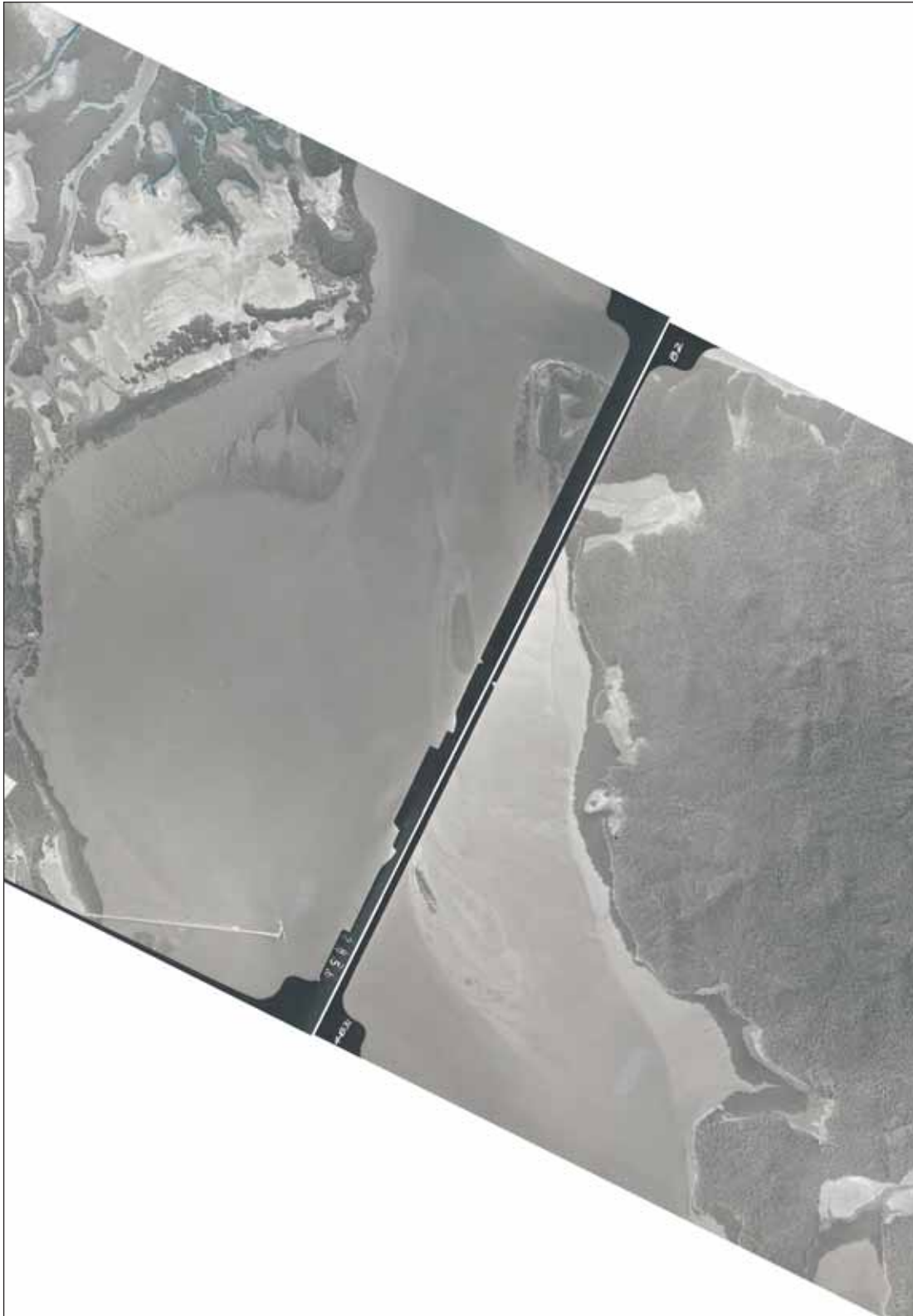


Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_04	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 1980.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393





Client:	BG/QGC		
Project:	Queensland Curtis Island LNG Project		
Drawing No:	0086156_05		
Date:	23/12/2008	Drawing size:	A4
Drawn by:	AB	Reviewed by:	AB
Source:	-		

Curtis Island, Historical Aerial Photograph 1989.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393



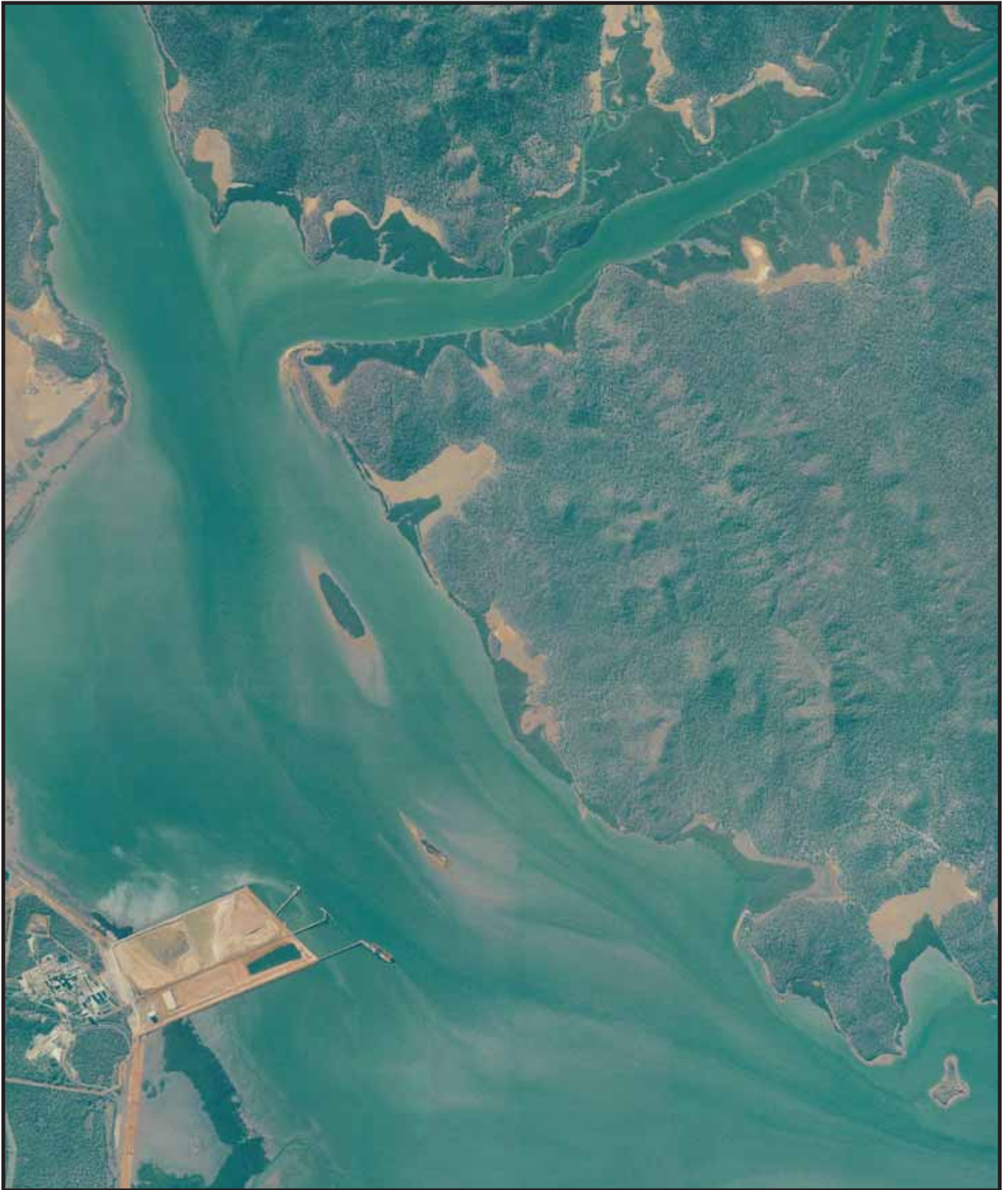


Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_06	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 1996.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393





Client:	BG/QGC	
Project:	Queensland Curtis Island LNG Project	
Drawing No:	0086156_07	
Date:	23/12/2008	Drawing size: A4
Drawn by:	AB	Reviewed by: AB
Source:	-	

Curtis Island, Historical Aerial Photograph 2007.

Environmental Resources Management Australia Pty Ltd
Level 1, 60 Leichhardt Street, Spring Hill, QLD 4000
Telephone +61 7 3839 8393



Annex E

EMR / CLR Search

QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092267 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 2 Plan: RP613702

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

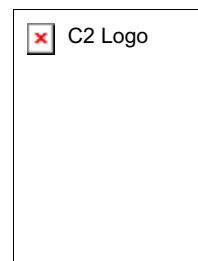
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092271 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 3 Plan: RP613702

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

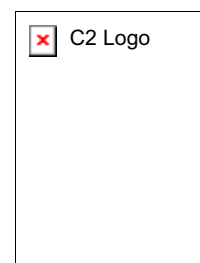
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092265 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 7 Plan: DS220

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

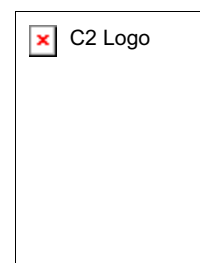
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092247 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 10 Plan: DS220

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

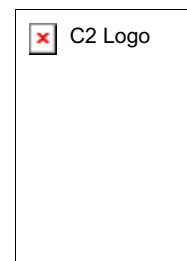
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092263 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 11 Plan: DS220

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

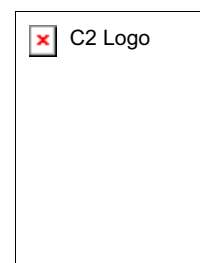
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

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QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092259 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 27 Plan: DS220

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

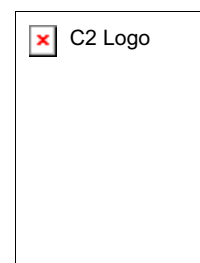
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092261 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 28 Plan: DS220

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

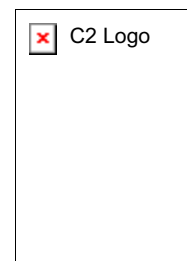
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092268 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 40 Plan: DS289

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

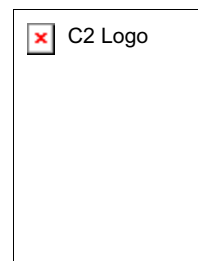
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



QLD ENVIRONMENTAL PROTECTION AGENCY

**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 1092270 EMR Site Id: 14 November 2008
This response relates to a search request received for the site:
Lot: 108 Plan: DS289

EMR RESULT

The above site is NOT included on the Environmental Management Register.

CLR RESULT

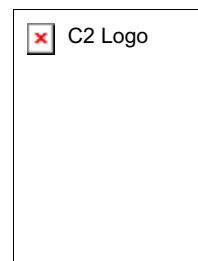
The above site is NOT included on the Contaminated Land Register.

ADDITIONAL ADVICE

**Note: Searches maybe conducted online through the State Government Website
www.smartservice.qld.gov.au or Citec Confirm www.confirm.com.au.**

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

Lindi Bowen
Registrar, Contaminated Land Unit



Annex F

Site Photographs



Photograph 1

Former Cattle Dip site.



Photograph 2

Open wood vegetation at Curtis Island.



Photograph 3

Typical understory of seedlings



Photograph 4

Mud flats at Friend Point potential area of ASS exposure



Photograph 5

Mud flats at Curtis Island .



Photograph 6

View from Curtis Island towards Friend Point.

Annex G

Borehole Logs

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Site**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-01

Drill Start Date: 5/11/2008	Total Depth (m): 2.5mbgs	Water Level (Final):
Drill Finish Date: 5/11/2008	Hole Diam. / Width (mm):	RL Ground:
Drill Co: Numac	Casing Type:	RL Case:
Driller: Craig Clifford	Casing Diam. (mm):	East MGA:
Drill Method: Push tube	Surface Completion:	North MGA:
Hole Type: Soil Bore	Water Strike:	

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0						
Clay Brown, dry, very loose, non-plastic, minor gravel pockets from 0.5mbgs, fine-medium grained								CI01-0.5	
			1					CI01-1.5	
			2					CI01-2.2	
Sandy Clay Light brown, dry, medium density, non-plastic, minor gravel inclusions up to 5cm, subrounded to angular, poorly sorted fine-medium grained.									
Push Tube Refusal @ 2.2m on Shale/Weathered Shale									
EOH @ 2.5mbgs Refusal on Bedrock			3						
			4						
			5						

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

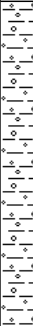

Log By: Adam Boevink
 Checked By: Graham Ohmsen
 Page 1 of 1

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Site**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-02

Drill Start Date: 5/11/2008	Total Depth (m): 3.3mbgs	Water Level (Final):
Drill Finish Date: 5/11/2008	Hole Diam. / Width (mm):	RL Ground:
Drill Co: Numac	Casing Type:	RL Case:
Driller: Craig Clifford	Casing Diam. (mm):	East MGA:
Drill Method: Push tube	Surface Completion:	North MGA:
Hole Type: Soil Bore	Water Strike:	

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks	
Ground Surface			0							
Gravel Brown, dry, loose, fine - coarse gravel, subangular, poorly sorted with some clay throughout, gravel becoming more coarse with depth.								CI02-0.25		
			1						CI02-1.2	
Sandy Gravel Light brown-yellow, dry, medium density, poorly sorted, medium - coarse grained.								CI02-1.8		
			2						CI02-3.0	
Push Tube Refusal @ 3.1m on Bedrock Auger Refusal @ 3.3m on Bedrock No Recovery from Augers			3							
			4							
			5							

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

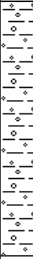
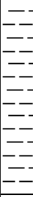
Log By: Adam Boevink
 Checked By: Graham Ohmsen

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Site**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-03

Drill Start Date: 5/11/2008	Total Depth (m): 3.8mbgs	Water Level (Final):
Drill Finish Date: 5/11/2008	Hole Diam. / Width (mm):	RL Ground:
Drill Co: Numac	Casing Type:	RL Case:
Driller: Craig Clifford	Casing Diam. (mm):	East MGA:
Drill Method: Push tube	Surface Completion:	North MGA:
Hole Type: Soil Bore	Water Strike:	

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0						
Gravel Whitish brown, dry, loose, poorly sorted, fine-course grained, subangular.								CI03-0.5	
			1						CI03-1.5
Clay Dark-brown/yellowish brown mottling, dry, non-plastic.			2					CI03-2.5	
			3						CI03-3.8
Push tube refusal @ 3.8m			4						
			5						

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

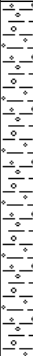
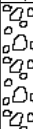
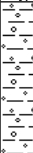

Log By: Adam Boevink
 Checked By: Graham Ohmsen

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Site**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-04

Drill Start Date: **5/11/2008** Total Depth (m): **2.7mbgs** Water Level (Final):
 Drill Finish Date: **5/11/2008** Hole Diam. / Width (mm):
 Drill Co: **Numac** Casing Type:
 Driller: **Craig Clifford** Casing Diam. (mm):
 Drill Method: **Push tube** Surface Completion:
 Hole Type: **Soil Bore** Water Strike:

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0						
Clay Light greyish brown, dry, medium density becoming loose, non-plastic with minor gravel, medium grained, subangular.								CI04-0.3	
			1						CI04-1.0
Gravel Orange-yellow mottling, dry, dense, poorly sorted, coarse grained, angular-subangular.									
Clay Light-dark grey, dry, very dense, non-plastic with minor fine grained, subangular gravel.			2					CI04-2.0	
Clay Orange/grey mottling, dry, very dense, non-plastic with some coarse, subangular gravel. Push Tube Refusal @ 2.7m								CI04-2.7	
			3						
			4						
			5						

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

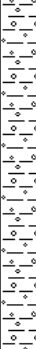
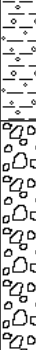


Log By: Adam Boevink
 Checked By: Graham Ohmsen
 Page 1 of 1

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Soils**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-05

Drill Start Date: **5/11/2008** Total Depth (m): **3.2mbgs** Water Level (Final):
 Drill Finish Date: **5/11/2008** Hole Diam. / Width (mm):
 Drill Co: **Numac** Casing Type:
 Driller: **Craig Clifford** Casing Diam. (mm):
 Drill Method: **Push tube** Surface Completion:
 Hole Type: **Soil Bore** Water Strike:

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks	
Ground Surface			0							
Clay Light yellowish brown, dry, loose becoming medium dense, non-plastic with minor subangular gravel 0-0.4mbgs.								CI05-0.2		
									CI05-0.75	
Clay Light grey/orange mottling, dry, dense, non-plastic with minor subangular gravel			1							
Gravel Orange/reddish brown mottling, poorly sorted, medium-course grained subangular to angular with minor sand.			2					CI05-2.0		
Push Tube Refusal @ 3.2m on Bed Rock			3					CI05-3.2		
			4							
			5							

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: Adam Boevink
 Checked By: Graham Ohmsen
 Page 1 of 1

Client: **BG/QGC**
 Project No: **0086165**
 Project Name: **Curtis Island LNG Contaminated Soils**
 Site Name: **Curtis Island**
 Site Address: **Curtis Island**

ID: CI-06

Drill Start Date: **5/11/2008** Total Depth (m): **3.4mbgs** Water Level (Final):
 Drill Finish Date: **5/11/2008** Hole Diam. / Width (mm):
 Drill Co: **Numac** Casing Type:
 Driller: **Craig Clifford** Casing Diam. (mm):
 Drill Method: **Push tube** Surface Completion:
 Hole Type: **Soil Bore** Water Strike:

ERM Australia Pty Ltd

Lithology	Symbol	Well	Depth (m)	Recovery	Sample Type	PPT (kPa)	PID (ppm)	Sample Details	Remarks
Ground Surface			0						
Clay Light greyish brown, dry, loose, non-plastic..								CI06-0.4	
Clay Dark Grey/ orange mottling, dry, non-plastic with some medium grained subangular gravel. Gravel becoming course from 2.8m increaseing grain size with depth.			1					CI06-1.2	
Push Tube Refusal @ 3.4m								CI06-2.7	
								CI06-3.4	
			4						
			5						

NOTE: This bore log is for environmental purposes only and is not intended to provide geotechnical information.

Log By: Adam Boevink
 Checked By: Graham Ohmsen

Annex H

Laboratory Results



Certificate of Analysis

Environmental Resources Management Australia
Level 1, 60 Leichhardt Street
SPRING HILL QLD 4004
Australia

Attention: Graham Ohmsen

Project 08ENBR0031246
Client Reference 0086165/11
BG LNG Geology, Gladstone
Received Date 13/11/2008 11:00:00 AM

Customer Sample ID		CI01-0.5	CI01-1.5	CI01-2.2	CI02-0.25	CI02-1.2
Sample Matrix		SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.		1266392	1266393	1266394	1266395	1266396
Date Sampled		05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
SVOC						
Test/Reference	PQL	Unit				
2200 OC Pesticides in Soil by GC-MS						
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
2,4,5,6-tetrachloro-m-xylene-SURROG ATE	1	%	101	98	100	99
2400 OP Pesticides in Soil by GC						
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	90	91	86	88

Customer Sample ID		CI01-0.5	CI01-1.5	CI01-2.2	CI02-0.25	CI02-1.2
Sample Matrix		SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.		1266392	1266393	1266394	1266395	1266396
Date Sampled		05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
Metals						
Test/Reference	PQL	Unit				
3200 Tot Recov. Metals in Soil by ICPAES						
Arsenic	3	mg/kg	18	13	14	17
Cadmium	1	mg/kg	<1	<1	<1	<1
Chromium	2	mg/kg	63	53	42	68
Copper	1	mg/kg	56	46	52	50
Lead	5	mg/kg	19	14	17	16
Nickel	2	mg/kg	28	22	26	27
Zinc	2	mg/kg	53	43	42	45
3400 Total Mercury in Soil by ICP-AES						
Total Mercury	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05
Miscellaneous						
Test/Reference	PQL	Unit				
5000 Moisture Content						
% Moisture	1	%	6	8	9	5

Customer Sample ID			CI02-1.8	CI02-3.0	CI03-0.5	CI03-1.5	CI03-2.5
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266397	1266398	1266399	1266400	1266401
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
SVOC							
Test/Reference	PQL	Unit					
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5,6-tetrachloro-m-xylene-SURROG ATE	1	%	99	102	108	104	107
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	80	90	90	93	87
Metals							
Test/Reference	PQL	Unit					
3200 Tot Recov. Metals in Soil by ICPAES							
Arsenic	3	mg/kg	26	13	11	8.1	7.7
Cadmium	1	mg/kg	<1	<1	<1	<1	<1
Chromium	2	mg/kg	78	36	32	28	43
Copper	1	mg/kg	68	48	54	43	43
Lead	5	mg/kg	22	14	11	11	12
Nickel	2	mg/kg	38	19	19	13	15
Zinc	2	mg/kg	64	41	50	29	24
3400 Total Mercury in Soil by ICP-AES							

Customer Sample ID			CI02-1.8	CI02-3.0	CI03-0.5	CI03-1.5	CI03-2.5
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266397	1266398	1266399	1266400	1266401
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
Metals							
Test/Reference	PQL	Unit					
Total Mercury	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	5	6	8	9	10

Customer Sample ID			CI03-2.5 DUP	CI03-3.8	CI04-0.3	CI04-1.0	CI04-2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266402	1266403	1266404	1266405	1266406
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
SVOC							
Test/Reference	PQL	Unit					
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5,6-tetrachloro-m-xylene-SURROG ATE	1	%	108	98	95	102	103
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	85	78	77	81	83
Metals							
Test/Reference	PQL	Unit					
3200 Tot Recov. Metals in Soil by ICPAES							
Arsenic	3	mg/kg	4.0	10.0	9.1	10.0	4.7
Cadmium	1	mg/kg	<1	<1	<1	<1	<1
Chromium	2	mg/kg	32	41	37	30	18
Copper	1	mg/kg	29	35	49	61	35
Lead	5	mg/kg	7.3	7.5	13	9.7	10
Nickel	2	mg/kg	8.8	11	13	19	16
Zinc	2	mg/kg	19	39	35	39	24
3400 Total Mercury in Soil by ICP-AES							

Customer Sample ID			CI03-2.5	CI03-3.8	CI04-0.3	CI04-1.0	CI04-2.0
Sample Matrix			DUP	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266402	1266403	1266404	1266405	1266406
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
Metals							
Test/Reference	PQL	Unit					
Total Mercury	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	12	7	11	12	12

Customer Sample ID			CI04-2.7	CI05-0.2	CI05-0.75	CI05-2.0	CI05-2.0 DUP
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266407	1266408	1266409	1266410	1266411
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
SVOC							
Test/Reference	PQL	Unit					
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5,6-tetrachloro-m-xylene-SURROG ATE	1	%	105	105	98	114	102
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	90	91	79	90	86
Metals							
Test/Reference	PQL	Unit					
3200 Tot Recov. Metals in Soil by ICPAES							
Arsenic	3	mg/kg	11	11	5.1	12	8.8
Cadmium	1	mg/kg	<1	<1	<1	<1	<1
Chromium	2	mg/kg	42	41	25	39	45
Copper	1	mg/kg	28	43	46	48	46
Lead	5	mg/kg	12	14	6.7	18	21
Nickel	2	mg/kg	13	22	15	11	12
Zinc	2	mg/kg	37	35	29	26	28
3400 Total Mercury in Soil by ICP-AES							

Customer Sample ID			CI04-2.7	CI05-0.2	CI05-0.75	CI05-2.0	CI05-2.0 DUP
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266407	1266408	1266409	1266410	1266411
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
Metals							
Test/Reference	PQL	Unit					
Total Mercury	0.05	mg/kg	0.1	<0.05	<0.05	0.14	<0.05
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	8	3	12	11	12

Customer Sample ID			CI05-3.2	CI06-0.4	CI06-1.2	CI06-2.7	CI06-3.4
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1266412	1266413	1266414	1266415	1266416
Date Sampled			05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008
SVOC							
Test/Reference	PQL	Unit					
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5,6-tetrachloro-m-xylene-SURROG ATE	1	%	95	105	95	94	95
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	76	86	84	76	76
Metals							
Test/Reference	PQL	Unit					
3200 Tot Recov. Metals in Soil by ICPAES							
Arsenic	3	mg/kg	16	3.6	10	13	<3
Cadmium	1	mg/kg	<1	<1	<1	<1	<1
Chromium	2	mg/kg	40	19	38	36	34
Copper	1	mg/kg	60	27	73	41	22
Lead	5	mg/kg	23	7.2	16	9.4	<5
Nickel	2	mg/kg	19	6.3	20	9.4	6.8
Zinc	2	mg/kg	58	23	28	34	27
3400 Total Mercury in Soil by ICP-AES							

Customer Sample ID		CI05-3.2	CI06-0.4	CI06-1.2	CI06-2.7	CI06-3.4
Sample Matrix		SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.		1266412	1266413	1266414	1266415	1266416
Date Sampled		05/11/2008	05/11/2008	05/11/2008	05/11/2008	05/11/2008

Metals

Test/Reference	PQL	Unit					
Total Mercury	0.05	mg/kg	<0.05	<0.05	0.05	<0.05	<0.05

Miscellaneous

Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	7	6	14	11	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
2200 OC Pesticides in Soil by GC-MS	Brisbane 14356	18/11/2008	20/11/2008
2400 OP Pesticides in Soil by GC	Brisbane 14356	18/11/2008	20/11/2008
3200 Tot Recov. Metals in Soil by ICPAES	Brisbane 14356	18/11/2008	19/11/2008
3400 Total Mercury in Soil by ICP-AES	Brisbane 14356	18/11/2008	19/11/2008
5000 Moisture Content	Brisbane 14356	18/11/2008	19/11/2008

Labmark Internal Quality Control Review

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
- Proficiency trial results are available on request.
- Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spike or surrogate recoveries.
- Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
- SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
- When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
- Samples were analysed on an as received basis.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitability qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Codes
1272362 [Method Blank]						
3400 Total Mercury in Soil by ICP-AES						
Total Mercury	mg/kg	<0.05		< 0.05	Pass	
1272364 [Method Blank]						
3400 Total Mercury in Soil by ICP-AES						
Total Mercury	mg/kg	<0.05		< 0.05	Pass	
1272741 [Method Blank]						
3200 Tot Recov. Metals in Soil by ICP-AES						
Arsenic	mg/kg	<3		< 3	Pass	
Cadmium	mg/kg	<1		< 1	Pass	
Chromium	mg/kg	<2		< 2	Pass	
Copper	mg/kg	<1		< 1	Pass	
Lead	mg/kg	<5		< 5	Pass	
Nickel	mg/kg	<2		< 2	Pass	
Zinc	mg/kg	<2		< 2	Pass	
1272743 [Method Blank]						
3200 Tot Recov. Metals in Soil by ICP-AES						
Arsenic	mg/kg	<3		< 3	Pass	
Cadmium	mg/kg	<1		< 1	Pass	
Chromium	mg/kg	<2		< 2	Pass	
Copper	mg/kg	<1		< 1	Pass	
Lead	mg/kg	<5		< 5	Pass	
Nickel	mg/kg	<2		< 2	Pass	
Zinc	mg/kg	<2		< 2	Pass	
1272363 [Laboratory Control Sample]						
3400 Total Mercury in Soil by ICP-AES						
Total Mercury	mg/kg	0.55	Expected Value	Percent Recovery		
			0.5	109	75-125 %	Pass

Laboratory: EN_METALS

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1272365 [Laboratory Control Sample]							
3400 Total Mercury in Soil by ICP-AES			Expected Value	Percent Recovery			
Total Mercury	mg/kg	0.53	0.5	106	75-125 %	Pass	
1272742 [Laboratory Control Sample]							
3200 Tot Recov. Metals in Soil by ICPAES			Expected Value	Percent Recovery			
Arsenic	mg/kg	51	50.0	101	70-130 %	Pass	
Cadmium	mg/kg	52	50.0	103	70-130 %	Pass	
Chromium	mg/kg	54	50.0	108	70-130 %	Pass	
Copper	mg/kg	52	50.0	103	70-130 %	Pass	
Lead	mg/kg	53	50.0	107	70-130 %	Pass	
Nickel	mg/kg	52	50.0	104	70-130 %	Pass	
Zinc	mg/kg	52	50.0	104	70-130 %	Pass	
1272744 [Laboratory Control Sample]							
3200 Tot Recov. Metals in Soil by ICPAES			Expected Value	Percent Recovery			
Arsenic	mg/kg	51	50.0	101	70-130 %	Pass	
Cadmium	mg/kg	52	50.0	104	70-130 %	Pass	
Chromium	mg/kg	55	50.0	109	70-130 %	Pass	
Copper	mg/kg	52	50.0	104	70-130 %	Pass	
Lead	mg/kg	53	50.0	107	70-130 %	Pass	
Nickel	mg/kg	52	50.0	105	70-130 %	Pass	
Zinc	mg/kg	52	50.0	105	70-130 %	Pass	
1267866 [Duplicate of 1266392]							
3200 Tot Recov. Metals in Soil by ICPAES			Result 2	RPD			
Arsenic	mg/kg	19	18	5	0-30 %	Pass	
Cadmium	mg/kg	<1	<1	<1	0-30 %	Pass	
Chromium	mg/kg	64	63	2	0-30 %	Pass	
Copper	mg/kg	69	56	20	0-30 %	Pass	
Lead	mg/kg	23	19	17	0-30 %	Pass	
Nickel	mg/kg	36	28	25	0-30 %	Pass	
Zinc	mg/kg	55	53	4	0-30 %	Pass	
1267867 [Duplicate of 1266393]							
3200 Tot Recov. Metals in Soil by ICPAES			Result 2	RPD			
Arsenic	mg/kg	14	13	1	0-30 %	Pass	
Cadmium	mg/kg	<1	<1	<1	0-30 %	Pass	
Chromium	mg/kg	51	53	4	0-30 %	Pass	
Copper	mg/kg	50	46	9	0-30 %	Pass	
Lead	mg/kg	16	14	12	0-30 %	Pass	
Nickel	mg/kg	25	22	12	0-30 %	Pass	
Zinc	mg/kg	45	43	4	0-30 %	Pass	
1267868 [Duplicate of 1266394]							
3200 Tot Recov. Metals in Soil by ICPAES			Result 2	RPD			
Arsenic	mg/kg	14	14	3	0-30 %	Pass	
Cadmium	mg/kg	<1	<1	<1	0-30 %	Pass	
Chromium	mg/kg	46	42	9	0-30 %	Pass	
Copper	mg/kg	56	52	6	0-30 %	Pass	
Lead	mg/kg	16	17	8	0-30 %	Pass	
Nickel	mg/kg	25	26	3	0-30 %	Pass	
Zinc	mg/kg	43	42	3	0-30 %	Pass	
1267869 [Duplicate of 1266392]							
3400 Total Mercury in Soil by ICP-AES			Result 2	RPD			
Total Mercury	mg/kg	<0.05	<0.05	<1	0-30 %	Pass	
1267870 [Duplicate of 1266393]							
3400 Total Mercury in Soil by ICP-AES			Result 2	RPD			
Total Mercury	mg/kg	<0.05	<0.05	<1	0-30 %	Pass	
1267871 [Duplicate of 1266394]							
3400 Total Mercury in Soil by ICP-AES			Result 2	RPD			
Total Mercury	mg/kg	<0.05	<0.05	<1	0-30 %	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1267878 [Spike of 1266395]							
3200 Tot Recov. Metals in Soil by ICPAES			Spike Value	Percent Recovery			
Arsenic	mg/kg	68	50.0	103	70-130 %	Pass	
Cadmium	mg/kg	48	50.0	96	70-130 %	Pass	
Chromium	mg/kg	110	50.0	100	70-130 %	Pass	
Copper	mg/kg	110	50.0	123	70-130 %	Pass	
Lead	mg/kg	67	50.0	103	70-130 %	Pass	
Nickel	mg/kg	81	50.0	111	70-130 %	Pass	
Zinc	mg/kg	97	50.0	113	70-130 %	Pass	
1267879 [Spike of 1266396]							
3200 Tot Recov. Metals in Soil by ICPAES			Spike Value	Percent Recovery			
Arsenic	mg/kg	69	50.0	101	70-130 %	Pass	
Cadmium	mg/kg	48	50.0	96	70-130 %	Pass	
Chromium	mg/kg	120	50.0	115	70-130 %	Pass	
Copper	mg/kg	110	50.0	128	70-130 %	Pass	
Lead	mg/kg	71	50.0	111	70-130 %	Pass	
Nickel	mg/kg	89	50.0	126	70-130 %	Pass	
Zinc	mg/kg	110	50.0	134	70-130 %	Fail	Q06
1267880 [Spike of 1266395]							
3400 Total Mercury in Soil by ICP-AES			Spike Value	Percent Recovery			
Total Mercury	mg/kg	0.59	0.5	115	75-125 %	Pass	
1267881 [Spike of 1266396]							
3400 Total Mercury in Soil by ICP-AES			Spike Value	Percent Recovery			
Total Mercury	mg/kg	0.58	0.5	113	75-125 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
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Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Codes
1272226 [Method Blank]						
2200 OC Pesticides in Soil by GC-MS						
a-BHC	mg/kg	<0.5		< 0.5	Pass	
a-Chlordane	mg/kg	<0.5		< 0.5	Pass	
a-Endosulfan	mg/kg	<0.5		< 0.5	Pass	
Aldrin	mg/kg	<0.5		< 0.5	Pass	
b-BHC	mg/kg	<0.5		< 0.5	Pass	
b-Endosulfan	mg/kg	<0.5		< 0.5	Pass	
d-BHC	mg/kg	<0.5		< 0.5	Pass	
DDD	mg/kg	<0.5		< 0.5	Pass	
DDE	mg/kg	<0.5		< 0.5	Pass	
DDT	mg/kg	<0.5		< 0.5	Pass	
Dieldrin	mg/kg	<0.5		< 0.5	Pass	
Endosulfan sulfate	mg/kg	<0.5		< 0.5	Pass	
Endrin	mg/kg	<0.5		< 0.5	Pass	
Endrin Aldehyde	mg/kg	<0.5		< 0.5	Pass	
g-BHC	mg/kg	<0.5		< 0.5	Pass	
g-Chlordane	mg/kg	<0.5		< 0.5	Pass	
Heptachlor	mg/kg	<0.5		< 0.5	Pass	
Heptachlor epoxide	mg/kg	<0.5		< 0.5	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5		< 0.5	Pass	
Methoxychlor	mg/kg	<0.5		< 0.5	Pass	
Oxychlordane	mg/kg	<0.5		< 0.5	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	98		70-130 %	Pass	
2400 OP Pesticides in Soil by GC						
Chlorpyrifos	mg/kg	<0.5		< 0.5	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5		< 0.5	Pass	
Diazinon	mg/kg	<0.5		< 0.5	Pass	
Ethion	mg/kg	<0.5		< 0.5	Pass	
Fenitrothion	mg/kg	<0.5		< 0.5	Pass	
Fenthion	mg/kg	<0.5		< 0.5	Pass	
Malathion	mg/kg	<0.5		< 0.5	Pass	
Methyl Parathion	mg/kg	<0.5		< 0.5	Pass	
Parathion	mg/kg	<0.5		< 0.5	Pass	
Ronnel	mg/kg	<0.5		< 0.5	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	82		70-130 %	Pass	

Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Codes
1272230 [Method Blank]						
2200 OC Pesticides in Soil by GC-MS						
a-BHC	mg/kg	<0.5		< 0.5	Pass	
a-Chlordane	mg/kg	<0.5		< 0.5	Pass	
a-Endosulfan	mg/kg	<0.5		< 0.5	Pass	
Aldrin	mg/kg	<0.5		< 0.5	Pass	
b-BHC	mg/kg	<0.5		< 0.5	Pass	
b-Endosulfan	mg/kg	<0.5		< 0.5	Pass	
d-BHC	mg/kg	<0.5		< 0.5	Pass	
DDD	mg/kg	<0.5		< 0.5	Pass	
DDE	mg/kg	<0.5		< 0.5	Pass	
DDT	mg/kg	<0.5		< 0.5	Pass	
Dieldrin	mg/kg	<0.5		< 0.5	Pass	
Endosulfan sulfate	mg/kg	<0.5		< 0.5	Pass	
Endrin	mg/kg	<0.5		< 0.5	Pass	
Endrin Aldehyde	mg/kg	<0.5		< 0.5	Pass	
g-BHC	mg/kg	<0.5		< 0.5	Pass	
g-Chlordane	mg/kg	<0.5		< 0.5	Pass	
Heptachlor	mg/kg	<0.5		< 0.5	Pass	
Heptachlor epoxide	mg/kg	<0.5		< 0.5	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5		< 0.5	Pass	
Methoxychlor	mg/kg	<0.5		< 0.5	Pass	
Oxychlordane	mg/kg	<0.5		< 0.5	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	109		70-130 %	Pass	
2400 OP Pesticides in Soil by GC						
Chlorpyrifos	mg/kg	<0.5		< 0.5	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5		< 0.5	Pass	
Diazinon	mg/kg	<0.5		< 0.5	Pass	
Ethion	mg/kg	<0.5		< 0.5	Pass	
Fenitrothion	mg/kg	<0.5		< 0.5	Pass	
Fenthion	mg/kg	<0.5		< 0.5	Pass	
Malathion	mg/kg	<0.5		< 0.5	Pass	
Methyl Parathion	mg/kg	<0.5		< 0.5	Pass	
Parathion	mg/kg	<0.5		< 0.5	Pass	
Ronnel	mg/kg	<0.5		< 0.5	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	88		70-130 %	Pass	

Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1272229 [Laboratory Control Sample]							
2200 OC Pesticides in Soil by GC-MS			Expected Value	Percent Recovery			
a-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
a-Chlordane	mg/kg	2.0	2.0	99	70-130 %	Pass	
a-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
Aldrin	mg/kg	2.0	2.0	102	70-130 %	Pass	
b-BHC	mg/kg	1.9	2.0	97	70-130 %	Pass	
b-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
d-BHC	mg/kg	1.9	2.0	95	70-130 %	Pass	
DDD	mg/kg	1.9	2.0	97	70-130 %	Pass	
DDE	mg/kg	2.0	2.0	100	70-130 %	Pass	
DDT	mg/kg	1.7	2.0	87	70-130 %	Pass	
Dieldrin	mg/kg	1.8	2.0	92	70-130 %	Pass	
Endosulfan sulfate	mg/kg	1.9	2.0	94	70-130 %	Pass	
Endrin	mg/kg	1.9	2.0	96	70-130 %	Pass	
Endrin Aldehyde	mg/kg	1.7	2.0	86	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
g-Chlordane	mg/kg	1.9	2.0	96	70-130 %	Pass	
Heptachlor	mg/kg	1.8	2.0	92	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.8	2.0	90	70-130 %	Pass	
Methoxychlor	mg/kg	1.7	2.0	84	70-130 %	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	97			70-130 %	Pass	
2400 OP Pesticides in Soil by GC			Expected Value	Percent Recovery			
Chlorpyrifos	mg/kg	1.8	2.0	92	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.0	2.0	100	70-130 %	Pass	
Diazinon	mg/kg	1.9	2.0	97	70-130 %	Pass	
Ethion	mg/kg	1.8	2.0	91	70-130 %	Pass	
Fenitrothion	mg/kg	1.8	2.0	90	70-130 %	Pass	
Fenthion	mg/kg	2.1	2.0	107	70-130 %	Pass	
Malathion	mg/kg	1.7	2.0	85	70-130 %	Pass	
Methyl Parathion	mg/kg	1.7	2.0	86	70-130 %	Pass	
Parathion	mg/kg	1.9	2.0	93	70-130 %	Pass	
Ronnel	mg/kg	2.0	2.0	100	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	91			70-130 %	Pass	

Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1272232 [Laboratory Control Sample]							
2200 OC Pesticides in Soil by GC-MS			Expected Value	Percent Recovery			
a-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
a-Chlordane	mg/kg	2.0	2.0	98	70-130 %	Pass	
a-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
Aldrin	mg/kg	2.0	2.0	99	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	98	70-130 %	Pass	
b-Endosulfan	mg/kg	2.0	2.0	98	70-130 %	Pass	
d-BHC	mg/kg	1.9	2.0	97	70-130 %	Pass	
DDD	mg/kg	1.9	2.0	97	70-130 %	Pass	
DDE	mg/kg	2.0	2.0	99	70-130 %	Pass	
DDT	mg/kg	1.8	2.0	92	70-130 %	Pass	
Dieldrin	mg/kg	1.8	2.0	88	70-130 %	Pass	
Endosulfan sulfate	mg/kg	1.9	2.0	96	70-130 %	Pass	
Endrin	mg/kg	1.8	2.0	90	70-130 %	Pass	
Endrin Aldehyde	mg/kg	1.9	2.0	95	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	99	70-130 %	Pass	
g-Chlordane	mg/kg	1.9	2.0	97	70-130 %	Pass	
Heptachlor	mg/kg	1.9	2.0	95	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.8	2.0	92	70-130 %	Pass	
Methoxychlor	mg/kg	1.7	2.0	86	70-130 %	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	100			70-130 %	Pass	
2400 OP Pesticides in Soil by GC			Expected Value	Percent Recovery			
Chlorpyrifos	mg/kg	1.9	2.0	96	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.1	2.0	104	70-130 %	Pass	
Diazinon	mg/kg	2.0	2.0	100	70-130 %	Pass	
Ethion	mg/kg	1.8	2.0	92	70-130 %	Pass	
Fenitrothion	mg/kg	1.9	2.0	93	70-130 %	Pass	
Fenthion	mg/kg	2.2	2.0	109	70-130 %	Pass	
Malathion	mg/kg	1.7	2.0	87	70-130 %	Pass	
Methyl Parathion	mg/kg	1.8	2.0	88	70-130 %	Pass	
Parathion	mg/kg	1.9	2.0	97	70-130 %	Pass	
Ronnel	mg/kg	2.0	2.0	102	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	92			70-130 %	Pass	
1267872 [Duplicate of 1266392]							
2200 OC Pesticides in Soil by GC-MS			Result 2	RPD			
a-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
d-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDD	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDE	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDT	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dieldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endosulfan sulfate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin Aldehyde	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor epoxide	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methoxychlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Oxychlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	101			70-130 %	Pass	

Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1267873 [Duplicate of 1266393]							
2200 OC Pesticides in Soil by GC-MS			Result 2	RPD			
a-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
d-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDD	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDE	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDT	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dieldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endosulfan sulfate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin Aldehyde	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor epoxide	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methoxychlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Oxychlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	98			70-130 %	Pass	
1267874 [Duplicate of 1266394]							
2200 OC Pesticides in Soil by GC-MS			Result 2	RPD			
a-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
d-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDD	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDE	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDT	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dieldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endosulfan sulfate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin Aldehyde	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor epoxide	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methoxychlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Oxychlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	99			70-130 %	Pass	

Laboratory: EN_SVOC

Sample, Test, Result Reference	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Codes
1267875 [Duplicate of 1266392]							
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Diazinon	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ethion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenitrothion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenthion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Malathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methyl Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ronnel	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	94			70-130 %	Pass	
1267876 [Duplicate of 1266393]							
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Diazinon	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ethion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenitrothion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenthion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Malathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methyl Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ronnel	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	87			70-130 %	Pass	
1267877 [Duplicate of 1266394]							
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Diazinon	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ethion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenitrothion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenthion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Malathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methyl Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ronnel	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	84			70-130 %	Pass	

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Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1267882 [Spike of 1266395]							
2200 OC Pesticides in Soil by GC-MS			Spike Value	Percent Recovery			
a-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
a-Chlordane	mg/kg	2.0	2.0	100	70-130 %	Pass	
a-Endosulfan	mg/kg	2.0	2.0	102	70-130 %	Pass	
Aldrin	mg/kg	2.0	2.0	98	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
b-Endosulfan	mg/kg	2.1	2.0	103	70-130 %	Pass	
d-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
DDD	mg/kg	2.0	2.0	99	70-130 %	Pass	
DDE	mg/kg	2.2	2.0	108	70-130 %	Pass	
DDT	mg/kg	1.9	2.0	94	70-130 %	Pass	
Dieldrin	mg/kg	1.9	2.0	94	70-130 %	Pass	
Endosulfan sulfate	mg/kg	2.0	2.0	102	70-130 %	Pass	
Endrin	mg/kg	1.9	2.0	94	70-130 %	Pass	
Endrin Aldehyde	mg/kg	1.8	2.0	88	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
g-Chlordane	mg/kg	2.0	2.0	101	70-130 %	Pass	
Heptachlor	mg/kg	1.9	2.0	96	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.8	2.0	89	70-130 %	Pass	
Methoxychlor	mg/kg	1.9	2.0	93	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	100			70-130 %	Pass	
1267883 [Spike of 1266396]							
2200 OC Pesticides in Soil by GC-MS			Spike Value	Percent Recovery			
a-BHC	mg/kg	2.0	2.0	101	70-130 %	Pass	
a-Chlordane	mg/kg	1.9	2.0	97	70-130 %	Pass	
a-Endosulfan	mg/kg	2.0	2.0	98	70-130 %	Pass	
Aldrin	mg/kg	2.0	2.0	100	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	98	70-130 %	Pass	
b-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
d-BHC	mg/kg	1.9	2.0	97	70-130 %	Pass	
DDD	mg/kg	1.9	2.0	94	70-130 %	Pass	
DDE	mg/kg	2.1	2.0	105	70-130 %	Pass	
DDT	mg/kg	1.8	2.0	89	70-130 %	Pass	
Dieldrin	mg/kg	1.8	2.0	92	70-130 %	Pass	
Endosulfan sulfate	mg/kg	1.8	2.0	92	70-130 %	Pass	
Endrin	mg/kg	1.6	2.0	78	70-130 %	Pass	
Endrin Aldehyde	mg/kg	1.7	2.0	86	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
g-Chlordane	mg/kg	2.0	2.0	100	70-130 %	Pass	
Heptachlor	mg/kg	1.9	2.0	94	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.8	2.0	89	70-130 %	Pass	
Methoxychlor	mg/kg	1.7	2.0	86	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2,4,5,6-tetrachloro-m-xylene-SURROGATE	%	96			70-130 %	Pass	
1267884 [Spike of 1266395]							
2400 OP Pesticides in Soil by GC			Spike Value	Percent Recovery			
Chlorpyrifos	mg/kg	2.0	2.0	100	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.0	2.0	101	70-130 %	Pass	
Diazinon	mg/kg	2.0	2.0	100	70-130 %	Pass	
Ethion	mg/kg	1.9	2.0	97	70-130 %	Pass	
Fenitrothion	mg/kg	1.9	2.0	95	70-130 %	Pass	
Fenthion	mg/kg	2.2	2.0	111	70-130 %	Pass	
Malathion	mg/kg	1.9	2.0	96	70-130 %	Pass	
Methyl Parathion	mg/kg	1.8	2.0	90	70-130 %	Pass	
Parathion	mg/kg	2.0	2.0	101	70-130 %	Pass	
Ronnel	mg/kg	2.1	2.0	103	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	100			70-130 %	Pass	

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Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1267885 [Spike of 1266396]							
2400 OP Pesticides in Soil by GC			Spike Value	Percent Recovery			
Chlorpyrifos	mg/kg	1.8	2.0	92	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.0	2.0	101	70-130 %	Pass	
Diazinon	mg/kg	1.9	2.0	95	70-130 %	Pass	
Ethion	mg/kg	1.8	2.0	91	70-130 %	Pass	
Fenitrothion	mg/kg	1.8	2.0	89	70-130 %	Pass	
Fenthion	mg/kg	2.1	2.0	105	70-130 %	Pass	
Malathion	mg/kg	1.8	2.0	88	70-130 %	Pass	
Methyl Parathion	mg/kg	1.8	2.0	88	70-130 %	Pass	
Parathion	mg/kg	1.9	2.0	94	70-130 %	Pass	
Ronnel	mg/kg	2.0	2.0	101	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	93			70-130 %	Pass	

Project Comments

Comments Samples - CI 03-2.5, CI 03-2.5 dup, CI 05-2.0, CI 05-2.0 dup, Jars are half full with headspace. CI 04-1.0 Jar Cracked in esky.

Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	No
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q06	The matrix spike recovery is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause.

Authorised By

Elizabeth Button	Senior Analyst - Environmental	Accreditation Number: 14356
Michael Mowle	Team Leader - Environmental	Accreditation Number: 14356

Laboratory Manager

Michael Mowle	Team Leader - Environmental
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Final Report

- Indicates Not Requested * Indicates NATA accreditation does not cover the performance of this service

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The samples were not collected by Laboratory staff.