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PROJECT

**STAGE 1 AND STAGE 2
SITE INVESTIGATION**

**LOT 4 ON RP817122, HODGES ROAD
SHOAL POINT, QUEENSLAND**

**+GILBERT
SUTHERLAND**

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**PREPARED FOR
SHOAL POINT BAY DEVELOPMENTS PTY LTD**

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SYNOPSIS This report describes the methodology and results of a Stage 1 and Stage 2 Site Investigation into potential soil and groundwater contamination at Lot 4 on RP817122, Hodges Road, Shoal Point, Queensland.

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SUMMARY

Shoal Point Bay Developments has lodged a Reconfiguration of Lot (ROL) application for the proposed residential development of a site located at Hodges Road, Shoal Point, Mackay. The subject site is described as Lot 4 on RP817122 and is listed on the Environmental Management Register (EMR) for *'Livestock Dip and/or Spray Race Operations'*.

Shoal Point Bay Development Pty Ltd (Shoal Point Developments) commissioned Gilbert & Sutherland Pty Ltd (G&S) to prepare a Stage 1 and Stage 2 Site Investigation report for the site in response to the Department of Environment and Resource Management's (DERM's) preliminary approval for the Reconfiguration of Lot application dated 5th August, 2010. This Stage 1 & Stage 2 Site Investigation was undertaken to supplement previous G&S investigations undertaken in 2004.

A total of 55 soil boreholes were drilled across the site with representative soil samples retrieved and analysed to determine the nature, distribution and concentration of contaminants of potential concern (COPC). A total of ten (10) groundwater piezometers were installed to facilitate groundwater sampling, characterisation and laboratory analysis in order to identify and delineate any groundwater contamination associated with the former use of the livestock dip.

The key findings of the investigation, in terms of contamination relative to the Health Investigation Levels (HILs) for standard residential development and the Environmental Investigation Levels (EILs), were as follows:

- No COPCs exceeding the HILs were discovered in surface (0-0.15m) or deeper (0.15-3.0m) soils across the entirety of the site.
- No COPCs exceeding the EILs were discovered in shallow soils across the site with the exception of borehole BHA18/0-0.15m which contained Trivalent Chromium (Cr III) (64mg/kg) and Nickel (72mg/kg), each marginally exceeding the respective EILs of 50mg/kg and 60mg/kg. BHA18 was located near a former dwelling site, within the proposed foreshore park area.

- Arsenic concentrations exceeding the Groundwater Investigation Levels (GILs) for the protection of aquatic ecosystems (Marine Ecosystems), drinking water and for irrigation were identified in groundwater samples extracted from GW4. The presence of arsenic at this location is likely to be associated with historical livestock dipping activities. The groundwater contamination has been delineated and is limited to the foreshore park area. It does not represent a constraint to the proposed residential development of other parts of the site.
- A risk assessment was undertaken to consider the risk posed by the contaminated groundwater to users of the proposed foreshore park and recreational area. The risk assessment concluded that providing the extraction of groundwater was prevented under the provisions of an approved site management plan, the risk to park users would be negligible.

At the time of preparing this report, no further site contamination constraints were evident. Accordingly, Gilbert & Sutherland considers the site suitable for the proposed residential use and recommends that upon subdivision of the park area, the remainder of the site be removed from the Environmental Management Register (EMR). The park area should remain on the EMR and be subject to management in accordance with an approved SMP.

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10527.1.6	Broad-acre borehole sample locations and cattle holding yard
10527.1.7	Registered groundwater bore locations
10527.1.8	Approximate extent of arsenic contamination in groundwater and groundwater contour plan

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1. Introduction

Shoal Point Bay Development Pty Ltd commissioned Gilbert & Sutherland Pty Ltd (G&S) to carry out a Stage 1 and Stage 2 Site Investigation for Lot 4 on RP817122, Shoal Point, Queensland ('the site'). The Site Investigation was undertaken to supplement previous investigations undertaken by G&S in 2004 and specifically to address the Department of Environment and Resource Management's (DERM's) preliminary approval for a Reconfiguration of Lot application dated 5th August, 2010.

The site location is shown on Drawing No. 10527.1.1.

1.1. Background

G&S completed a Stage 2 Site Investigation in conjunction with an Acid Sulfate Soil Assessment in November 2004¹ ('the 2004 Site Investigation'). This investigation involved drilling and sampling for acid sulfate soils across the low lying portions of the site and a detailed investigation of soils surrounding the cattle tick dip. Twenty-two (22) boreholes were drilled for the purpose of the site investigation and a single groundwater piezometer was installed immediately adjacent to the dip to facilitate sampling and assessment of groundwater quality.

The soil and groundwater was assessed for arsenic, lead and organochlorine and organophosphorus pesticides.

Notably, none of the selected contaminants were identified in concentrations exceeding the Health Based Investigation Levels (HILs), which were the assessment criteria applied for the investigation.

Minor concentrations of arsenic (maximum of 8mg/kg), lead (max. of 79mg/kg) and DDT & derivatives (maximum 8.07mg/kg) were encountered in the surface soils.

Arsenic was present in the groundwater beneath the dip at a concentration of 0.046mg/L.

The 2004 Site Investigation report was submitted to support a proposed Material Change of Use (MCU) application and the Environmental Protection Agency (EPA, now DERM) issued a Request for Further Information (RFI) dated 25 January, 2005.

G&S proposed further works on site to address the information request, however the works were not commissioned and a response to the information request was provided, committing to undertaking further investigations as a condition of approval. The MCU application was refused for a number of reasons and was appealed in the Planning and Environment Court of Queensland. The appeal was upheld and the Consent Order contained an amended concurrence response from DERM with the following condition:

"Lot 4 on RP817122 shall not be used for any residential use until that land is removed from the Environmental Management Register or Contaminated Land Register kept under the Environmental Protection Act 1994."

A Reconfiguration of Lot application was submitted in early 2010 and ultimately a preliminary approval was granted, as DERM was not satisfied that sufficient information has been provided to allow the assessment of the application.

This Site Investigation Report aims to address the preliminary approval and the 25 January 2005 information request by providing sufficient information to facilitate DERM's assessment of the site.

In preparing this current report, G&S relies on the data collected during the 2004 Site Investigation which, when supplemented with the data collected for this investigation, contributes to a detailed examination of the status of contamination at the site.

1.2. Proposed redevelopment

The proposed redevelopment involves the reconfiguration of one lot (Lot 4 on RP817122) into:

- 302 residential lots
- 9 park/open space/conservation lots, and
- one balance lot.

¹ Gilbert & Sutherland. November 2004. *Stage 2 - Detailed Site Contamination Investigation, Acid Sulfate Soil Assessment and Preliminary Water Quality Monitoring Report. Lot 4 RP817122 Shoal Point, Mackay, Queensland.* Prepared for Sunland Group Limited.

SCALE
SCALE AS SHOWN

ORIENTATION
NORTH

LEGEND
Site Boundary

SOURCES
Image Source: Google Earth Pro 2010

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PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
SITE LOCATION

DATE
17/11/2010
SCALE
SCALE AS SHOWN

PROJECT NO
10527

DRAWING NO
10527.1.1

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REVISION

SCALE
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ORIENTATION
NORTH

LEGEND

- Single Residential
- Medium Density Residential
- High Density Residential
- Parks / Open Space
- Conservation

SOURCES

Base plan supplied by WS Group



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AGRICULTURE WATER ENVIRONMENT

File A

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
SUBDIVISION PLAN

DATE 19/11/2010	DRAWN KT
SCALE 1:4 000	CHECKED
PROJECT NO 10527	DRAWING NO 10527.1.0
REVISION	

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Release

The residential lots will be developed for urban residential, medium density residential and high density residential use. The proposed lot configuration is illustrated on Drawing No. 10527.1.0.

1.3. Scope of works

The scope of work undertaken for this Site Investigation involved:

- further site investigation
- broadening the investigation to include all potentially contaminating land-uses on and adjacent to the site
- application of a broader suite of contaminants of potential concern (COPC), and
- a more detailed investigation of the groundwater characteristics in the vicinity of the dip.

Detailed descriptions of these works are included in Section 4 – Methodology. A summary of the overall scope of work undertaken by G&S is as follows:

- A review of previous site investigations, information requests and information request responses.
- A review of relevant available aerial photographs, topographic maps, land title records and licences.
- A detailed site inspection.
- Interviews with current and former tenants of the site.
- Drilling of a total of 55 boreholes across the site to a maximum depth of 3m below Near Surface Level (NSL).
- Installation of ten (10) piezometers in the immediate vicinity and near to the livestock dip.
- Quantitative laboratory analysis of soil samples for the presence of contaminants.
- Quantitative laboratory analysis of groundwater samples.
- Preparation of a Stage 1 and Stage 2 Site Investigation report.

1.4. Aims and objectives

The purpose of the site investigations was to:

- identify past and present, potentially contaminating land use activities,

- determine the location and type of potential contaminants,
- delineate the extent of any identified contamination,
- provide an assessment as to the suitability of the site for its intended use, and
- provide recommendations regarding site management and further investigations (if required).

Ultimately, a suitability statement is required to convert the preliminary approval to a full approval. The investigations undertaken are consistent with a Stage 2 Site Investigation.

1.5. Standards and guidelines

This Stage 1 and Stage 2 Site Investigation was undertaken in accordance with the following standards and guidelines:

- Queensland Department of Environment (May 1998) *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*
- Australian Standard 4482.1 – 2005 *Guide to the sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and semi-volatile compounds*
- National Environment Protection Measure (NEPM) (1999) *Guideline on Risk Based Assessment of Groundwater Contamination - Schedule B (6)*
- National Environment Protection Measure (NEPM) (1999) *Investigation Levels for Soil and Groundwater - Schedule B(1)*
- Environmental Protection Agency (EPA) NSW (1994), *Guidelines for Assessing Service Station Sites*, and
- NSW Agriculture (1996) *Assessment and Cleanup of Cattle Tick Dip Sites for Residential Purposes*.

2. Site description

2.1. Property description

The current land titles, registered plans and survey maps for the property were obtained from the Queensland Department of Environment and Resource Management (DERM).

A summary of the relevant property details is provided in Table 2.1.1.

The current land titles, registered plans and survey maps for the property are presented within Appendix 2.

Table 2.1.1 Summary of relevant property details

Description	Detail
Land title	Lot 4 RP817122 County of Carlisle, Parish of Bassett and Local Authority of Mackay.
Location	Hodges Road, Shoal Point, Queensland.
Area	96.78 hectares
Registered owners	Arabesque Pty Ltd tenant in common with Jamie Pickering Pty Ltd
Local Government	Mackay City Council
Current land zoning	Rural
Environmental Management Register & Contaminated Land Register	Lot 4 RP817122 is included on the Environmental Management Register for : LIVESTOCK DIP OR SPRAY RACE OPERATIONS – operating a livestock dip or spray race operation. Lot 4 RP817122 is not included on the Contaminated Land Register.

2.2. Mackay Regional Council environmental approvals/licensing search

Mackay Regional Council (MRC) was contacted to obtain records of any Environmentally Relevant Activities devolved to Council or of historical or current environmental approvals or licences. A formal environmental requisition enquiry was made.

A search was conducted by an Environmental Officer and it was confirmed that no businesses registered with MRC conducted Environmentally Relevant Activities at the site and that there were no records of any breaches of the General Environmental Duty at the site. Correspondence detailing the results of MRC's search is attached within Appendix 3.

2.3. Environmental Management Register (EMR) and Contaminated Land Register (CLR) searches

A search of the Contaminated Land (CLR) and Environmental Management Register (EMR) was conducted in conjunction with the Stage 1 site history investigation.

Lot 4 on RP817122 is listed on the EMR for *Livestock Dip or Spray Race Operations*. The lot is not on the Contaminated Land Register. The EMR site identification number is 15618. A copy of the search result is attached in Appendix 4.

2.4. Geology and hydrogeology

2.4.1. Geology

A review of the 1:250,000 Geological Series Sheet SF 55-8 (Mackay) map indicates that the site is underlain by Late Devonian to Early Carboniferous rocks of the Campwyn Beds and comprise of intermediate, basic and acid volcanics, siltstone, sandstone, conglomerate and limestone.

Drilling works undertaken throughout the site during this and previous investigations, confirmed that characteristic Campwyn Bed geology underlays the higher relief features of the site, whilst the lower lying areas of the site to the south and west are underlain at shallow depths by Quaternary alluvial and estuarine sands, silts and clays. The Campwyn Beds are likely to underpin these sedimentary strata at depth.

The beach-front northern portion of the site is underlain by Holocene beach sands, fore-dune deposits and estuarine sediments.

Materials intercepted in the 2004 Site Investigation included:

- Fill² (sand and silty sand);
- Alluvium (sand, silty sand, clayey sand and sandy clay);
- Residual (formed in-situ from the weathering of the parent geology and on this site consisting of sandy and gravely light to heavy clays); and
- Rock (extremely weathered basalt).

Detailed soil borelogs are attached in Appendix 5.

2.4.2. Hydrogeology

Groundwater was intercepted in all of the constructed groundwater piezometers at depths ranging from 1.58m Australian Height Datum (AHD) to 1.89m AHD. It was determined that the groundwater displayed a general mounding effect in the vicinity of the former livestock dip and shed.

2.4.3. Bore search results

A groundwater bore search request was submitted to and performed by DERM for the area surrounding the site. The search was performed for a 2km radius for the purpose of this assessment. There were 99 registered bores within 2km of the site. The search data is summarised on Drawing No. 10527.1.7.

The majority of the registered bores are constructed in the unconfined coastal dune aquifer and have good quality to potable quality groundwater available. Yields are variable and range between 0.2L/sec and 1.5L/sec.

The nearest bore to the site is a monitoring well registered to DERM, which is approximately 200m to the east of the eastern site boundary. This is also the closest bore to the former location of the dip, (separation distance is approximately 1.2km).

The locations of the registered bores are shown in Drawing No. 10527.1.7.

2.4.4. Site investigations

Gilbert & Sutherland prepared a *Stage 2 - Detailed Site Contamination Investigation, Acid Sulfate Soil Assessment and Preliminary Water Quality Monitoring Report, Lot 4 RP817122 Shoal Point, Mackay, Queensland* completed in November 2004, (the 2004 Site Investigation).

The 2004 Site Investigation consisted of a soil and limited groundwater sampling program. As the title suggests, the 2004 investigation was multi-purpose and combined an acid sulfate soil and surface water quality monitoring assessment with the contamination investigation. The brief for the 2004 Site Investigation was to consider only the livestock dip, which was the reason for the site's listing on the EMR. The results from soil analysis indicated that contaminants of potential concern (COPC) were not present in concentrations exceeding the adopted assessment criteria, which were the HIL's for standard residential development. COPC within the groundwater sample and the dip bath liquid were not present at concentrations exceeding the Groundwater Investigation Levels (GIL's) for irrigation, however, the limits of reporting were too high to allow an assessment against the GIL's for the protection of freshwater aquatic ecosystems.

2.5. Soil investigation

The soils encountered in the areas investigated on this site were predominantly sand, silty sands and sandy clays. However, marine clays and estuarine muds were encountered in various parts of the site.

Highly disturbed soils were evident along the southern portion of the site where grazing had been concentrated. Soils encountered within these grazed regions were typically characterised by organic rich top-soils underlain by sandy clays which were in turn underlain by sands.

2.6. Topography and drainage

The site elevation ranges from <3m AHD to 30m AHD. The northern foreshore portion of the site is low lying (<5m AHD) and consists of moderately to well drained truncated beach ridges. The southern portions of the site are generally low-lying (<5m

² Note that the fill referred to in the 2004 Site Investigation originated from the site and resulted from the bulldozing of the dunes into the adjacent swales to level the site.

AHD) and are poorly to moderately drained. The elevated peaks separating the north and south portions of the site range from 10m to 30m AHD and are moderately to well drained. Much of the surface water runoff would drain into an estuary located to the west of the site.

2.7. Vegetation

The site has been extensively cleared of native vegetation to facilitate agricultural grazing, primarily by cattle. Small clusters of trees (remnant and regrowth species) remain within the north-east corner of the site, on some of the elevated peaks and around the boundaries between the low-lying and gently inclined areas of the site. Short grass cover is abundant across most areas of the site. The southern and western boundaries of the site are bound by mangroves.

2.8. Current land use

At the time of the site investigation, the site was being used primarily for livestock grazing. Two of the three houses and three of four sheds that were present during the 2004 investigation had been demolished. The livestock dip, which was immediately adjacent to one of the sheds, had also been removed. It is understood that these works were undertaken in accordance with an operational works approval for the development of the site.

We are informed that structures containing asbestos were demolished and removed from the site by appropriately licensed contractors, in accordance with the *National Code of Practice for the Safe Removal of Asbestos*.

The sheds were likely to have been used for the storage of vehicles, agricultural machinery and livestock feeds.

The former livestock dip on the property was located along the northern wall of one of the large storage sheds. Drawing No. 10527.1.4 shows the former shed and dip location. The property is recorded on the Environmental Management Register for spray race or livestock dip use.

During this site investigation none of the original sheds nor the original homestead (refer to Plate 1) were present. Information provided by the site occupants, BBCG Construction, indicated all



Plate 1 shows the footprint of the shed which housed the livestock dip along its northern wall.

buildings removed contained no chemicals, oil drums, fuel storage and that no odorous or stained soil material was observed under the slabs or footings of the removed buildings.

The northern portion of the site has been extensively modified with earthworks having been undertaken historically to level the undulating ridge-swale topography that would naturally occur on a site in this environment. A runway for light aircraft is still present in the north west of the site. A small herd of cattle was witnessed grazing in the southern portion of the site during this investigation (refer Plate 2).



Plate 2 the southern most edge of the site boundary and the small herd of cattle currently grazing within this area.

A collapsed caravan and associated lean-to roof structure was witnessed in the north western portion of the site. No fuel stores or gas bottles were witnessed within or immediately surrounding the caravan and lean-to structure.

A cattle holding yard and pen structure was witnessed in the southern portion of the site. Two small cattle crushes and a loading facility were a part of these small pens. The location and layout of this structure is shown on Drawing No. 10527.1.5 and in Plate 3.



Plate 3 shows the small cattle holding yard in the southern portion of the Lot. Two small cattle crushes and a loading ramp exist within this yard.



Plate 4 shows the storage area along the northern foreshore of the site near the site entrance. Culvert boxes, tyres and stormwater valves are visible.



Plate 5 shows stormwater pipes and orange conduits stored adjacent to the existing house at the entrance to the site.



Plate 6 shows the small piles of domestic wastes including household items.

An area adjacent to the house located at the entrance to the site, along Hodges Road, is used for the storage of stormwater drainage pipes and culvert boxes along with small piles of domestic waste and various sized excavator buckets. Large piles of PVC water pipes and conduits lay scattered between the stormwater pipes and culverts. No oil drums, fuel stores, batteries or mechanical fluids were witnessed within this storage area (depicted in plates 4, 5 and 6).

2.9. Surrounding land use

The surrounding land use is summarised as follows:

- Bordering the site directly to the north is the beachfront to Sand Bay and the Coral Sea.
- To the immediate west of the site is Reliance Creek with mangrove communities bordering the entire western boundary.
- The neighboring property to the east of the site is being used for the storage of plant and equipment which is being used for the development of residential lots to the south-east of the site. Numerous residential properties lie beyond this neighboring property, to the east of the southern portion of the site.

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3. Site history

3.1. Land title search

Copies of historical land title certificates, including the deed of grant of the subject lot, were obtained from the Department of Environment and Resource Management (DERM). These documents are summarised in Table 3.1.1 and copies are shown in Appendix 2.

Table 3.1.1 Summary of title search for Lot 4 RP817122

Year acquired	Registered owners	Site use
2006	Arabesque Pty Ltd & Jamie Pickering Pty Ltd (trustee)	Grazing/ Proposed subdivision
1994	Arabesque Pty Ltd	Grazing
1959	sch4p4(6) Personal information	Agricultural practices
1924		Agricultural practices
1921		Agricultural practices
1889*		

* Deed of Grant of Land

The title documents do not suggest that the site has been used for anything other than agriculture. The site has been owned by individuals until 1994 when it was purchased by Arabesque Pty Ltd and Arabesque have maintained agricultural use of the site, whilst attempting to rezone, reconfigure and develop the site .

3.2. Aerial photograph review

Aerial photographs of the site taken between 1953 and 2009 were obtained from Queensland DERM. Satellite imagery provided by Nearmap (referencing images taken in July 2010) was also reviewed. Details of the images used are provided in Table 3.2.1, with copies of the images provided in Appendix 6.

Aerial photographs were used to help establish the history of settlement and use of the site and to

Table 3.2.1 Summary of aerial photograph details obtained for Shoal Point, Mackay.

Date	Title	Run No.	Frame No.	Height ASL (m)
01/09/10	Nearmap	--	--	--
2009	Mackay	74	2433	2450
2009	Mackay	74	2465	2450
09/06/98	Mackay	1	187-198	4310
17/05/91	Mackay	1	202-212	4401
14/09/86	Mackay	1	12	4060
04/08/62	Mackay	--	107	12000ft
12/08/1953	Mackay	8	49484	3,962 (13,000ft)

identify structures or features for further investigation. A summary of the information indicated by the photographs is provided below.

The 1953 aerial photograph shows the site to be completely vegetated. A small house and shed appear to exist in the northern portion of the site along the foreshore area. The neighboring property along the eastern boundary of the site is being utilised for cropping activities with much of the investigated site's eastern boundary bordered by crops. Numerous residential properties are evident along Shoal Point, approximately 2km to the north-east of the site.

The 1962 photograph shows extensive clearing activities have occurred along the northern portion (foreshore) of the site, relative to the earlier 1953 photograph. Four (4) buildings are evident along this foreshore area of the site. A large, cleared north-south oriented area is present in this northern portion of the site. The neighboring property (to the east) has extended its cropping activities further south.

The 1986 and 1991 photographs show the entirety of the site to be cleared of the natural vegetation and to reflect the current property layout. Mangrove areas remain along the western boundary of the site. Approximately seven buildings are evident and these are concentrated along the foreshore area of the site. Livestock grazing along the length of the site is evident in both photos. The shed area which housed the livestock dip directly adjacent to the foreshore region is clearly visible in both photographs. A large dam area is evident within the

northern portion of the site. The wastewater treatment plant, located beyond the site's southern boundary, was constructed in the period between the 1963 and 1986 photographs.

The 1998 and 2009 aerial photographs show the continuation of livestock grazing across the entirety of the site. These photographs reflect the current setting of the site prior to the recent demolition works. The dip site, sheds and residential dwellings are evident in both of these photographs. Extensive residential developmental works are visible in the 2009 digital image to the south-east of the site.

The most recent Nearmap digital image depicts the site in its investigated setting. The livestock dip, numerous sheds and residential dwelling have all been removed and the storage of building materials for developmental works is visible. Machinery is evident on site adjacent to the remaining dwelling at the entrance to the site (Hodges Road).

3.3. Site reconnaissance and anecdotal information

In 2005 Gilbert & Sutherland conducted interviews with the then occupant. Telephone interviews were conducted as part of G&S's response to information request RCU1698.

As part of this investigation G&S conducted additional interviews with the following people;

- The current caretaker of the site who is an employee of the site occupants, BBCG Pty Ltd.
- Personnel from Aqua Drilling Pty Ltd, contractors who constructed additional groundwater wells surrounding the dip location.

Below is a summary of the anecdotal information provided by the current owner and developer.

- The current caretaker of the site who is an employee of the site occupants, BBCG Pty Ltd.
- Personnel from Aqua Drilling Pty Ltd, contractors who constructed additional groundwater wells surrounding the dip location.

stored within the large shed adjacent to the dip bath. No information on the type nor the quantity of chemicals used/stored for dipping purposes could be obtained during these 2005 interviews. [redacted] informed G&S that approximately 150 head of cattle were stocked on site at any one time.

[redacted] informed G&S that the usage of the runway was very limited and that no fuels (unleaded for ultralight aircrafts) were stored on the property. Further information from [redacted] indicated the airstrip was originally built as a dog racing track and that no fill was used in constructing the track, only grading of the original surface.

Anecdotal information obtained during this investigation is summarised as follows;

- The current caretaker of the site had been on-site only for the past four months. In that period no major works had been conducted on the site. The caretaker indicated no extended storage of heavy machinery had occurred during his occupancy of the site was he aware of any maintenance works on BBCG's machinery on the site. The occupant also indicated that no use or storage of fuels and/or oils for construction machinery had occurred during his occupancy.
- The current site owner [redacted] indicated that the two (2) houses and three (3) sheds were removed under a current operational works approval for the development. [redacted] indicated all asbestos material discovered during the demolition works was removed from site by appropriately licensed contractors, in accordance with the *National Code of Practice for the Safe Removal of Asbestos*.
- The drilling contractors used for the installation of the groundwater wells (Aqua Drilling Pty Ltd) had known the former site owner [redacted] and confirmed that he had passed away since moving from the site. The contractor indicated [redacted] continued operation of their company Hodge Industries which had been involved in the sale of agricultural machinery. Further information from the contractor indicated this company had ceased operations. The contractor informed G&S that [redacted] had a caretaker live with him on

the property for a number years and assisted with the general running and maintenance of the site. The caretaker was still living within the Mackay region. Efforts by G&S to contact [redacted] and his former caretaker were unsuccessful.

In summary no additional information was obtained through the site reconnaissance phase relating to potentially contaminating activities conducted on-site which would require further investigation beyond that proposed within the sampling and analysis plan and COPC's identified within section 3.4 below.

3.4. Preliminary investigation and site history summary

Following the completion of the Preliminary review and site history investigation for the site, several potentially contaminating activities were identified, triggering the need for further investigation as pre-empted by the previous investigation and the EPA 2005 information request.

The potentially contaminating land-uses and the associated contaminants of concern are summarised in Table 3.4.1.

Table 3.4.1 Contaminants of potential concern for the identified historical land uses

Lot 4 on RP817122	Contaminants of Potential Concern
Livestock dip	<ul style="list-style-type: none">• OC/OP pesticides• Heavy metals
Dwellings – demolished and removed from site, except for 1.	<ul style="list-style-type: none">• Heavy metals• Asbestos
Sheds – demolished and removed from site	<ul style="list-style-type: none">• OC/OP pesticides• Heavy metals• Asbestos• TPH• BTEX• PAH
Livestock grazing and cropping on adjacent land	<ul style="list-style-type: none">• OC/OP pesticides• Heavy metals

4. Methodology - subsurface investigations

4.1. Soil investigation

A total of 55 soil boreholes were drilled throughout the site between 18 and 20 October, 2010. Samples recovered to determine the presence, distribution and concentration of potential contaminants in the soil. The borehole locations are shown on the attached drawings numbered 10527.1.2 -10527.1.6.

Shallow sampling was undertaken using a Jarrett head soil auger. Drilling, to facilitate soil sampling at depth and the installation of five (5) groundwater piezometers (GW1-GW5), was conducted by Cardno Bowler. Sampling was conducted using a hollow flight auger and a split tube sampler to retrieve relatively undisturbed soil samples throughout the soil profile to a maximum depth of 3m.

Both the split tube sampler and Jarrett head auger were decontaminated between sampling in accordance with standard procedures. This involved the removal of soil followed by cleaning of the implements with a phosphate-free detergent and rinsing with clean water.

Implements used for crushing and mixing of interlaboratory split (5 in total) and blind intralaboratory duplicate (5 in total) samples, were rinsed in phosphate-free detergent between samples followed by rinsing with clean water.

Rinsate blanks were collected from the sampling implements following decontamination to assess the efficacy of the decontamination procedure.

4.2. Scope of laboratory analysis

Representative soil samples were recovered from 53 of the 55 boreholes. Two additional deep boreholes were drilled to investigate the potential presence of fill material in the foreshore region (Denoted IB1 & IB2). Laboratory analysis of recovered soils samples was undertaken for;

- NEPM 8 heavy metals
- Benzene, Toluene, Ethylbenzene and total Xylene (BTEX)

- Polycyclic Aromatic Hydrocarbons (PAH)
- Total Petroleum Hydrocarbons (TPH)
- Organochlorine (OC) and organophosphorus (OP) pesticides
- Asbestos fibres in soil.

The suite of analyses for each sample was determined based on the proximity of the sample to a potentially contaminating activity and the contaminants of potential concern related to that activity. The sampling strategy adopted for the various potentially contaminating activities identified in the site history assessment is detailed in Table 4.2.1 (following page).

Laboratory analysis was conducted by Australian Laboratory Services (ALS) Environmental, Brisbane, SGS Laboratory Services, Sydney and Queensland Laboratories (QLABS). All three laboratories are NATA accredited for the relevant methods.

4.3. Groundwater investigation

Groundwater was encountered in the vicinity of the dip during the 2004 investigation between 2.6m and 3.0m (below NSL).

Further investigation of groundwater was undertaken to address the EPA's 2005 information request. This involved the installation of one groundwater monitoring well immediately adjacent to the location of the livestock dip and a further four monitoring wells around the dip location, 15 - 18m away to allow triangulation of groundwater levels to facilitate an assessment of the direction of groundwater movement. These wells were installed on 19 October 2010 and sampled on 20 October 2010.

The first round of groundwater sampling identified contaminants in four of the wells, including lead contamination in GW2 and arsenic contamination in GW4 both of which exceeded the GILs for irrigation.

A further five (5) groundwater piezometers (GW6-GW10) were installed by Aqua Drilling to facilitate delineation of this groundwater contamination. GW2, which contained minimal groundwater during the first sampling event, was re-drilled to a maximum depth of 4.5m and replaced to ensure adequate purging and sampling volumes. The additional piezometers were installed on the 12th and 13th of November, 2010.

Table 4.2.1 – Sampling strategy for potentially contaminating activities

Potentially contaminating activity / feature	Proposed sampling depth	Contaminants of potential concern / proposed analytes
Broad-acre assessment of southern portion of site - adjacent to nursery, stockpiles and sugar cane cropping	0 - 0.15m (sample to be retained from 0.2 - 0.3m)	NEPM suite of 8 metals, OC/OP pesticides
Sheds (3 demolished, 1 intact)	0 - 0.15m (sample to be retained from 0.2 - 0.3m)	NEPM suite of 8 metals, OC/OP pesticides, TPH/BTEX Plus asbestos fibres for demolished sheds
Houses (2 demolished, 1 intact)	0 - 0.15m (sample to be retained from 0.2 - 0.3m)	NEPM suite of 8 metals, asbestos fibres
Cattle tick dip	0 - 0.15m (sample to be retained from 0.2 - 0.3m) analysis) BHA29 & BHA30 will be drilled to 3m to facilitate sampling at 1m, 2m, 2.5m & 3m	NEPM suite of 8 metals, OC/OP pesticides
Cattle tick dip	1 sample of groundwater from each bore, following bore establishment and development.	pH, conductivity, dissolved oxygen, NEPM suite of 8 metals

4.4. Piezometer construction details

The piezometer boreholes (100mm in diameter) were constructed to the target depth using hollow flight augers which negated the need to use drilling mud.

Well screens, risers and end caps were constructed using class 18 high pressure polyvinyl chloride (PVC) pipe and fittings and secured by thread joints. The inside diameter of each well was 50mm to facilitate well development and sample collection.

The installed well pack surrounding the well screens consisted of washed, inert, coarse river sand. End caps were vented to allow for pressure equalisation. Filter sock was placed over the screen section of the wells. A permanent mark was made at the top of the monument (TOM) to provide a datum for subsequent water level measurements.

Bentonite pellets were placed above the sand pack at least 200mm thick and hydrated for at least 3hrs and allowed to swell. Steel box monuments (100x100mm) and grout of cement (200mm) were installed around the top of the riser for mechanical protection.

4.5. Piezometer monitoring locations

To inform the process of identifying suitable monitoring bore locations, a review of the following was undertaken;

- regional geology
- site topography
- licensed groundwater bores (within a 2km radius)
- existing site geotechnical/ environmental borelogs and associated information.

Based on the above information, five shallow piezometers were installed around and immediately adjacent to the former dip location. At each location a piezometer was installed into the unconfined sand aquifer. The piezometer construction details are provided with the soil borehole logs in Appendix 6.

Following the receipt of groundwater analytical results from these five wells an additional five wells were installed to delineate the identified groundwater contamination. The additional well locations were chosen based on the above factors and from predicted groundwater flow paths established from the first sampling event.

The relative levels of the piezometer network was surveyed to assist in determination of flow direction

and to indicate groundwater heights to metres Australian Height Datum (mAHD).

4.6. Groundwater quality testing

The contaminants of potential concern for groundwater sampling were associated with the former use of the cattle dip and included a suite of metals. Minor concentrations of OC pesticides were detected in the 2004 Site Investigation, however only in one location, which was not immediately adjacent to the dip. Therefore OC's were not targeted, pending the results from the soil investigation. Ultimately, the soil investigation did not identify any OC contamination in soils and therefore the groundwater samples were not analysed for OC's.

The piezometers (GW1 - 5) were developed by bailing and left undisturbed for 24 hours prior to measurement from the top of monument (TOM) to the depth of groundwater.

Upon revisiting the site to sample, both GW1 and GW3 were dry, despite groundwater being encountered during the construction of the wells. Similarly, GW2 contained minimal water and only a small sample could be obtained. This indicates fluctuation in groundwater level, probably associated with tidal oscillation. Due to time constraints, GW3 (which had been installed immediately adjacent to the dip) was re-drilled, developed and sampled by Cardno Bowler on 22 October 2010.

GW2, GW4 and GW5 were sampled by Gilbert & Sutherland on 20 October 2010.

The results of the first sampling event indicated that contamination was present in GW2 (Pb at 2190µg/L) and GW4 (As at 362µg/L). As such, a further round of sampling was proposed to confirm the presence of contaminants and to install further wells for the purpose of delineating the extent of contamination.

An additional groundwater monitoring event was conducted after the establishment and development of the additional five (5) groundwater wells GW6-GW10 on 13 November 2010. This additional groundwater event included the re-sampling of GW1-GW5 (after GW2 was re-drilled to

a greater depth by Aqua Drilling). Throughout this additional monitoring event GW1 remained dry.

All samples were collected in accordance with the NEPM 1999 Schedule (B2) Guideline on Data Collection, Sample Design and Reporting and Australian Standard 4482.1 – 2005. The samples were collected using a teflon-lined bailer which was washed in a phosphate-free detergent and rinsed in clean water between boreholes. The samples were field filtered using a 45 micron filter, acidified and chilled for transport to the laboratory.

During both the 20 October and 13 November 2010 monitoring and sampling events, in situ groundwater quality monitoring was conducted on the sampled groundwater from all piezometers. The following water quality parameters were measured and recorded for each groundwater sample:

- electrical conductivity
- pH
- dissolved oxygen
- turbidity
- temperature

TPS Ionode multi-parameter meters (model no's.WP-91 and WP-81) were used for the in-situ analysis. The meters were calibrated on Friday 15 October 2010 prior to traveling to the site.

4.7. Groundwater investigation threshold levels

In accordance with Schedule B(6) of the NEPM (1999), the likely environmental values of groundwater should be identified to establish relevant investigation criteria. The environmental values to be considered include:

- aquatic ecosystems
- aquaculture and human consumers of food
- agricultural water
- recreation and aesthetics
- drinking water
- industrial water.

Groundwater Investigation Levels have been identified in Table 5B of the National Environment Protection Measure Schedule B(1) for each of the environmental values identified above, with the exception of industrial and recreation.

The proposed use of the site, in the immediate vicinity of the dip, is for a foreshore park which could feasibly be irrigated from groundwater if sufficient water of a suitable quality was available. It is considered appropriate that the groundwater quality be assessed against the investigation criteria for irrigation. Similarly, if groundwater was accessed for beneficial use in the park area, there is a small risk that the water could be consumed inadvertently or intentionally by park users. As such, consideration will also be given to the drinking water guidelines.

The ultimate receiving environment for groundwater flowing from the site is the ocean at Sand Bay, which is a marine environment. It is therefore considered appropriate that the investigation criteria for the protection of aquatic ecosystems be addressed.

Aquaculture and human consumers of food are not considered to be potential environmental values as aerial photo review indicates there is no aquaculture located in the vicinity of the site.

The area is proposed for residential development and therefore groundwater would not be extracted or used for industrial, agricultural and drinking purposes.

Based on this assessment the appropriate investigation criteria for groundwater are summarised in Table 4.7.1.

4.8. Groundwater flow paths

The groundwater flows (seepage) were assessed using a three-dimensional digital model created to show the spatial distribution of boreholes and groundwater levels in each. The software used was CivilCAD 3d, which has three dimensional surface modelling capabilities.

Groundwater levels from the bores were used in the modelling. Level results are discussed in Section 5 of this report and recorded in Table 5.7 at the end of Section 5. Groundwater contours are shown on Drawing No. 10527.1.8.

Table 4.7.1 -Investigation criteria for metal contamination in groundwater

Parameter	As	Cd	Cr	Cr (VI)	Cu	Pb	Ni	Zn	Hg
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Drinking Water	7	2	50*	50	2000	10	20	3000	1
Maintenance of aquatic ecosystems (freshwater)	50	0.2-2	10	-	2-5	1-5	15-150	5-50	0.1
Maintenance of aquatic ecosystems (marine)	50	2	50	-	5	5	15	50	0.1
Irrigation	100	10	1000	100	200	200	20	2000	2
Stock Watering	500	10	1000	1000	500	100	1000	20000	2

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SCALE
1:250



ORIENTATION
NORTH

LEGEND

X BHA# Borehole Locations

SOURCES

Image Source: Nearmap 2010



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PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
BOREHOLE SAMPLE
LOCATIONS

DATE
27/10/2010
SCALE
1:250

PROJECT NO
10527

DRAWN
BMW

CHECKED
SPD

DRAWING NO
10527.1.3

REVISION

5 10

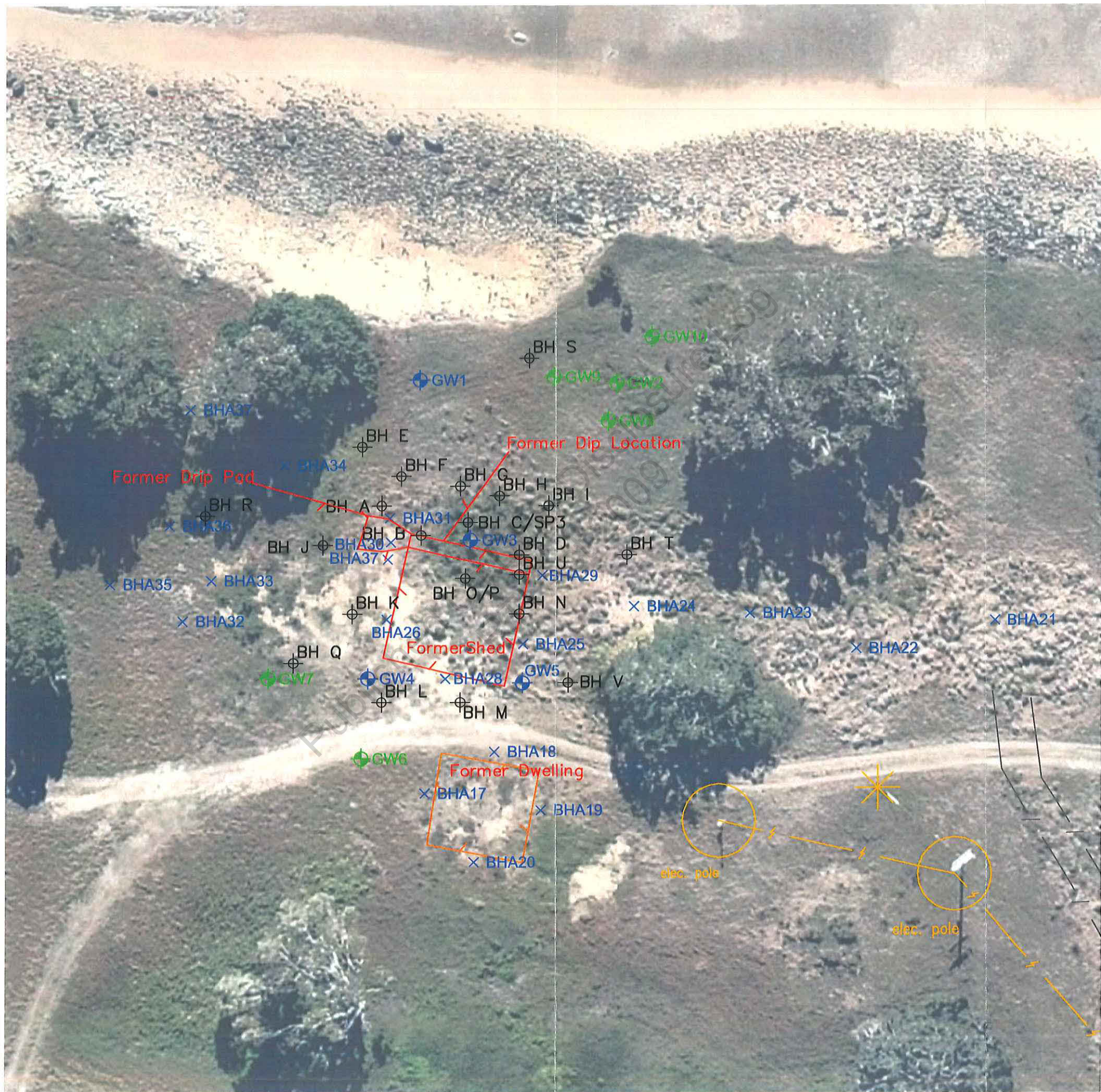
SCALE
1:400

ORIENTATION
NORTH

LEGEND
Site Boundary
Borehole Locations - 2004 Investigation
Borehole Location - 2010 Investigation
Groundwater Piezometer Location (19/10/10)
Delineation Piezometer Locations (11/11/10)

SOURCES
Image Source: Nearmap 2010

NOTE
GW2 re-drilled 11/11/10 to 4.5m below NSL



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AGRICULTURE WATER ENVIRONMENT
21-415

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
BOREHOLE &
GROUNDWATER
SAMPLE LOCATIONS

DATE 18/11/2010	DRAWN KT
SCALE 1:400	CHECKED
PROJECT NO 10527	DRAWING NO 10527.1.4
REVISION	



SCALE
1:500



ORIENTATION
NORTH

LEGEND

- Site Boundary
- × BHA# Borehole Location - 2010 Investigation
- × IB# Investigative Borehole

SOURCES

Image Source: Nearmap 2010



PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
FORMER SHED & DWELLING
BOREHOLE SAMPLE
LOCATIONS

DATE 27/10/2010	DRAWN KT
SCALE 1:500	CHECKED
PROJECT NO 10527	DRAWING NO 10527.1.5
REVISION	

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SCALE
1:250

ORIENTATION
NORTH

LEGEND
X BHA# Borehole Locations

SOURCES
Image Source: Nearmap 2010

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AGRICULTURE WATER ENVIRONMENT
21-415



File A

**+GILBERT
SUTHERLAND**

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
BROAD ACRE BOREHOLE
SAMPLE LOCATIONS
CATTLE HOLDING YARD

DATE 27/10/2010	DRAWN BMW
SCALE 1:250	CHECKED SPD
PROJECT NO 10527	DRAWING NO 10527.1.8
	REVISION

200 400 600 800
metres
SCALE
1:16 000


ORIENTATION
NORTH

LEGEND

-  Surrounding Water
-  Site Location
-  Registered Groundwater Bores

SOURCES

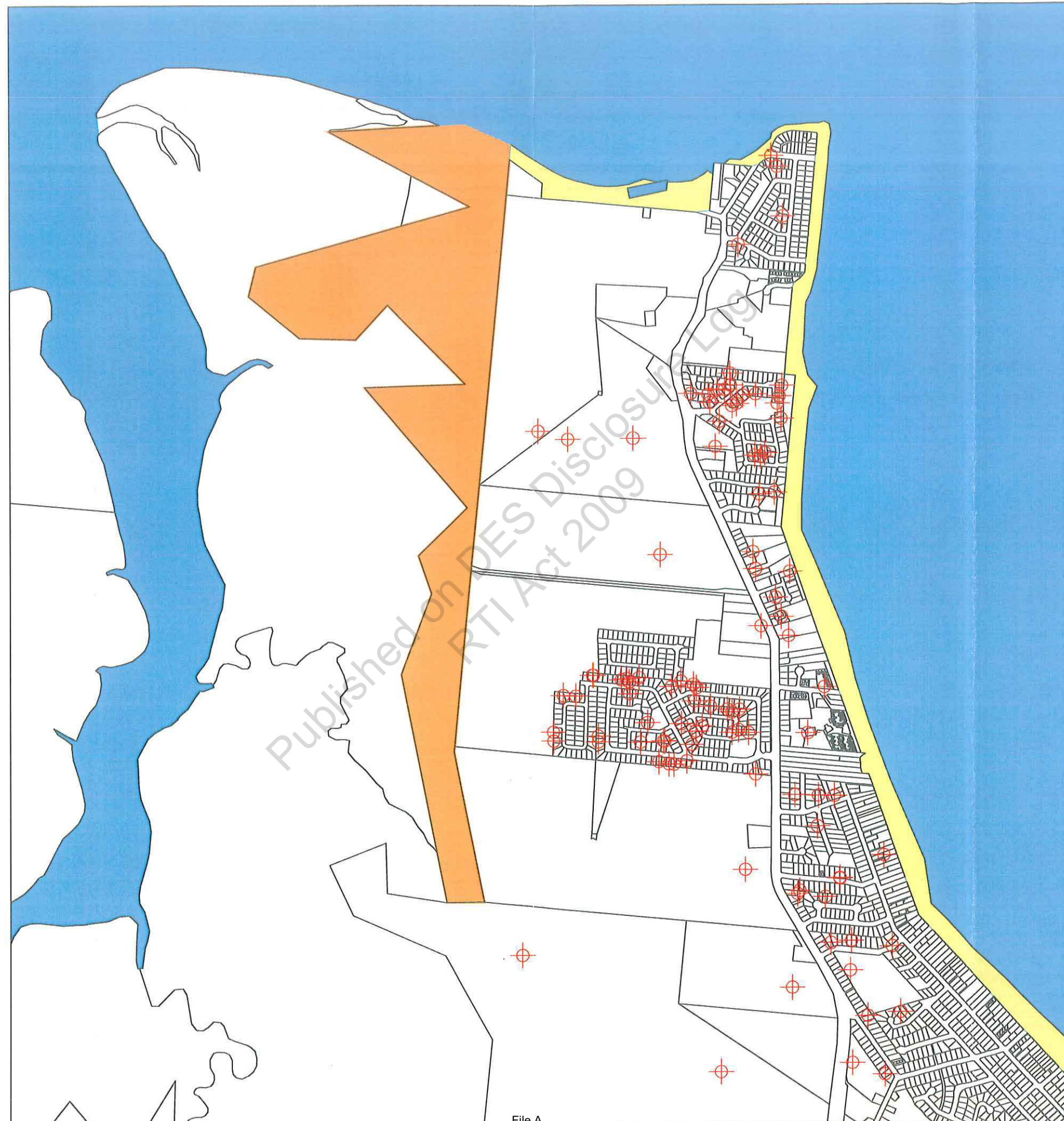
DNR 2010

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SUTHERLAND**

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
REGISTERED GROUNDWATER
BORE LOCATIONS

DATE 16/11/2010	DRAWN AJS
SCALE 1:16 000	CHECKED SPD
PROJECT NO 10527	DRAWING NO 10527.1.7
REVISION	



SCALE
1:200

ORIENTATION
NORTH

LEGEND
Silo Boundary
Groundwater Piezometer Location (19/10/10)
Delineation Piezometer Locations (11/11/10)
Inferred extent of arsenic contamination in groundwater

SOURCES
Image Source: Nearmap 2010

NOTE
GW2 re-drilled 11/11/10 to 4.5m below NSL
Contours in mAHd with a 0.2m interval.
Arsenic concentrations in GW4:

Well #	Sample Date	Arsenic (mg/L)
GW4	20/10/10	362
GW4	13/11/10	330

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AGRICULTURE WATER ENVIRONMENT
21-415



File A

PROJECT
SHOAL POINT MACKAY

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
APPROXIMATE EXTENT OF
ARSENIC CONTAMINATION
IN GROUNDWATER

DATE 18/11/2010	DRAWN KT
SCALE 1:200	CHECKED
PROJECT NO 10527	DRAWING NO 10527.1.8
REVISION	

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Release

5. Results – subsurface investigations

Soils were logged in accordance with the *Australian Soil and Land Survey, Field Handbook* and the borehole logs are attached as Appendix 5.

5.1. Soil investigation threshold levels

The Health Investigation Levels from Table 5A of the *National Environment Protection Measure Schedule B(1)* have been adopted for comparison. The Health Investigation Level exposure setting A (HIL-A) was adopted on the basis that the proposed redevelopment of the site is for standard residential purposes. The NEPM Environmental Investigation Levels (EILs) have also been considered during the investigation as a trigger for further investigation into potential environmental impact and phytotoxicity issues.

As the NEPM guidelines for TPH's are not specific to the various TPH fractions and there are no guidelines for BTEX, guidelines for TPH's were adopted from unpublished EPA correspondence³ and for BTEX from the NSW EPA *Guidelines for Assessing Service Station Sites* (Table 3).

A summary of the Soil Investigation Levels is provided in Table 5.1.1.

5.2. Soil analytical results

The analytical results of recovered soil samples are shown in Tables 5.1-5.3 and 5.5 (at the end of this section). Results exceeding the HIL-A and EILs are highlighted. The certificates of analysis, quality control report and chain of custody documentation are attached as Appendix 1.

The soil profile in the vicinity of the former livestock dip was typically characterised by medium grained, pale orange sand to the full depth of the profile.

No odours or visible evidence of contamination were identified within any of the boreholes in the vicinity of the dip.

Table 5.1.1 Health Based Soil Investigation levels for land use exposure setting A (Residential) and the Environmental Investigation Levels

Analyte	Health-based Investigation levels(A) (mg/kg)	Environmental Investigation Levels (mg/kg)
Metals/Metalloids		
Arsenic	100	20
Cadmium	20	3
Chromium (VI)	100	-
Copper	1000	60
Lead	300	300
Nickel	600	60
Zinc	7000	200
Mercury (Inorganic)	15	1
Total Petroleum Hydrocarbons (TPH)		
C6 - C9 Fraction	100	-
C10 – C14 Fraction	100	-
C15 – C28 Fraction	1000	-
C29 – C36 Fraction	1000	-
BTEX		
Benzene	1	-
Toluene	1.4	-
Ethyl benzene	3.1	-
Total Xylenes	14	-
Polycyclic Aromatic Hydrocarbons (PAH)		
Total	100	-
Organics (Organo-chlorine and organo-phosphorus pesticides)		
Aldrin + Dieldrin	10	0.2
Chlordane	50	-
DDT+DDD +DDE	200	0.2
Heptachlor	10	-
Other		
Asbestos	No discoverable fibres	

³ Queensland Department of Environment (DOE) January 1999, unpublished correspondence *Draft Investigation Thresholds for TPH/BTEX*.

The analytical results for soils indicate that there is no contamination in any of the samples analysed, with the exception of the following:

- Surface sample BHA18 (0 - 0.15) contained total Chromium (64mg/kg), marginally exceeding the EIL (for Cr (III), 50mg/kg)).
- BHA18 (0 - 0.15) also contained Nickel (72mg/kg), marginally exceeding the EIL (60mg/kg).

Subsequent speciation of BHA18/0-0.15m for analysis of chromium III (trivalent chromium) and chromium VI (hexavalent chromium) indicated Cr (VI) was not present in the sample. The Cr (III) concentration was 64mg/kg which marginally exceeds the EIL (50mg/kg) however is under the HIL-A of 12,000mg/kg (12%). As this minor contamination would occur in a park (HIL - E of 24,000mg/kg), its presence is considered inconsequential.

A total of 23 primary soil samples were sent to Queensland Laboratories for the quantitative identification of asbestos fibres within soil utilising polarised light microscopy. No asbestos fibres were detected in any of the recovered soil samples. The asbestos results are shown in Table 5.5.

Two (2) investigative borehole (IB1 & IB2) were drilled to a maximum depth of 3.0m below NSL along the foreshore dune area. These investigative boreholes were drilled based on discussions had with the site's Third Party Reviewer and were designed to investigate whether uncontrolled filling of the dune region adjacent to the entry road of the site had occurred. Both IB1 and IB2 revealed no evidence of uncontrolled filling within these areas. Natural sands were observed the entire depth of both 3.0m deep boreholes.

5.3. Groundwater investigation

5.3.1. Groundwater quality investigation – Former Livestock Dip

The analytical results of groundwater samples recovered from each well over the two monitoring events are shown in Table 5.4 and groundwater well details and gauging (depth to water) results are shown in Tables 5.6-5.7 (at the end of this section). Results exceeding the nominated GILs are highlighted. The certificates of analysis, quality

control report and chain of custody documentation are attached as Appendix 1.

Groundwater depths measured across the monitoring well field ranged from 1.58 mAHd in GW10 to 1.89 mAHd in GW6 during the two monitoring events.

No odours or visible evidence of contamination were identified within any of the groundwater wells in the vicinity of the dip during the gauging, purging and sampling events.

5.3.2. Groundwater monitoring event 20 October 2010

The analytical results for groundwater samples extracted on 20 October 2010 identified the following contamination in excess of the adopted investigation levels:

GW2:

- Total Arsenic (36µg/L) exceeding the GIL for drinking water (7µg/L).
- Total Chromium (57µg/L) marginally exceeding the GIL's for drinking water and the maintenance of marine ecosystems (50µg/L).
- Copper (82µg/L) exceeding the GIL for the maintenance of marine ecosystems (5µg/L).
- Lead (2190µg/L) exceeding the GIL for irrigation (200µg/L) and for the maintenance of marine ecosystems (5µg/L).
- Nickel (36µg/L) marginally exceeding the GIL for the maintenance of marine ecosystems (15µg/L).
- Zinc (739µg/L) exceeding the GIL for the maintenance of marine ecosystems (50µg/L).

GW3:

- Arsenic (64µg/L) exceeding the GIL's for drinking water (7µg/L) and the maintenance of marine ecosystems (50µg/L).

GW4:

- Arsenic (363µg/L) exceeding the Irrigation level 100µg/L and the GIL's for drinking water (7µg/L) and the maintenance of marine ecosystems (50µg/L).
- Copper (9µg/L) exceeding the GIL for the maintenance of marine ecosystems (5µg/L).
- Lead (30µg/L) exceeding the GIL for the maintenance of marine ecosystems (5µg/L).

GW5:

- Total Arsenic (36µg/L) exceeding the GIL for drinking water (7µg/L).
- Lead (8µg/L) marginally exceeding the GIL for the maintenance of marine ecosystems (5µg/L).

5.3.3. Groundwater monitoring event 13 November 2010

Groundwater analytical results for samples extracted from the ten groundwater wells on 13 November 2010 displayed no contamination in excess of the applicable guideline limits, with the exception of the following:

- GW3 contained arsenic (78µg/L) exceeding the GIL's for drinking water (7µg/L) and the maintenance of marine ecosystems (50µg/L).
- GW4 contained Arsenic (330µg/L) exceeding the Maintenance of Aquatic Ecosystems (50µg/L).

The second groundwater sampling event on 13 November 2010 confirmed the presence of arsenic contamination in the groundwater in the immediate vicinity of GW4.

Conversely, the data from the second sampling event contradicted the previous data which showed generally low level groundwater contamination in GW2, GW3 and GW5. It is considered that the data from the first sampling event was probably contaminated as a result of the drilling and piezometer construction procedure used by the drilling contractor and the lack of groundwater available to allow proper development of the wells, particularly for GW2.

As part of the second sampling event, GW2 was replaced with a deeper well to overcome this problem prior to re-development and resampling. Similarly, GW6-GW10 were installed to greater depths to ensure adequate water was available for well development. GW3, GW4 and GW5 were subjected to further development prior to re-sampling.

It is our opinion that the contamination identified in the sampling conducted on 20 October 2010 is an artifact from well installation and construction and should be disregarded. The data from 12 and 13 November 2010 is considered reliable for the purpose of this assessment.

The groundwater contours and possible extent of arsenic contamination around GW4 are illustrated on Drawing No. 10527.1.8.

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Table 5.1
METALS RESULTS

Shoal Point Bay, Site
Investigation results

				Parameter	Arsenic	Cadmium	Chromium	Chromium (III)	Chromium(VI)	Copper	Lead	Nickel	Zinc	Mercury
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Limit of reporting (ALS)	5	1	2	2	<0.5	5	5	2	5	0.1
				HL(a)	100	20	100	12,000	100	1000	300	600	7000	15
Lab	Lab batch #	Sample date:	Sampler / Depth (m)	HL	20	3	50	50	-	60	300	60	200	1
ALS	EB1018995	18/10/10	BHA100-0.15m	<5	<1	3	-	-	<5	<5	<2	10	<0.1	-
ALS	EB1018995	18/10/10	BHA200-0.15m	<5	<1	17	-	-	16	9	7	40	<0.1	-
ALS	EB1018995	18/10/10	BHA300-0.15m	<5	<1	5	-	-	<5	<5	<2	6	<0.1	-
ALS	EB1018995	18/10/10	BHA400-0.15m	<5	<1	2	-	-	<5	<5	<2	11	<0.1	-
ALS	EB1018995	18/10/10	BHA500-0.15m	<5	<1	2	-	-	<5	<5	<2	9	<0.1	-
ALS	EB1018995	18/10/10	BHA600-0.15m	<5	<1	3	-	-	<5	<5	<2	6	<0.1	-
ALS	EB1018995	18/10/10	BHA700-0.15m	<5	<1	7	-	-	<5	<5	<2	13	<0.1	-
ALS	EB1018995	18/10/10	BHA800-0.15m	<5	<1	2	-	-	<5	<5	<2	5	<0.1	-
ALS	EB1018995	18/10/10	BHA900-0.15m	<5	<1	<2	-	-	<5	<5	<2	<5	<0.1	-
ALS	EB1018995	18/10/10	BHA1000-0.15m	<5	<1	<2	-	-	6	10	<2	33	<0.1	-
ALS	EB1018995	18/10/10	BHA1100-0.15m	<5	<1	8	-	-	<5	<5	<2	3	<0.1	-
ALS	EB1018995	18/10/10	BHA1200-0.15m	15	<1	31	-	-	9	10	10	50	<0.1	-
ALS	EB1018995	18/10/10	BHA1300-0.15m	<5	<1	8	-	-	<5	6	<2	24	<0.1	-
ALS	EB1018995	18/10/10	QC1	Duplicate of BHA1300-0.15m	<5	<1	7	-	<5	6	<2	22	<0.1	-
				Relative Percentage Difference (RPD) between BHA1300-0.15m & QC1	-	-	13%	-	-	0%	-	9%	-	-
SGS	SEB2595	18/10/10	QC1A	Triplicate of BHA1300-0.15m	<3	<0.3	7	-	3.6	1.3	23	<0.05	-	-
				Relative Percentage Difference (RPD) between BHA1300-0.15m & QC1A	-	-	13%	-	-	18%	-	4%	-	-
ALS	EB1018995	18/10/10	BHA1400-0.15m	<5	<1	4	-	-	<5	<5	<2	8	<0.1	-
ALS	EB1018995	18/10/10	BHA1500-0.15m	<5	<1	6	-	-	<5	<5	<2	7	<0.1	-
ALS	EB1018995	18/10/10	BHA1600-0.15m	<5	<1	3	-	-	<5	<5	<2	8	<0.1	-
ALS	EB1018995	18/10/10	BHA1700-0.15m	7	<1	35	-	-	11	34	41	154	<0.1	-
ALS	EB1018995	19/10/10	BHA1800-0.15m	<5	<1	64	64	<0.5	10	28	72	162	<0.1	-
ALS	EB1018995	19/10/10	BHA1900-0.15m	7	<1	4	-	-	<5	7	<2	26	<0.1	-
ALS	EB1018995	19/10/10	BHA2000-0.15m	5	<1	4	-	-	<5	<5	<2	12	<0.1	-
ALS	EB1018995	19/10/10	BHA2100-0.15m	7	<1	3	-	-	<5	<5	<2	8	<0.1	-
ALS	EB1018995	19/10/10	BHA2200-0.15m	7	<1	6	-	-	<5	11	<2	127	<0.1	-
ALS	EB1018995	19/10/10	BHA2300-0.15m	5	<1	5	-	-	<5	12	<2	62	<0.1	-
ALS	EB1018995	19/10/10	BHA2400-0.15m	5	<1	4	-	-	<5	<5	<2	29	<0.1	-
ALS	EB1018995	19/10/10	BHA2500-0.15m	6	<1	4	-	-	6	8	<2	41	<0.1	-
ALS	EB1018995	19/10/10	BHA2600-0.15m	6	<1	3	-	-	<5	<5	<2	104	<0.1	-
ALS	EB1018995	19/10/10	QC3	Duplicate of BHA2600-0.15m	7	<1	3	-	<5	7	2	183	<0.1	-
				Relative Percentage Difference (RPD) between BHA2600-0.15m & QC3	-	-	0%	-	-	-	-	55%	-	-
SGS	SEB2595	19/10/10	QC3A	Triplicate of BHA2600-0.15m	6	<0.3	3.5	-	1.4	6	1.7	140	<0.05	-
				Relative Percentage Difference (RPD) between BHA2600-0.15m & QC3A	-	-	15%	-	-	-	-	30%	-	-
ALS	EB1018995	19/10/10	BHA2700-0.15m	7	<1	3	-	-	<5	<5	<2	24	<0.1	-
ALS	EB1018995	19/10/10	BHA2800-0.15m	6	<1	4	-	-	<5	12	2	39	<0.1	-
ALS	EB1018995	19/10/10	BHA2900-0.15m	6	<1	4	-	-	<5	<5	<2	52	<0.1	-
ALS	EB1018995	19/10/10	BHA2910m	6	<1	4	-	-	<5	<5	<2	8	<0.1	-
ALS	EB1018995	19/10/10	BHA2920m	5	<1	3	-	-	<5	<5	<2	6	<0.1	-
ALS	EB1018995	19/10/10	BHA2925m	5	<1	2	-	-	<5	<5	<2	<5	<0.1	-
ALS	EB1018995	19/10/10	BHA293m	7	<1	4	-	-	<5	<5	<2	28	<0.1	-
ALS	EB1018995	19/10/10	BHA3000-0.15m	7	<1	4	-	-	<5	<5	<2	6	<0.1	-
ALS	EB1018995	19/10/10	BHA301m	7	<1	3	-	-	<5	<5	<2	7	<0.1	-
ALS	EB1018995	19/10/10	BHA302m	7	<1	3	-	-	<5	<5	<2	12	<0.1	-
ALS	EB1018995	19/10/10	BHA3025m	<5	<1	<2	-	-	<5	<5	<2	12	<0.1	-
ALS	EB1018995	19/10/10	BHA302m	6	<1	3	-	-	<5	<5	<2	17	<0.1	-
ALS	EB1018995	19/10/10	BHA3100-0.15m	6	<1	3	-	-	<5	<5	<2	24	<0.1	-
ALS	EB1018995	19/10/10	BHA3200-0.15m	<5	<1	3	-	-	<5	136	<2	85	<0.1	-
ALS	EB1018995	19/10/10	BHA3300-0.15m	7	<1	7	-	-	<5	6	2	24	<0.1	-
ALS	EB1018995	19/10/10	BHA3400-0.15m	7	<1	7	-	-	<5	<5	<2	12	<0.1	-
ALS	EB1018995	19/10/10	BHA3500-0.15m	6	<1	7	-	-	<5	<5	<2	16	<0.1	-
ALS	EB1018995	19/10/10	BHA3600-0.15m	6	<1	6	-	-	<5	<5	<2	13	<0.1	-
ALS	EB1018995	19/10/10	BHA3700-0.15m	8	<1	11	-	-	5	5	2	14	<0.1	-
ALS	EB1018995	19/10/10	QC6	Duplicate of BHA3700-0.15m	10	<1	7	-	<5	<5	<2	9	<0.1	-
				Relative Percentage Difference (RPD) between BHA3700-0.15m & QC6	-	-	44%	-	-	-	-	43%	-	-
SGS	SEB2595	19/10/10	QC6A	Triplicate of BHA3700-0.15m	6	<0.3	8.9	-	3.7	6	1.8	11	<0.05	-
				Relative Percentage Difference (RPD) between BHA3700-0.15m & QC6A	-	-	21%	-	-	30%	0%	11%	24%	-
ALS	EB1018995	19/10/10	BHA3800-0.15m	6	<1	4	-	-	<5	<5	<2	14	<0.1	-
ALS	EB1018995	19/10/10	BHA3900-0.15m	7	<1	3	-	-	<5	<5	<2	10	<0.1	-
ALS	EB1018995	19/10/10	BHA4000-0.15m	7	<1	4	-	-	<5	81	<2	54	<0.1	-
ALS	EB1018995	19/10/10	BHA4100-0.15m	<5	<1	3	-	-	<5	20	<2	45	<0.1	-
ALS	EB1018995	19/10/10	BHA4200-0.15m	5	<1	4	-	-	<5	<5	<2	20	<0.1	-
ALS	EB1018995	19/10/10	BHA4300-0.15m	6	<1	6	-	-	<5	7	3	29	<0.1	-
ALS	EB1018995	19/10/10	BHA4400-0.15m	<5	<1	4	-	-	<5	<5	<2	16	<0.1	-
ALS	EB1018995	19/10/10	QC4	Duplicate of BHA4400-0.15m	6	<1	4	-	<5	<5	<2	45	<0.1	-
				Relative Percentage Difference (RPD) between BHA4400-0.15m & QC4	-	-	0%	-	-	-	-	95%	-	-
SGS	SEB2595	19/10/10	QC4A	Triplicate of BHA4400-0.15m	5	<0.3	3.4	-	1.9	3	1.3	14	<0.05	-
				Relative Percentage Difference (RPD) between BHA4400-0.15m & QC4A	-	-	16%	-	-	-	-	13%	-	-
ALS	EB1018995	19/10/10	BHA4500-0.15m	5	<1	3	-	-	<5	<5	<2	14	<0.1	-
ALS	EB1018995	19/10/10	BHA4600-0.15m	5	<1	6	-	-	<5	<5	<2	23	<0.1	-
ALS	EB1018995	19/10/10	BHA4700-0.15m	5	<1	6	-	-	13	40	4	53	<0.1	-
ALS	EB1018995	19/10/10	BHA4800-0.15m	<5	<1	6	-	-	12	12	2	49	<0.1	-
ALS	EB1018995	19/10/10	BHA4900-0.15m	<5	<1	6	-	-	6	5	2	27	<0.1	-
ALS	EB1018995	19/10/10	BHA5000-0.15m	6	<1	3	-	-	<5	<5	<2	29	<0.1	-
ALS	EB1018995	19/10/10	QC5	Duplicate of BHA5000-0.15m	6	<1	3	-	<5	<5	<2	31	<0.1	-
				Relative Percentage Difference (RPD) between BHA5000-0.15m & QC5	-	-	0%	-	-	-	-	7%	-	-
SGS	SEB2595	19/10/10	QC5A	Triplicate of BHA5000-0.15m	6	<0.3	3.2	-	1.2	3	1.4	30	<0.05	-
				Relative Percentage Difference (RPD) between BHA5000-0.15m & QC5A	-	-	8%	-	-	-	-	3%	-	-
ALS	EB1018995	19/10/10	BHA5100-0.15m	6	<1	3	-	-	<5	6	<2	23	<0.1	-
ALS	EB1018995	19/10/10	BHA5200-0.15m	6	<1	4	-	-	<5	14	<2	48	<0.1	-
ALS	EB1018995	19/10/10	BHA5300-0.15m	5	<1	3	-	-	<5	8	<2	62	<0.1	-
ALS	EB1018995	18/10/10	QC2	Rinsate Blank	<0.001	<0.0001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.0001	-
ALS	EB1018995	19/10/10	QC7	Rinsate Blank	<0.001	<0.0001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.0001	-
ALS	EB1018995	19/10/10	QC8	Rinsate Blank	<0.001	<0.0001	<0.001	-	<0.001	<0.001	<0.001	<0.005	<0.0001	-
ALS	EB1018995	19/10/10	TB1	Trip Blank	-	-	-	-	-	-	-	-	-	-
ALS	EB1018995	20/10/10	TB2	Trip Blank	-	-	-	-	-	-	-	-	-	-
ALS	EB1018995	20/10/10	TB3	Trip Blank	-	-	-	-	-	-	-	-	-	-

Notes:
-- Not analysed
(QC) Interlab split
(QCA) Blind intra-lab duplicate
N/A No guideline available
Exceeds health-based investigation level (HL) for standard residential setting (A) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998.
Exceeds environmental investigation level (EL) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998.
* Derived from the Unpublished Department of Environment, Queensland, Guidelines for Service Station Assessments (TPH/UTEX guideline limits).
QC2, QC7 & QC8 are rinsate water samples, all measurements are in µg/L.

Parameter	Heptachlor	Chlordane	Aldrin	Dieldrin	DDD, DDE	DDT	Other OC Pesticides	Ethion	Monocrotophos	Parathion	Biomphosph-ethyl	Other OP Pesticides
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of reporting (ALS)	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.2	0.2	0.05	0.05
HIL(a)	10	50	10	10	200		N/A	N/A	N/A	N/A	N/A	N/A
EIL	N/A	N/A	0.2	0.2	0.2	0.2	N/A	N/A	N/A	N/A	N/A	N/A

Lab	Lab batch #	Sample date	Sample / Depth (m)	HPLC(a)		10	50	10	10	200	N/A	N/A	N/A	N/A	N/A	N/A
				BIL	N/A	N/A	0.2	0.2	0.2	0.2	N/A	N/A	N/A	N/A	N/A	N/A
ALS	EB1018995	18/10/10	BHA10-0.15m		<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA20-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA30-0.15m		<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA40-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA50-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA60-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA70-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA80-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA90-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA100-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA170-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA180-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA130-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	QC1	Duplicate of BHA130-0.15m		<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
Relative Percentage Difference (RPD) between BHA130-0.15m & QC1																
SGS	SEB2595	18/10/10	QC1A	Triplicate of BHA130-0.15m	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.2	<-0.2	<-0.2	<-0.2	<-0.2
Relative Percentage Difference (RPD) between BHA130-0.15m & QC1A																
ALS	EB1018995	18/10/10	BHA140-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA150-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA160-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	18/10/10	BHA170-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA180-0.15m													
ALS	EB1018995	19/10/10	BHA190-0.15m													
ALS	EB1018995	19/10/10	BHA200-0.15m													
ALS	EB1018995	19/10/10	BHA210-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA220-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA230-0.15m		<0.05	<0.05	<0.05	<0.06	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA240-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA250-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA260-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	QC3	Duplicate of BHA260-0.15m	<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
Relative Percentage Difference (RPD) between BHA260-0.15m & QC3																
SGS	SEB2595	19/10/10	QC3A	Triplicate of BHA260-0.15m	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.2	<-0.2	<-0.2	<-0.2	<-0.2
Relative Percentage Difference (RPD) between BHA260-0.15m & QC3A																
ALS	EB1018995	19/10/10	BHA270-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA280-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA290-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA291.0m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA292.0m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA292.5m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA293m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA300.2m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA301m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA302m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA302.5m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA303m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA310-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA320-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA330-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA340-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA350-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA360-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	BHA370-0.15m		<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
ALS	EB1018995	19/10/10	QC6			<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
Relative Percentage Difference (RPD) between BH370.15m & QC6																
SGS	SEB2595	19/10/10	QC6A	Triplicate of BH370.15m	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.2	<-0.2	<-0.2	<-0.2	<-0.2
Relative Percentage Difference (RPD) between BH370.15m & QC6A																
ALS	EB1018995	19/10/10	BH380-0.15m		<-0.29	<-0.29	<-0.29	<-0.29	<-0.3	<-0.3	<-0.29	<-0.29	<-0.3	<-0.3	<-0.29	<-0.29
ALS	EB1018995	19/10/10	BH390-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH400-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH410-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH420-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH430-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH440-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH450-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH460-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH470-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH480-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH490-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	BH500-0.15m		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
ALS	EB1018995	19/10/10	QC5		<-0.05	<-0.05	<-0.05	<-0.05	<-0.2	<-0.05	<-0.05	<-0.2	<-0.2	<-0.2	<-0.05	<-0.05
Relative Percentage Difference (RPD) between BH500.15m & QC5																

Notes:

- Not analysed
- (S) Interlab split
- (D) Blind intralab duplicate

N/A No guideline available

Exceeds health-based investigation level (HIL) for standard residential setting (A) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998

Exceeds environmental investigation level (EIL) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998.

— Derived from the Unpublished Department of Environment, Queensland, Guidelines for Service Station Assessments (TPIWUTX guideline limit)

QC4-QC7 are water samples, all measurements are in µg/L.

Table 5.3
TPH/BTEX/TOTAL PAH RESULTS

Shoal Point Bay. Site investigation results				Parameter	Benzene	Ethylbenzene	Toluene	Total Xylene	C6-C9 Fraction	C10-C14 Fraction	C15-C18 Fraction	C9-C18 Fraction	C10-C18 Fraction
				Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Limit of reporting (ALS)	0.2	0.5	0.5	0.5	10	50	100	100	50
				HL(a)	14	14	14	14	100*	100*	1000*	1000*	1000*
Lab	Lab batch #	Sample date:	Samples / Depth (m)	ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ALS	EB1018995	18/10/10	BHA10-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA20-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA30-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA40-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA50-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA60-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA70-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA80-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA90-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA100-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA110-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA120-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA130-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	QC1	Duplicate of BHA130-0.15m	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
SGS	SEB2595	18/10/10	QC1A	Triplet of BHA130-0.15m	<0.1	<0.1	<0.1	<0.3	<20	<20	<50	<50	---
ALS	EB1018995	18/10/10	BHA140-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA150-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA160-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA170-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA180-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA190-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA200-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA210-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA220-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA230-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA240-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA250-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA260-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	QC3	Duplicate of BHA260-0.15m	<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
SGS	SEB2595	18/10/10	QC3A	Triplet of BHA260-0.15m	<0.1	<0.1	<0.1	<0.3	<20	<20	<50	<50	---
ALS	EB1018995	18/10/10	BHA270-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA280-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA290-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA300-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA310-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA320-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA330-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA340-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA350-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA360-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA370-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	QC6	Duplicate of BHA370-0.15m	---	---	---	---	---	---	---	---	---
SGS	SEB2595	18/10/10	QC6A	Triplet of BHA370-0.15m	---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA380-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA390-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA400-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA410-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA420-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA430-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA440-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	QC4	Duplicate of BHA440-0.15m	---	---	---	---	---	---	---	---	---
SGS	SEB2595	18/10/10	QC4A	Triplet of BHA440-0.15m	---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA450-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA460-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA470-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA480-0.15m		---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	BHA490-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA500-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	QC5	Duplicate of BHA500-0.15m	---	---	---	---	---	---	---	---	---
SGS	SEB2595	18/10/10	QC5A	Triplet of BHA500-0.15m	<0.1	<0.1	<0.1	<0.3	<20	<20	<50	<50	---
ALS	EB1018995	18/10/10	BHA510-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA520-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	BHA530-0.15m		<0.2	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
ALS	EB1018995	18/10/10	QC2	Rinsete Blank	---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	QC7	Rinsete Blank	---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	QC8	Rinsete Blank	---	---	---	---	---	---	---	---	---
ALS	EB1018995	18/10/10	TB1	Trip Blank	<1	<2	<2	<2	<2	<20	---	---	---
ALS	EB1018995	20/10/10	TB2	Trip Blank	<1	<2	<2	<2	<2	<20	---	---	---
ALS	EB1018995	20/10/10	TB3	Trip Blank	<1	<2	<2	<2	<2	<20	---	---	---

Notes:

- (N) Not analysed
- (B) Interlab split
- (D) Blind intralab duplicate
- N/A No guideline available
- Exceeds health-based investigation level (HIL) for standard residential setting (A) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998.
- Exceeds environmental investigation level (ERL) of the DRAFT Guidelines for the Assessment and Management of Contaminated Lands in Queensland, May 1998.
- * Derived from the Unpublished Department of Environment, Queensland, Guidelines for Service Station Assessments (TPH/BTEX) guideline limits.
- QC4-QC7 are water samples, all measurements are in ug/L.
- C6-C9 results are indicative of chloroform interference within rinsete water (presence of chlorine within rinsete water)

Table 5.4
Groundwater Analytical Results
Metals

Shoal Point Bay. Site
Investigation results

				Parameter	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
				Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Limit of reporting (ALS)					1	0.1	1	1	1	1	5	0.1
Australian Drinking Water Guidelines (2006)					7	2	50	2000	10	20	3000	1
Maintenance of Aquatic Ecosystems (Fresh Waters)					50	0.2-2.0	10	2.0-5.0	1.0-5.0	15-150	15-50	0.1
Maintenance of Aquatic Ecosystems (Marine Waters)					50	2	50	5	5	15	50	0.1
Irrigation					100	10	1000	200	200	200	2000	2
Stock Watering					500	10	1000	500	100	1000	20000	2
Lab	Lab batch #	Sample date:	Sample ID									
ALS	EB1018995	20/10/2010	GW1*		-	-	-	-	-	-	-	-
-	-	13/11/2010	GW1*		-	-	-	-	-	-	-	-
ALS	EB1018995	20/10/2010	GW2		36	1.6	57	82	2190	36	739	<0.1
SGS	SB83183	13/11/2010	GW2		15	<0.1	<1	3	<1	2	5	<0.1
SGS	SB83183	13/11/2010	QC9		15	<0.1	<1	2	<1	2	4	<0.1
Relative Percentage Difference (RPD) between GW2 & QC9					0%	---	---	40%	---	0%	22%	---
ALS	EB1020676	13/11/2010	QC9A		15	<0.1	<1	2	<1	2	<5	---
Relative Percentage Difference (RPD) between GW2 & QC9A					0%	---	---	40%	---	0%	---	---
ALS	EB1019214	23/10/2010	GW3		64	<0.1	<1	4	<1	2	<5	<0.1
SGS	SB83183	13/11/2010	GW3		78	<0.1	2	<1	<1	2	2	<0.1
ALS	EB1018995	20/10/2010	GW4		362	0.2	4	9	30	4	23	<0.1
SGS	SB83183	13/11/2010	GW4		330	<0.1	2	<1	<1	1	6	<0.1
ALS	EB1018995	20/10/2010	GW5		20	<0.1	1	5	8	3	12	<0.1
SGS	SB83183	13/11/2010	GW5		15	<0.1	1	<1	<1	3	3	<0.1
SGS	SB83183	13/11/2010	GW6		15	<0.1	5	1	2	3	14	<0.1
SGS	SB83183	13/11/2010	GW7		21	<0.1	<1	<1	<1	2	3	<0.1
SGS	SB83183	13/11/2010	GW8		24	<0.1	2	2	<1	2	3	<0.1
SGS	SB83183	13/11/2010	GW9		11	<0.1	1	4	<1	4	22	<0.1
SGS	SB83183	13/11/2010	GW10		1	<0.1	<1	2	<1	6	43	<0.1

- Notes:
- GW1 was dry upon sampling
 - Not analysed
 - (QC) Interlab split
 - N/A No guideline available
 - ANZECC/NHMRC (2000) "Australian Water Quality Guidelines for the protection of Fresh Waters". Prepared for the National Water Quality Management Strategy. (Fresh waters - 95% level of protection).
 - ANZECC/NHMRC (2000) "Australian Water Quality Guidelines for the protection of Marine Waters". Prepared for the National Water Quality Management Strategy. (Marine waters - 95% level of protection).
 - ANZECC (2000) Australian Water Quality Guidelines for Fresh and Marine Waters (Irrigation water quality)
 - ANZECC (2000) Australian Water Quality Guidelines for Fresh and Marine Waters (Livestock watering).
 - National Water Quality Management Strategy Australian Drinking Water Guidelines (Aesthetic Values) NHMRC/MRMMC 2006

Table 5.5

Shoal Point Bay. Site investigation results

				Parameter	Asbestos
				Units	g/kg
Lab	Lab batch #	Sample date:	Sample# / Depth (m)	Limit of reporting (QLD LABS)	0.1
QLD LABS	BSQ100844	18/10/10	BHA17/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA18/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA19/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA20/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA25/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA26/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA28/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA38/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA39/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA40/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA41/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA42/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA43/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA44/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA45/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA46/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA47/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA48/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA49/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA50/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA51/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA52/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	BHA53/0-0.15m		N
QLD LABS	BSQ100844	19/10/10	QC3		N
QLD LABS	BSQ100844	19/10/10	QC4		N

Notes:

N No Asbestos Detected at the laboratory reporting limit of 0.1g/kg

Detactable asbestos fibres recorded above the laboratories LOR.

NB No residual fibres should remain within the house block footprint.

Shoal Point Bay Development Group Pty Ltd
Stage 2 Detailed Site Contamination Assessment
Hodges Road,
Shoal Point, Mackay, QLD

Table 5.6
Groundwater Well Details

GROUNDWATER MONITORING WELL DETAILS
Lot 4 on RP817122, Shoal Point, Mackay QLD
Stage 2 Site Investigation & Groundwater Assessment

Well ID	Date of Installation	Top of Well Casing Elevation (mAHD)	Bottom of Well Casing Depth (mAHD)	Bottom of Well Casing Depth (mBGS)	Top of Well Screen (mAHD)	Top of Well Screen (mBGS)	Bottom of Well Screen (mAHD)	Bottom of Well Screen (mBGS)	Description of Screened Lithology
GW1	19-Oct-10	5.11	3.610	1.50	3.610	1.50	1.750	3.36	Sand
GW2	12-Nov-10	4.99	2.990	2.00	2.990	2.00	0.490	4.50	Sand
GW3	23-Oct-10	5.46	2.160	3.30	2.160	3.30	1.660	3.80	Sand
GW4	19-Oct-10	4.38	2.880	1.50	2.880	1.50	1.380	3.00	Sand
GW5	19-Oct-10	4.62	3.120	1.50	3.120	1.50	1.370	3.25	Sand
GW6	13-Nov-10	4.32	2.320	2.00	2.320	2.00	-0.180	4.50	Sand
GW7	13-Nov-10	4.32	2.320	2.00	2.320	2.00	-0.180	4.50	Sand
GW8	13-Nov-10	4.96	2.960	2.00	2.960	2.00	0.460	4.50	Sand
GW9	13-Nov-10	4.96	2.960	2.00	2.960	2.00	0.460	4.50	Sand
GW10	12-Nov-10	4.88	2.880	2.00	2.880	2.00	0.380	4.50	Sand

Notes:
ID = identification
mAHD = metres above Australia Height Datum
mBGS = metres below ground surface

Table 5.7
Groundwater Gauging
Results

GROUNDWATER MONITORING WELL DETAILS
Lot 4 on RP817122, Shoal Point, Mackay QLD
Stage 2 Site Investigation & Groundwater Assessment

Well ID	Date Measured	Event	Top-of Casing Elevation (mAHD)	Depth to Water (m BTOC)	Corrected Water Elevation (mAHD)	Comments
GW1	20-Oct-10	gauge	5.11	--	--	Well was dry
GW1	13-Nov-10	gauge	5.11	--	--	Well was dry
GW2	13-Nov-10	gauge	4.99	3.370	1.620	Well re-drilled to 4.5mBGS on 13/11/10
GW3	13-Nov-10	gauge	5.46	3.790	1.670	Well re-drilled to 3.8mBGS on 13/11/10
GW4	20-Oct-10	gauge	4.38	2.500	1.880	New well. In good condition
GW4	13-Nov-10	gauge	4.38	2.560	1.820	New well. In good condition
GW5	20-Oct-10	gauge	4.62	2.740	1.880	New well. In good condition
GW5	13-Nov-10	gauge	4.62	2.790	1.830	New well. In good condition
GW6	13-Nov-10	gauge	4.32	2.430	1.890	New well. In good condition
GW7	13-Nov-10	gauge	4.32	2.480	1.840	New well. In good condition
GW8	13-Nov-10	gauge	4.96	3.320	1.640	New well. In good condition
GW9	13-Nov-10	gauge	4.96	3.370	1.590	New well. In good condition
GW10	13-Nov-10	gauge	4.88	3.300	1.580	New well. In good condition

ID = identification
m BTOC = metres below top of casing
mAHD = metres above Australia Height Datum
m = metres

6. Quality assurance and control

6.1. Field quality assurance (QA)

All sampling was undertaken by appropriately qualified and trained environmental scientists in accordance with AS4482.1-2005.

Quality assurance (QA) samples were collected during the investigation for quality control purposes. This included the collection of 6 duplicate soil samples, all of which were split into triplicate samples.

All duplicate samples were analysed by ALS Brisbane and all triplicate samples were sent to SGS, a third party NATA accredited laboratory.

Three (3) rinsate samples were collected following the decontamination of the Jarrett head hand auger during each day of soil sampling and from the bailer used during the groundwater sampling process. Three (3) trip blank samples were added to the sample batch prior to the transport of chilled eskies to the laboratory.

The sampling tools (split spoon sampler and Jarrett head hand auger) were decontaminated between sampling in accordance with standard procedures. This involved the removal of soil followed by cleaning of the implements with a phosphate-free detergent and rinsing with clean water.

Similarly, Teflon-lined bailers used for the collection of groundwater samples were washed with a phosphate-free detergent and rinsed in clean water between piezometers.

The implements used for crushing and mixing of interlaboratory split (6 in total) and blind intralaboratory duplicate (6 in total) samples, were rinsed in phosphate-free detergent between samples followed by a clean water rinse.

All split and duplicate samples were homogenised in the field. Generally the mixing of samples for quality control purposes when analysed for Volatile Organic Compounds (VOC's) is considered inappropriate and can cause a potential loss of product due to volatilisation. However, based on

other samples analysed, the site history and the results of previous investigations VOCs were not a significant contaminant of concern.

The results for all fractions of TPH/BTEX in the splits/duplicates were below the limit of reporting. For the non-homogenised primary samples there was exceedance of the LOR's. Given these and previous results and in consideration of the historical use of the site it is not considered that this procedure has adversely affected the quality or reliability of the data.

All samples were stored in laboratory supplied glass jars or bottles, sealed with Teflon-lined lids and stored in a chilled esky. Samples were submitted to ALS and/or SGS Laboratories with appropriate chain-of-custody documentation.

Chain-of-custody and laboratory quality control documentation is supplied with the analytical results in Appendix 1.

Three (3) rinsate blanks were collected from the common soil sampling equipment which was utilised across the site following cleaning with a phosphate-free detergent. These samples were used to evaluate the efficacy of the field decontamination procedure and the risk of cross contamination. Table 6.1.1 shows the sampling equipment rinsate results against arsenic (a key COPC for this investigation).

Table 6.1.1 Equipment rinsate results

Rinsate sample	Date	Equipment	Arsenic (mg/L)
QC2	18.10.10	Hand auger	<0.001
QC7	19.10.10	Hand auger	<0.001
QC8	19.10.10	Teflon-lined bailer	<0.001

The rinsate results were all below ALS LOR (<0.001mg/L) and indicates the decontamination process was adequate to negate the potential effects of cross contamination between sampling locations.

6.2. Scrutiny of initial results

Laboratory results received following fieldwork and sampling on 20 October 2010 were subjected to scrutiny to assess their veracity and complete the

field quality assurance process. As described in sections 5.3.2 and 5.3.3, this scrutiny identified that groundwater results exhibited concentrations of metals that did not accord with the investigators' expectations based on the sampling and analysis plan devised for the investigation.

Given the unexpected data, a review of field QA was undertaken to identify potential factors that might explain the results. This review identified that groundwater samples may have been contaminated during drilling and piezometer construction and the lack of groundwater available to allow proper development of the wells (particularly for GW2).

Given these possible sources of error it was considered that replacing the affected well and resampling was appropriate. It was decided that additional wells would be installed simultaneously to enable the delineation of the contamination, in the event that the initial results were accurate. This further investigation was conducted on 13 November, 2010.

As part of the second sampling event, GW2 was replaced with a deeper well then re-developed and resampled. GW6-GW10 were installed to facilitate delineation of the contamination identified in the first round of results for GW2 and GW4. GW3, GW4 and GW5 were subjected to further development prior to re-sampling.

Groundwater analytical results for samples recovered on 13 November 2010 from the ten groundwater wells displayed no contamination in excess of the applicable guideline limits, except for GW4 which contained Arsenic (330µg/L) exceeding the exceeding the GIL's for Irrigation (100µg/L) and for the Maintenance of Aquatic Ecosystems (50µg/L).

It is our opinion that the contamination identified in the sampling conducted on 20 October 2010 is an artifact from well installation and construction and should be disregarded.

On the basis of the quality assurance procedures employed, the data from sampling conducted on 13 November 2010 is considered reliable for the purpose of this assessment.

6.3. Internal quality control

The results of the original and duplicate samples were compared via the relative percentage difference (RPD) method as shown in tables 5.1-5.4 included at the end of Section 5.

Generally the RPD is expected to be in the range of 30% – 50% (as per AS4482.1 2005) however greater variation may occur due to numerous factors, including:

- very low analyte concentrations
- organic analysis (which generally contains greater variation than inorganic analysis)
- sample heterogeneity.

Where measured analytes returned levels below the respective laboratory's limits of reporting the RPD could not be calculated. Where concentrations of the specified analytes were detected, the quality control duplicate RPD results ranged from 0% to 95%.

All calculated RPD values were below the 50% acceptable limit for all duplicates and triplicate samples with the exception of RPDs calculated between BHA26/0-0.15m and BHA44/0-0.15m and their respective duplicates (QC3 & QC4).

The respective triplicate samples sent to SGS (QC3A & QC4A) were below the acceptable 50% range. RPD results between the primary sample BHA26/0-0.15m and its duplicate was 55% for QC3 and RPD exceedance between BHA44/0-0.15m and its duplicate was calculated at 95%. RPD exceedances in both primary samples when compared to their replicates can be attributed to low analyte concentrations in both the primary and the duplicate sample. Sample heterogeneity is not considered likely in sands. These RPD exceedances are not considered significant as the results for the primary and replicate samples are well below the EIL's and HIL's.

On the basis of the RPD comparisons, the duplicate results demonstrate that the field QA processes generally were adequate and that the laboratory results are precise. The split sample results indicate a satisfactory correlation between the laboratories.

6.4. Laboratory quality control

Laboratory quality control (QC) included duplicate analysis of 10% of the samples and analysis of Laboratory Control Samples (LCS), Method Blanks and Matrix Spikes at a rate of 5% for each batch.

Laboratory QC data is also presented in the certified laboratory reports and is included in Appendix 1. Laboratory QC analytical results are summarised below.

- For all matrices, no Method Blank value outliers occurred.
- For all matrices, no Duplicate outliers occurred with the exception of;
 - BHA22/0-0.15m showed poor duplication due to visually confirmed sample heterogeneity.
- Sample BHA38/0-0.15m required dilution prior to analysis due to matrix interferences. LOR values were laboratory adjusted accordingly. Surrogates and matrix spike recovery values were not determined for this sample.
- For all matrices, no Matrix Spike outliers occurred.
- For all regular sample matrices, no surrogate recovery outliers occurred.

- No Analysis Holding Time Outliers existed.
- Quality Control Sample Frequency Outliers existed for BHA38/0-0.15m for OC/OP analyses due to matrix interferences, hence no matrix spike recoveries were determined by the laboratory. Similarly BHA22/0-0.15m recorded a matrix spike recovery percentage less than the lower DQO of 70% for Zinc.
- Laboratory Control Spikes (LCS) for OC/OP analytes Methoxychlor and Demeton-S-methyl showed recovery percentages less than the laboratories lower control limit of 52.4%, 31.2% and showed percentages greater than upper control limit of 130% for Monocrotophs.
- LCS for BTEX analyses in water recorded recovery percentages greater than the upper percentile of 122-129% for BTEX constituents. Toluene LCS recovery percentages for the trip blank samples (TB1-TB3) were recorded above the upper DQO of 119.6%.

In summary Gilbert & Sutherland considers that the laboratory QC results are acceptable and that the data can be relied upon for the purposes of this investigation.

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7. Conclusions and discussion

This Stage 1 and Stage 2 Site Investigation report was undertaken to supplement previous contamination investigations and specifically to address the Department of Environment and Resource Management's (DERM's) preliminary approval for a Reconfiguration of Lot application for Lot 4 on RP817122 located on Hodges Road, Shoal Point.

Based on the results obtained from the soil and groundwater assessment, which forms the quantitative part of this Stage 1 & Stage 2 assessment, Gilbert & Sutherland makes the following observations;

7.1. Soil

- No shallow soil contamination was identified at concentrations above the applicable residential development guideline limits (HIL's) across the entirety of the site and significantly surrounding the former locations of the livestock dip and storage shed.
- No shallow soil contamination above the applicable HIL's and EIL's was identified within the footprints of the former homestead nor within the footings of the removed sheds (three in total) along the foreshore area (northern portion) of the site with the exception of BHA18/0-0.15m. Soil from BHA18/0-0.15m contained concentrations of chromium (64mg/kg) and nickel (72mg/kg) in excess of the Draft QLD EIL guidelines of 50mg/kg and 60mg/kg respectively. Subsequent speciation of the primary sample, BHA18/0-0.15m, identified that no Chromium VI (hexavalent chromium) was present. Chromium III (trivalent chromium) was present at a concentration of 64mg/kg.
- No soil contamination in excess of the EIL's and HIL's existed within deep bores drilled to a maximum depth of 3.0m below NSL at the approximate locations of the entry and exit to the former livestock dip. Natural sandy soils were present to the full depth of investigation at these two boreholes (BHA29 & BHA30).

- No soil samples recovered from the broad-acre assessment, covering the entirety of the site, displayed concentrations of COPC's above the applicable HIL's or EIL's.
- Qualitative asbestos analysis of 23 soil samples extracted from the approximate locations of the removed sheds and former dwellings did not contain any asbestos fibres in soils when analysed under polarised light microscopy.
- No evidence of uncontrolled filling was discovered within two investigative boreholes (IB1 & IB2) drilled along the foreshore dune area of the site adjacent to the entry road and existing residential dwelling, nor in any of the deep boreholes or groundwater wells.

7.2. Groundwater

- Five groundwater wells (GW1-GW5) were installed on 19 October 2010. Sampling and analysis of the groundwater encountered in GW2, GW3, GW4 and GW5 identified concentrations of some or all of: Arsenic, Chromium, Copper, Lead, Nickel and Zinc in excess of the Groundwater Investigation Levels (GIL's) derived for the *Australian Drinking Water Guidelines* and the *Maintenance of Aquatic Ecosystems (Marine Waters) guidelines for the protection of 95% of species*. Lead concentrations in GW2 exceeded the Stock watering and irrigation guideline limits. Arsenic concentrations in GW4 exceeded the irrigation GIL's.
- An additional five groundwater wells were drilled on the 12th and 13th of November 2010. Groundwater samples were extracted from nine wells (GW2-GW10) and Arsenic contamination was confirmed only in GW4 (330µg/L). The contamination in the other wells identified in the first sampling event is attributed to well construction and installation and insufficient well development due to variable groundwater levels and time constraints.

7.3. Risk assessment

Groundwater contamination has been identified in a limited area in the vicinity of the former livestock

dip. The dip, which is almost certainly the source of contamination, has been removed.

No other possible source of arsenic contamination was identified during either the current or the 2004 Site Investigation.

Based on the groundwater data, there is no possibility that the contamination will spread to the residential area.

The area affected by the groundwater contamination is proposed to be developed as a Foreshore Park that will be embellished with relocatable facilities such as playground facilities, shade structures and barbeque facilities, picnic tables and bike paths. These facilities are compatible with an Esplanade and Beach Protection buffer. These embellishments will require Council approval of a future operational works application.

The proponent has received in-principle agreement from Council that it is willing to accept ownership of the Foreshore Park. Correspondence confirming this agreement is attached as Appendix 8. Council has confirmed that the proposed land-use of the foreshore park would continue following the transfer of the land to its ownership.

The groundwater contamination area has been estimated to affect an area of less than 700m² and is situated approximately 3m below the current ground surface. For the proposed land use, the only likely route of exposure would be in the event of groundwater extraction. The data indicates that the groundwater would be suitable for irrigation purposes and potentially for drinking, if the arsenic contamination was not present. It is therefore

proposed that groundwater extraction would be prohibited under the provisions of a site management plan.

The draft SMP is attached as Appendix 9. Provided groundwater extraction is prevented, the environmental and human health risk would be negligible.

7.4. Recommendations

The extent of groundwater contamination on the site has been adequately defined and delineated with respect to the applicable EIL's and HIL's.

The identified area of groundwater contamination lies wholly within a proposed foreshore reserve and therefore presents no constraint to the proposed residential development of the site in accordance with Drawing No. 10527.1.0.

The groundwater contamination beneath the park area poses no risk to the recreational use of the park by residents of the proposed development. However, the groundwater is unsuitable for irrigation and a Site Management Plan (SMP) is appropriate to preclude access to the contaminated groundwater.

At the time of preparing this report, no further site contamination constraints were evident. Accordingly, Gilbert & Sutherland considers the site suitable for the proposed residential use and recommends that upon subdivision of the park area, the remainder of the site be removed from the Environmental Site Register (EMR). The park area should remain on the EMR and be subject to management in accordance with the approved SMP.

8. Limitations of reporting

Gilbert & Sutherland Pty Ltd has attempted to be accurate providing this information. The interpretation of scientific data, however, involves professional judgement. As such, interpretation is open to error.

In recognising the potential for errors in scientific interpretation, Gilbert & Sutherland Pty Ltd does not guarantee that the information is totally accurate or complete and clients are advised not to rely solely on this information when making commercial decisions. Any representation, statement, opinion or advice, expressed or implied

is made in good faith and on the basis that the authors, Gilbert & Sutherland Pty Ltd, their agents or employees are not liable (whether by reason of lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.

Furthermore, this information should not be relied upon by any other persons than the Third Party Reviewer, DERM and the client for whom this information was compiled. This information reflects the specific brief and the budget of the client concerned, who enjoys an individual tolerance of risk.

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9. Appendix 1 - NATA certified laboratory documents

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1st prelim by Friday 2.10.10 2.11.11

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Gilbert & Sutherland

ADDRESS / OFFICE: Robins

PROJECT MANAGER (PM): Personal Information

PROJECT ID: 10527

SITE: Shoal Point, Mackay

RESULTS REQUIRED (Date): Std

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

SAMPLER: sch4p4

MOBILE: (6) Personal information

PHONE: 55 78 99 44

EMAIL REPORT TO: Personal@groups.com

EMAIL INVOICE TO: (if different to report) (6) Personal@groups.com

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

S
2
N
E
P
M
S

S-12 OC/OP

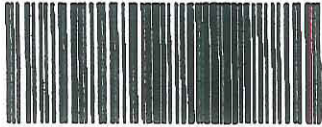
S-4 THW/EX

ASBESTOS IN SOIL

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

ALS Laboratory Group

Environmental Division
Brisbane
Work Order
EB1018995



Telephone : +61-7-3243 7222

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
1	BHA1/0-0.15m	S	18/10/10	-	G	1
2	BHA1/0.2-0.3m	S	18/10/10	-	G	1
3	BHA2/0-0.15m	S	18/10/10	-	G	1
4	BHA2/0.2-0.3m	S	18/10/10	-	G	1
5	BHA3/0-0.15m	S	18/10/10	-	G	1
6	BHA3/0.2-0.3m	S	18/10/10	-	G	1
7	BHA4/0-0.15m	S	18/10/10	-	G	1
8	BHA4/0.2-0.3m	S	18/10/10	-	G	1
9	BHA5/0-0.15m	S	18/10/10	-	G	1
10	BHA5/0.2-0.3m	S	18/10/10	-	G	1
11	BHA6/0-0.15m	S	18/10/10	-	G	1
12	BHA6/0.2-0.3m	S	18/10/10	-	G	1

RELINQUISHED BY:

sch4p4 (6) Personal information

Of: Gilbert & Sutherland

Name:

Of:

Date: 21/10/2010

Time: 11:00

Date:

Time:

RECEIVED BY

sch4p4 (6) Personal information

Of: sch4p4 (6) Personal information

Name:

Of:

Date: 21/10/10

Time: 15:00

Date:

Time:

METHOD OF SHIPMENT

Con' Note No:

Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

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COC Page 1 of

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CLIENT: Gilbert & Sutherland						SAMPLER: sch4p4 (6) Personal information								 ALS Laboratory Group															
ADDRESS / OFFICE: Robina						MOBILE:																							
PROJECT MANAGER (PIC): Personal information						PHONE: 55 78 99 44																							
PROJECT ID: 10527						P.O. NO.:						EMAIL REPORT TO: Personal @roynpas.com																	
SITE: Shoal Point, Mackay						QUOTE NO.:						EMAIL INVOICE TO: (if different to report) 6) Personal @roynpas.com																	
RESULTS REQUIRED (Date): Pls see notes						ANALYSIS REQUIRED Including SUITES (note - suite codes must be listed to attract suite prices)																							
FOR LABORATORY USE ONLY						COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:						Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.																	
COOLER SEAL (circle appropriate) Intact: Yes No N/A																													
SAMPLE TEMPERATURE																													
CHILLED: Yes No																													
SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION																								
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	S	-	N	E	P	M	M	S	S-12 OC/OR	B-4 TW/HTX	AASSTOS IN SOIL												
13	BHA7/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
14	BHA7/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
15	BHA8/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
16	BHA8/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
17	BHA9/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
18	BHA9/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
19	BHA10/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
SWR	BHA10/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
20	BHA11/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
21	BHA11/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
22	BHA12/D-0.15m	S	18/10/10	-	G	1	✓	✓																					
23	BHA12/D-2.0.3m	S	18/10/10	-	G	1												HOLD											
RELINQUISHED BY:						RECEIVED BY:						METHOD OF SHIPMENT																	
Name: Personal information						Date: 21/10/2010						Name: sch4p4 (6) Personal information						Date: 21/10						Con' Note No:					
Of: Gilbert & Sutherland						Time: 11:00						Of:						Time: 15:00											
Name:						Date:						Name:						Date:						Transport Co:					
Of:						Time:						Of:						Time:											
<p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;</p> <p>V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;</p> <p>Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.</p>																													

COC Page 1 of

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Gilbert & Sutherland

ADDRESS / OFFICE: Robins

PROJECT MANAGER (PN): Personal information

PROJECT ID: 10527

SITE: Shoal Point, Mackay

RESULTS REQUIRED (Date): PIs see notes

FOR LABORATORY USE ONLY:

COOLER SEAL (date appropriate)

Intact: Yes No N/A

SAMPLE TEMPERATURE

CHILLED: Yes No

SAMPLER: sch4p4 (6) Personal information

MOBILE:

PHONE: 55 78 99 44

EMAIL REPORT TO: Personal information@rocougts.com

EMAIL INVOICE TO: (if different to report) (6) Personal information@rocougts.com

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

S
-
2

N
E
F
M

M
S

\$-12 OC/OP

\$-4 TP/AT/EX

ASBESTOS IN SOIL

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

QUOTE NO.:

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE INFORMATION (note: S = Soil, W = Water)

CONTAINER INFORMATION

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
36	BHA19/0-0.15m	S	19/10/10	-	G	1	✓	✓												
37	BHA19/0.2-0.3m	S	19/10/10	-	G	1														
38	BHA20/0-0.15m	S	19/10/10	-	G	1	✓	✓												
39	BHA20/0.2-0.3m	S	19/10/10	-	G	1														
40	BHA21/0-0.15m	S	19/10/10	-	G	1	✓	✓												
41	BHA21/0.2-0.3m	S	19/10/10	-	G	1														
42	BHA22/0-0.15m	S	19/10/10	-	G	1	✓	✓												
43	BHA22/0.2-0.3m	S	19/10/10	-	G	1														
44	BHA23/0-0.15m	S	19/10/10	-	G	1	✓	✓												
45	BHA23/0.2-0.3m	S	19/10/10	-	G	1														
46	BHA24/0-0.15m	S	19/10/10	-	G	1	✓	✓												
47	BHA24/0.2-0.3m	S	19/10/10	-	G	1														

RELINQUISHED BY:

RECEIVED BY

METHOD OF SHIPMENT

Name: (6) Personal information

Date: 21/10/2010

Name: sch4p4 (6) Personal information

Date: 21/10/10

Corr' Note No:

Of: Gilbert & Sutherland

Time: 11:00

Of:

Time: 15:00

Transport Co:

Name:

Date:

Name:

Date:

Transport Co:

Of:

Time:

Of:

Time:

Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;

V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

CHAIN OF CUSTODY DOCUMENTATION										 ALS Laboratory Group			
CLIENT: Gilbert & Sutherland					SAMPLER: sch4p4 (6) Personal information								
ADDRESS / OFFICE: Robins					MOBILE:								
PROJECT MANAGER (PM): (6) Personal information					PHONE: 55 78 99 44								
PROJECT ID: 10527					EMAIL REPORT TO: (6) Personal information@groups.com								
SITE: Shoal Point, Mecklenburg					P.O. NO.:					EMAIL INVOICE TO: (6) Personal information@groups.com			
RESULTS REQUIRED (Date): PIs see notes					QUOTE NO.:					ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY					COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.			
COOLER SEAL (circle appropriate):													
Intact: Yes No N/A													
SAMPLE TEMPERATURE:													
CHILLED: Yes No													
SAMPLE INFORMATION (note: S = Soil, W = Water)										CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	S	2	NE	PM	MS		
48	BHA25/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓			
49	BHA25/0.2-0.3m	S	19/10/10	-	G	1	HOLD						
50	BHA26/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓			
51	BHA26/0.2-0.3m	S	19/10/10	-	G	1	HOLD						
52	BHA27/0-0.15m	S	19/10/10	-	G	1	✓	✓					
53	BHA27/0.2-0.3m	S	19/10/10	-	G	1	HOLD						
54	BHA28/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓			
55	BHA28/0.2-0.3m	S	19/10/10	-	G	1	HOLD						
56	BHA29/0.2m	S	19/10/10	-	G	1	✓	✓					
57	BHA29/1.0m	S	19/10/10	-	G	1	✓	✓					
58	BHA29/2.0m	S	19/10/10	-	G	1	✓	✓					
59	BHA29/2.5m	S	19/10/10	-	G	1	✓	✓					
RELINQUISHED BY:													
Name: (6) Personal information					Date: 21/10/2010		Name: sch4p4 (6) Personal information					RECEIVED BY	
Of: Gilbert & Sutherland					Time: 11:00		Of:					Date: 21/10	
Name:					Date:		Name:					Time: 15:00	
Of:					Time:		Of:					Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.													

ALS LABORATORY GROUP

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ENFM (204/5)

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RTI Act 2009

[illegible]

COC Page 1 of

CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Gilbert & Sutherland				SAMPLER: sch4p4(6) Personal information				 ALS Laboratory Group											
ADDRESS / OFFICE: Robina				MOBILE:															
PROJECT MANAGER (PM): sch4p4(6) Personal information				PHONE: 55 78 99 44															
PROJECT ID: 10527				EMAIL REPORT TO: sch4p4(6) Personal information@rogers.com															
SITE: Shoal Point, Mackay				P.O. NO.:				EMAIL INVOICE TO: (if different to report) sch4p4(6) Personal information@rogers.com											
RESULTS REQUIRED (Date): Pls see notes				QUOTE NO.:				ANALYSIS REQUIRED (including SUITES (note - suite codes must be listed to attract suite prices))											
FOR LABORATORY USE ONLY:				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.											
COOLER SEAL (circle appropriate)																			
Intact: Yes No N/A																			
SAMPLE TEMPERATURE																			
CHILLED: Yes No																			
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION															
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	S-2	S-12 OCOP	S-4 TYPH/TEX	ASBESTOS IN SOIL									
72	BHA34/0-0.15m	S	19/10/10	-	G	1	✓	✓											
73	BHA34/0.2-0.3m	S	19/10/10	-	G	1													HOLD
74	BHA35/0-0.15m	S	19/10/10	-	G	1	✓	✓											
75	BHA35/0.2-0.3m	S	19/10/10	-	G	1													HOLD
76	BHA36/0-0.15m	S	19/10/10	-	G	1	✓	✓											
77	BHA36/0.2-0.3m	S	19/10/10	-	G	1													HOLD
78	BHA37/0-0.15m	S	19/10/10	-	G	1	✓	✓											
79	BHA37/0.2-0.3m	S	19/10/10	-	G	1													HOLD
80	BHA38/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓									
81	BHA38/0.2-0.3m	S	19/10/10	-	G	1													HOLD
82	BHA39/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓									
83	BHA39/0.2-0.3m	S	19/10/10	-	G	1													HOLD
RELINQUISHED BY:				RECEIVED BY:				METHOD OF SHIPMENT											
Name: sch4p4(6) Personal information				Date: 21/10/2010				Name: sch4p4(6) Personal information				Date: 21/10				Con' Note No:			
Of: Gilbert & Sutherland				Time: 11:00				Of: sch4p4(6) Personal information				Time: 15:00							
Name:				Date:				Name:				Date:				Transport Co:			
Of:				Time:				Of:				Time:							
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solis; B = Unpreserved Bag.																			

ALS LABORATORY GROUP

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CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Gilbert & Sutherland

ADDRESS / OFFICE: Robina

PROJECT MANAGER (CN): Personal information

PROJECT ID: 10527

SITE: Shoal Point, Mackay

RESULTS REQUIRED (Date): Pls see notes

FOR LABORATORY USE ONLY

COOLER SEAL (circle appropriate):

Intact: Yes No N/A

SAMPLE TEMPERATURE:

CHILLED: Yes No

SAMPLER: sch4p4(6) Personal information

MOBILE:

PHONE: 55 78 99 44

EMAIL REPORT TO: Personal information@rogroup.com

EMAIL INVOICE TO: (if different to report) Personal information@rogroup.com

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

S
-
2

N
E
E
D
E
D

M
S

S-12 OC/OP

S-4 TPT/STEX

ASBESTOS IN SOIL

Notes: e.g. Highly contaminated samples
e.g. "High PAHs expected".
Extra volume for QC or trace LORs etc.

ALS Laboratory Group



SAMPLE INFORMATION (note: S = Soil, W = Water)					CONTAINER INFORMATION	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
84	BHA40/0-0.15m	S	19/10/10	-	G	1
85	BHA40/0.2-0.3m	S	19/10/10	-	G	1
86	BHA41/0-0.15m	S	19/10/10	-	G	1
87	BHA41/0.2-0.3m	S	19/10/10	-	G	1
88	BHA42/0-0.15m	S	19/10/10	-	G	1
89	BHA42/0.2-0.3m	S	19/10/10	-	G	1
90	BHA43/0-0.15m	S	19/10/10	-	G	1
91	BHA43/0.2-0.3m	S	19/10/10	-	G	1
92	BHA44/0-0.15m	S	19/10/10	-	G	1
93	BHA44/0.2-0.3m	S	19/10/10	-	G	1
94	BHA45/0-0.15m	S	19/10/10	-	G	1
95	BHA45/0.2-0.3m	S	19/10/10	-	G	1

RELINQUISHED BY:

Name: sch4p4(6) Personal information

Of: Gilbert & Sutherland

Name:

Of:

Date: 21/10/2010

Time: 11:00

Date:

Time:

RECEIVED BY:

Name: sch4p4(6) Personal information

Of:

Name:

Of:

Date: 21/10

Time: 15:00

Date:

Time:

METHOD OF SHIPMENT

Cont' Note No:

Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS LABORATORY GROUP

COC Page 1 of

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21-415

File A

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CHAIN OF CUSTODY DOCUMENTATION										 ALS Laboratory Group									
CLIENT: Gilbert & Sutherland										SAMPLER: sch4p4(6) Personal information									
ADDRESS / OFFICE: Robina										MOBILE:									
PROJECT MANAGER (PM): Personal information										PHONE: 55 78 99 44									
PROJECT ID: 10527										EMAIL REPORT TO: Personal information@group.com									
SITE: Shoal Point, Mackay										EMAIL INVOICE TO: (if different to report) Personal information@group.com									
RESULTS REQUIRED (Date): Pls see notes										ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)									
QUOTE NO.:										Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.									
FOR LABORATORY USE ONLY										COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:									
COOLER SEAL (circle appropriate)																			
Intact: Yes No N/A																			
SAMPLE TEMPERATURE:																			
CHILLED: Yes No																			
SAMPLE INFORMATION (note: S = Soil, W=Water)										CONTAINER INFORMATION									
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	8-12 OC/OP	8-4 TP/ST/EX	ASBESTOS IN SOIL										
96	BHA46/0-0.15m	S	19/10/10	-	G	1	✓		✓										
97	BHA48/0.2-0.3m	S	19/10/10	-	G	1													
98	BHA47/0-0.15m	S	19/10/10	-	G	1	✓		✓										
99	BHA47/0.2-0.3m	S	19/10/10	-	G	1													
100	BHA48/0-0.15m	S	19/10/10	-	G	1	✓		✓										
101	BHA48/0.2-0.3m	S	19/10/10	-	G	1													
102	BHA49/0-0.15m	S	19/10/10	-	G	1	✓		✓										
103	BHA49/0.2-0.3m	S	19/10/10	-	G	1													
104	BHA50/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓									
105	BHA50/0.2-0.3m	S	19/10/10	-	G	1													
106	BHA51/0-0.15m	S	19/10/10	-	G	1	✓	✓	✓	✓									
107	BHA51/0.2-0.3m	S	19/10/10	-	G	1													
RELINQUISHED BY:										RECEIVED BY:									
Name: Personal information										Name: sch4p4(6) Personal information									
Of: Gilbert & Sutherland										Of: sch4p4(6) Personal information									
Name:										Name:									
Of:										Of:									
Date: 21/10/2010										Date: 21/10									
Time: 11:00										Time: 15:00									
Date:										Date:									
Time:										Time:									
METHOD OF SHIPMENT										Con' Note No:									
Transport Co:																			
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;																			
V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass;																			
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solis; B = Unpreserved Bag.																			

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S = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS LABORATORY GROUP

CLIENT: Gilbert & Sutherland				SAMPLER: sch4p4(6) Personal information				 ALS Laboratory Group								
ADDRESS / OFFICE: Robins				MOBILE:												
PROJECT MANAGER (PM): Personal information				PHONE: 55 78 99 44												
PROJECT ID: 10527				EMAIL REPORT TO: Personal@groupat.com												
SITE: Shoal Point, Mackay				P.O. NO.:				EMAIL INVOICE TO: (if different to report) Personal@groupat.com								
RESULTS REQUIRED (Date): Pls see notes				QUOTE NO.:				ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)								
FOR LABORATORY USE ONLY: COOLER SEAL (circle appropriate): Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LQRs etc.								
SAMPLE INFORMATION (note: S = Soil, W=Water)						CONTAINER INFORMATION										
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles										
108	BHAS2/O-0.15m	S	19/10/10	-	G	1	☒	☒	☒	☒						
109	BHAS2/O-0.2-0.3m	S	19/10/10	-	G	1	HOLD									
110	BHAS3/O-0.15m	S	19/10/10	-	G	1	☒	☒	☒	☒						
111	BHA53/O-0.2-0.3m	S	19/10/10	-	G	1	HOLD									
112	GW2	S	20/10/10	-	PAG	1	☒	SEE NOTE								PLS HOLD OC/OP SAMPLE BOTTLE FOR POTENTIAL ANALYSIS
113	GW4	S	20/10/10	-	PAG	1	☒	SEE NOTE								PLS HOLD OC/OP SAMPLE BOTTLE FOR POTENTIAL ANALYSIS
114	GW5	S	20/10/10	-	PAG	1	☒	SEE NOTE								PLS HOLD OC/OP SAMPLE BOTTLE FOR POTENTIAL ANALYSIS
115	QC1	S	18/10/10	-	G	1	☒	☒	☒							
116	QC1A	S	18/10/10	-	G	1	☒	☒	☒							
117	QC2	S	18/10/10	-	PAG	1	☒	☒								Pls Forward to SGS
118	QC3	S	19/10/10	-	G	1	☒	☒	☒	☒						
119	QC3A	S	19/10/10	-	G	1	☒	☒	☒	☒						Pls Forward to SGS
RELINQUISHED BY:						RECEIVED BY						METHOD OF SHIPMENT				
Name: Personal information						Name: sch4p4(6) Personal information						Con' Note No:				
Of: Gilbert & Sutherland						Of: sch4p4(6) Personal information						Transport Co:				
Date: 21/10/2010						Date: 21/10										
Time: 11:00						Time: 15:00										
Time:						Time:										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved;
V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solts; B = Unpreserved Bag.

COC Page 1 of

CHAIN OF CUSTODY DOCUMENTATION										 ALS Laboratory Group																			
CLIENT: Gilbert & Sutherland					SAMPLER: sch4p4(6) Personal information					 ALS Laboratory Group																			
ADDRESS / OFFICE: Robina					MOBILE:																								
PROJECT MANAGER (PM): sch4p4(6) Personal information					PHONE: 55 78 99 44																								
PROJECT ID: 10527					EMAIL ADDRESS TO: sch4p4(6) Personal information					EMAIL INVOICE TO: (if different to above) sch4p4(6) Personal information																			
SITE: Shoal Point, Mackay					P.O. NO.:					ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)																			
RESULTS REQUIRED (Date): Pls see notes					QUOTE NO.:					Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.																			
FOR LABORATORY USE ONLY					COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:																								
COOLER SEAL (circle appropriate)																													
Intact: Yes No NA																													
SAMPLE TEMPERATURE:																													
CHILLED: Yes No																													
SAMPLE INFORMATION (note: S = Soil, W=Water)										CONTAINER INFORMATION																			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	S	2	N	E	P	M	S	12	OCOP	S-4	THM8TEX	S-16	THM8-CHM8TEX										
118	QC4	S	19/10/10	-	G	1	✓																						
119	QC4A	S	19/10/10	-	G	1	✓													Pls Forward to SGS									
119	QC5	S	19/10/10	-	G	1	✓																						
119	QC5A	S	19/10/10	-	G	1	✓													Pls Forward to SGS									
120	QC6	S	19/10/10	-	G	1	✓																						
120	QC6A	S	19/10/10	-	G	1	✓													Pls Forward to SGS									
121	QC7	S	19/10/10	-	PAG	1	✓																						
122	QC8	S	20/10/10	-	P	1	✓																						
123	TB1	S	20/10/10	-	VS	1																							
124	TB2	S	20/10/10	-	VS	1																							
125	TB3	S	20/10/10	-	VS	1																							
126	QC9																												
RELINQUISHED BY:										RECEIVED BY:										METHOD OF SHIPMENT									
Name: sch4p4(6) Personal information					Date: 21/10/2010					Name: sch4p4(6) Personal information					Date: 21/10					Con' Note No:									
Of: Gilbert & Sutherland					Time: 11:00					Of:					Time: 15:00														
Name:					Date:					Name:					Date:					Transport Co:									
Of:					Time:					Of:					Time:														
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; SG = Sulphuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.																													

ALS LABORATORY GROUP

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Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order	: EB1018995		
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	Page	: 1 of 5
Order number	: ---	Quote number	: EB2010GILSUT0312 (BN/220/10)
C-O-C number	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point Mackay		
Sampler	: sch4p4(6) Personal information		

Dates			
Date Samples Received	: 21-OCT-2010	Issue Date	: 26-OCT-2010 16:52
Client Requested Due Date	: 29-OCT-2010	Scheduled Reporting Date	: 01-NOV-2010

Delivery Details			
Mode of Delivery	: Carrier	Temperature	: 3.8°C - 4.4°C - Ice present
No. of coolers/boxes	: 3 x MEDIUM	No. of samples received	: 126
Security Seal	: Intact.	No. of samples analysed	: 75

- General Comments
- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
 - Samples received in appropriately pretreated and preserved containers.
 - Samples QC1A, QC3A, QC4A, QC5A, QC6A have been forwarded to SGS.
 - Sample QC2 could not be determined for pesticides as only a nitric preserved container was supplied.
 - Sample(s) have been received within recommended holding times.
 - Please direct any turn around / technical queries to the laboratory contact designated above.
 - Please direct any queries related to sample condition / numbering / breakages to Matt Goodwin.
 - Analytical work for this work order will be conducted at ALS Brisbane.
 - A preliminary report for the metals only will be available on Friday, 29th. The remainder will be available 1st November.
 - Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-04 TPH/BTEX	SOIL - S-12 OC/OP Pesticides
EB1018995-001	18-OCT-2010 11:00	BHA1/0-0.15m			✓		✓
EB1018995-002	18-OCT-2010 11:00	BHA1/0.2-0.3m	✓				
EB1018995-003	18-OCT-2010 11:00	BHA2/0-0.15m			✓		✓
EB1018995-004	18-OCT-2010 11:00	BHA2/0.2-0.3m	✓				
EB1018995-005	18-OCT-2010 11:00	BHA3/0-0.15m			✓		✓
EB1018995-006	18-OCT-2010 11:00	BHA3/0.2-0.3m	✓				
EB1018995-007	18-OCT-2010 11:00	BHA4/0-0.15m			✓		✓
EB1018995-008	18-OCT-2010 11:00	BHA4/0.2-0.3m	✓				
EB1018995-009	18-OCT-2010 11:00	BHA5/0-0.15m			✓		✓
EB1018995-010	18-OCT-2010 11:00	BHA5/0.2-0.3m	✓				
EB1018995-011	18-OCT-2010 11:00	BHA6/0-0.15m			✓		✓
EB1018995-012	18-OCT-2010 11:00	BHA6/0.2-0.3m	✓				
EB1018995-013	18-OCT-2010 11:00	BHA7/0-0.15m			✓		✓
EB1018995-014	18-OCT-2010 11:00	BHA7/0.2-0.3m	✓				
EB1018995-015	18-OCT-2010 11:00	BHA8/0-0.15m			✓		✓
EB1018995-016	18-OCT-2010 11:00	BHA8/0.2-0.3m	✓				
EB1018995-017	18-OCT-2010 11:00	BHA9/0-0.15m			✓		✓
EB1018995-018	18-OCT-2010 11:00	BHA9/0.2-0.3m	✓				
EB1018995-019	18-OCT-2010 11:00	BHA10/0-0.15m			✓		✓
EB1018995-020	18-OCT-2010 11:00	BHA11/0-0.15m			✓		✓
EB1018995-021	18-OCT-2010 11:00	BHA11/0.2-0.3m	✓				
EB1018995-022	18-OCT-2010 11:00	BHA12/0-0.15m			✓		✓
EB1018995-023	18-OCT-2010 11:00	BHA12/0.2-0.3m	✓				
EB1018995-024	18-OCT-2010 11:00	BHA13/0-0.15m			✓	✓	✓
EB1018995-025	18-OCT-2010 11:00	BHA13/0.2-0.3m	✓				
EB1018995-026	18-OCT-2010 11:00	BHA14/0-0.15m			✓	✓	✓
EB1018995-027	18-OCT-2010 11:00	BHA14/0.2-0.3m	✓				
EB1018995-028	18-OCT-2010 11:00	BHA15/0-0.15m			✓	✓	✓
EB1018995-029	18-OCT-2010 11:00	BHA15/0.2-0.3m	✓				
EB1018995-030	18-OCT-2010 11:00	BHA16/0-0.15m			✓	✓	✓
EB1018995-031	18-OCT-2010 11:00	BHA16/0.2-0.3m	✓				
EB1018995-032	18-OCT-2010 11:00	BHA17/0-0.15m		✓	✓		
EB1018995-033	18-OCT-2010 11:00	BHA17/0.2-0.3m	✓				
EB1018995-034	18-OCT-2010 11:00	BHA18/0-0.15m		✓	✓		
EB1018995-035	18-OCT-2010 11:00	BHA18/0.2-0.3m	✓				

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Client : GILBERT & SUTHERLAND PTY LTD



			(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-04 TPH/BTEX	SOIL - S-12 OC/OP Pesticides
EB1018995-036	18-OCT-2010 11:00	BHA19/0-0.15m		✓	✓		
EB1018995-037	18-OCT-2010 11:00	BHA19/0.2-0.3m	✓				
EB1018995-038	18-OCT-2010 11:00	BHA20/0-0.15m		✓	✓		
EB1018995-039	18-OCT-2010 11:00	BHA20/0.2-0.3m	✓				
EB1018995-040	18-OCT-2010 11:00	BHA21/0-0.15m			✓		✓
EB1018995-041	18-OCT-2010 11:00	BHA21/0.2-0.3m	✓				
EB1018995-042	18-OCT-2010 11:00	BHA22/0-0.15m			✓		✓
EB1018995-043	18-OCT-2010 11:00	BHA22/0.2-0.3m	✓				
EB1018995-044	18-OCT-2010 11:00	BHA23/0-0.15m			✓		✓
EB1018995-045	18-OCT-2010 11:00	BHA23/0.2-0.3m	✓				
EB1018995-046	18-OCT-2010 11:00	BHA24/0-0.15m			✓		✓
EB1018995-047	18-OCT-2010 11:00	BHA24/0.2-0.3m	✓				
EB1018995-048	18-OCT-2010 11:00	BHA25/0-0.15m		✓	✓	✓	✓
EB1018995-049	18-OCT-2010 11:00	BHA25/0.2-0.3m	✓				
EB1018995-050	18-OCT-2010 11:00	BHA26/0-0.15m		✓	✓	✓	✓
EB1018995-051	18-OCT-2010 11:00	BHA26/0.2-0.3m	✓				
EB1018995-052	18-OCT-2010 11:00	BHA27/0-0.15m			✓		✓
EB1018995-053	18-OCT-2010 11:00	BHA27/0.2-0.3m	✓				
EB1018995-054	18-OCT-2010 11:00	BHA28/0-0.15m		✓	✓	✓	✓
EB1018995-055	18-OCT-2010 11:00	BHA28/0.2-0.3m	✓				
EB1018995-056	18-OCT-2010 11:00	BHA29/0.2m			✓		✓
EB1018995-057	18-OCT-2010 11:00	BHA29/1.0m			✓		✓
EB1018995-058	18-OCT-2010 11:00	BHA29/2.0m			✓		✓
EB1018995-059	18-OCT-2010 11:00	BHA29/2.5m			✓		✓
EB1018995-060	18-OCT-2010 11:00	BHA29/3m			✓		✓
EB1018995-061	18-OCT-2010 11:00	BHA30/0.2m			✓		✓
EB1018995-062	18-OCT-2010 11:00	BHA30/1m			✓		✓
EB1018995-063	18-OCT-2010 11:00	BHA30/2m			✓		✓
EB1018995-064	18-OCT-2010 11:00	BHA30/2.5m			✓		✓
EB1018995-065	18-OCT-2010 11:00	BHA30/3m			✓		✓
EB1018995-066	18-OCT-2010 11:00	BHA31/0-0.15m			✓		✓
EB1018995-067	18-OCT-2010 11:00	BHA31/0.2-0.3m	✓				
EB1018995-068	18-OCT-2010 11:00	BHA32/0-0.15m			✓		✓
EB1018995-069	18-OCT-2010 11:00	BHA32/0.2-0.3m	✓				
EB1018995-070	18-OCT-2010 11:00	BHA33/0-0.15m			✓		✓
EB1018995-071	18-OCT-2010 11:00	BHA33/0.2-0.3m	✓				
EB1018995-072	18-OCT-2010 11:00	BHA34/0-0.15m			✓		✓
EB1018995-073	18-OCT-2010 11:00	BHA34/0.2-0.3m	✓				
EB1018995-074	18-OCT-2010 11:00	BHA35/0-0.15m			✓		✓
EB1018995-075	18-OCT-2010 11:00	BHA35/0.2-0.3m	✓				
EB1018995-076	18-OCT-2010 11:00	BHA36/0-0.15m			✓		✓

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			(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-04 TPH/BTEX	SOIL - S-12 OC/OP Pesticides
EB1018995-077	18-OCT-2010 11:00	BHA36/0.2-0.3m	✓				
EB1018995-078	18-OCT-2010 11:00	BHA37/0-0.15m			✓		✓
EB1018995-079	18-OCT-2010 11:00	BHA37/0.2-0.3m	✓				
EB1018995-080	18-OCT-2010 11:00	BHA38/0-0.15m		✓	✓	✓	✓
EB1018995-081	18-OCT-2010 11:00	BHA38/0.2-0.3m	✓				
EB1018995-082	18-OCT-2010 11:00	BHA39/0-0.15m		✓	✓	✓	✓
EB1018995-083	18-OCT-2010 11:00	BHA39/0.2-0.3m	✓				
EB1018995-084	18-OCT-2010 11:00	BHA40/0-0.15m		✓	✓	✓	✓
EB1018995-085	18-OCT-2010 11:00	BHA40/0.2-0.3m	✓				
EB1018995-086	18-OCT-2010 11:00	BHA41/0-0.15m		✓	✓	✓	✓
EB1018995-087	18-OCT-2010 11:00	BHA41/0.2-0.3m	✓				
EB1018995-088	18-OCT-2010 11:00	BHA42/0-0.15m		✓	✓		
EB1018995-089	18-OCT-2010 11:00	BHA42/0.2-0.3m	✓				
EB1018995-090	18-OCT-2010 11:00	BHA43/0-0.15m		✓	✓		
EB1018995-091	18-OCT-2010 11:00	BHA43/0.2-0.3m	✓				
EB1018995-092	18-OCT-2010 11:00	BHA44/0-0.15m		✓	✓		
EB1018995-093	18-OCT-2010 11:00	BHA44/0.2-0.3m	✓				
EB1018995-094	18-OCT-2010 11:00	BHA45/0-0.15m		✓	✓		
EB1018995-095	18-OCT-2010 11:00	BHA45/0.2-0.3m	✓				
EB1018995-096	18-OCT-2010 11:00	BHA46/0-0.15m		✓	✓		
EB1018995-097	18-OCT-2010 11:00	BHA46/0.2-0.3m	✓				
EB1018995-098	18-OCT-2010 11:00	BHA47/0-0.15m		✓	✓		
EB1018995-099	18-OCT-2010 11:00	BHA47/0.2-0.3m	✓				
EB1018995-100	18-OCT-2010 11:00	BHA48/0-0.15m		✓	✓		
EB1018995-101	18-OCT-2010 11:00	BHA48/0.2-0.3m	✓				
EB1018995-102	18-OCT-2010 11:00	BHA49/0-0.15m		✓	✓		
EB1018995-103	18-OCT-2010 11:00	BHA49/0.2-0.3m	✓				
EB1018995-104	18-OCT-2010 11:00	BHA50/0-0.15m		✓	✓	✓	✓
EB1018995-105	18-OCT-2010 11:00	BHA50/0.2-0.3m	✓				
EB1018995-106	18-OCT-2010 11:00	BHA51/0-0.15m		✓	✓	✓	✓
EB1018995-107	18-OCT-2010 11:00	BHA51/0.2-0.3m	✓				
EB1018995-108	18-OCT-2010 11:00	BHA52/0-0.15m		✓	✓	✓	✓
EB1018995-109	18-OCT-2010 11:00	BHA52/0.2-0.3m	✓				
EB1018995-110	18-OCT-2010 11:00	BHA53/0-0.15m		✓	✓	✓	✓
EB1018995-111	18-OCT-2010 11:00	BHA53/0.2-0.3m	✓				
EB1018995-115	18-OCT-2010 11:00	QC1			✓	✓	✓
EB1018995-117	18-OCT-2010 11:00	QC3		✓	✓	✓	✓
EB1018995-118	18-OCT-2010 11:00	QC4		✓	✓		
EB1018995-119	18-OCT-2010 11:00	QC5		✓	✓	✓	✓
EB1018995-120	18-OCT-2010 11:00	QC6			✓		✓



Matrix: WATER

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - W-02T 8 metals (Total)	WATER - W-18 TPH/C6 - C9/BTEX
EB1018995-112	18-OCT-2010 11:00	GW2		✓	
EB1018995-113	18-OCT-2010 11:00	GW4		✓	
EB1018995-114	18-OCT-2010 11:00	GW5		✓	
EB1018995-116	18-OCT-2010 11:00	QC2		✓	
EB1018995-121	18-OCT-2010 11:00	QC7		✓	
EB1018995-122	18-OCT-2010 11:00	QC8		✓	
EB1018995-123	18-OCT-2010 11:00	TB1			✓
EB1018995-124	18-OCT-2010 11:00	TB2			✓
EB1018995-125	18-OCT-2010 11:00	TB3			✓
EB1018995-126	18-OCT-2010 11:00	QC9	✓		

Requested Deliverables

sch4p4(6) Personal information	- *AU Certificate of Analysis - NATA (COA)	Email	sch4p4(6) Personal information	@access.gs
	- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email		@access.gs
	- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email		@access.gs
	- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email		@access.gs
	- Chain of Custody (CoC) (COC)	Email		@access.gs
	- EDI Format - ENMRG (ENMRG)	Email		@access.gs
	- EDI Format - XTab (XTAB)	Email		@access.gs
sch4p4(6) Personal information	- A4 - AU Tax Invoice (INV)	Email		@access.gs



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB1018995	Page	: 1 of 32
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information@alsglobal.com
Telephone	: +61 07 55789944	Telephone	: sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---	Date Samples Received	: 21-OCT-2010
C-O-C number	: ---	Issue Date	: 03-NOV-2010
Sampler	: sch4p4(6) Personal information	No. of samples received	: 126
Site	: Shoal Point Mackay	No. of samples analysed	: 75
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
: sch4p4(6) Personal information	Senior Inorganic Chemist	Inorganics
	Senior Organic Chemist	Organics

Environmental Division Brisbane
 Part of the **ALS Laboratory Group**

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 A Campbell Brothers Limited Company

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- 'Am' Amosite (brown asbestos)
- 'Ch' Chrysotile (white asbestos)
- 'Cr' Crocidolite (blue asbestos)
- Legend for Asbestos Type:
- 't' Trace levels
- 'UMF' Unknown mineral fibres
- Asbestos Identification: Samples were analysed by Polarised Light Microscopy including dispersion staining.
- Confirmation by alternative techniques is recommended for samples where unknown mineral fibres are detected. Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EG005T (Total Metals) - Sample EB1018995 - 042 (BHA22/0-0.15m) shows poor matrix spike recovery due to sample heterogeneity. Confirmed by visual inspection.
- MW006 is ALS's internal code and is equivalent to AS4276.7.
- MW007 is ALS's internal code and is equivalent to AS4276.5.
- Pesticides: Sample BHA38/0-0.15m required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly. Surrogates and matrix spike recovery not determined.



Analytical Results

Sub-Matrix: SOIL

				Client sample ID				
				Client sampling date / time				
				BHA1/0-0.15m	BHA2/0-0.15m	BHA3/0-0.15m	BHA4/0-0.15m	BHA5/0-0.15m
				18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit	EB1018995-001	EB1018995-003	EB1018995-005	EB1018995-007	EB1018995-009
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	---	1.0	%	16.3	25.5	23.8	19.7	24.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	3	17	5	2	2
Copper	7440-50-8	5	mg/kg	<5	16	<5	<5	<5
Lead	7439-92-1	5	mg/kg	<5	9	<5	<5	<5
Nickel	7440-02-0	2	mg/kg	<2	7	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	10	40	8	11	9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL				Client sample ID				
Client sampling date / time				BHA1/0-0.15m	BHA2/0-0.15m	BHA3/0-0.15m	BHA4/0-0.15m	BHA5/0-0.15m
				18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit	EB1018995-001	EB1018995-003	EB1018995-005	EB1018995-007	EB1018995-009
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Phosphor-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	59.3	84.9	78.1	47.3	55.3
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	66.3	86.4	78.6	48.7	61.4



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA6/0-0.15m	BHA7/0-0.15m	BHA8/0-0.15m	BHA9/0-0.15m	BHA10/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-011	EB1018995-013	EB1018995-015	EB1018995-017	EB1018995-019
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	—	1.0	%		22.2	24.2	23.6	16.2	25.6
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	7	2	<2	<2
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	6
Lead	7439-92-1	5	mg/kg		<5	7	<5	<5	10
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		6	13	5	<5	33
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA6/0-0.15m	BHA7/0-0.15m	BHA8/0-0.15m	BHA9/0-0.15m	BHA10/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-011	EB1018995-013	EB1018995-015	EB1018995-017	EB1018995-019
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		68.4	59.5	59.5	59.7	48.0
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		70.9	66.6	66.6	62.1	54.4



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA11/0-0.15m	BHA12/0-0.15m	BHA13/0-0.15m	BHA14/0-0.15m	BHA15/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-020	EB1018995-022	EB1018995-024	EB1018995-026	EB1018995-028
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	---	1.0	%		22.7	27.8	11.2	9.6	13.4
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	15	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		8	31	8	4	6
Copper	7440-50-8	5	mg/kg		<5	9	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	10	6	<5	<5
Nickel	7440-02-0	2	mg/kg		3	10	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		8	50	24	8	7
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA11/0-0.15m	BHA12/0-0.15m	BHA13/0-0.15m	BHA14/0-0.15m	BHA15/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-020	EB1018995-022	EB1018995-024	EB1018995-026	EB1018995-028
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		---	---	<10	<10	<10
C10 - C14 Fraction	---	50	mg/kg		---	---	<50	<50	<50
C15 - C28 Fraction	---	100	mg/kg		---	---	<100	<100	<100
C29 - C36 Fraction	---	100	mg/kg		---	---	<100	<100	<100
^ C10 - C36 Fraction (sum)	---	50	mg/kg		---	---	<50	<50	<50
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		---	---	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		54.9	67.0	105	20.9	22.8
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		60.7	73.3	111	22.8	23.4
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		---	---	91.5	96.2	94.0
Toluene-D8	2037-26-5	0.1	%		---	---	93.6	96.5	92.0
4-Bromofluorobenzene	460-00-4	0.1	%		---	---	97.6	94.2	89.1



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA16/0-0.15m	BHA17/0-0.15m	BHA18/0-0.15m	BHA19/0-0.15m	BHA20/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-030	EB1018995-032	EB1018995-034	EB1018995-036	EB1018995-038
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	—	1.0	%		6.1	14.9	13.0	2.7	25.7
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	7	<5	7	5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	35	64	4	4
Copper	7440-50-8	5	mg/kg		<5	11	10	<5	<5
Lead	7439-92-1	5	mg/kg		<5	34	28	7	<5
Nickel	7440-02-0	2	mg/kg		<2	41	72	<2	<2
Zinc	7440-66-6	5	mg/kg		8	154	162	26	12
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	—	—	—	—
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	—	—	—	—
beta-BHC	319-85-7	0.05	mg/kg		<0.05	—	—	—	—
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	—	—	—	—
delta-BHC	319-86-8	0.05	mg/kg		<0.05	—	—	—	—
Heptachlor	76-44-8	0.05	mg/kg		<0.05	—	—	—	—
Aldrin	309-00-2	0.05	mg/kg		<0.05	—	—	—	—
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	—	—	—	—
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	—	—	—	—
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	—	—	—	—
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	—	—	—	—
Dieldrin	60-57-1	0.05	mg/kg		<0.05	—	—	—	—
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	—	—	—	—
Endrin	72-20-8	0.05	mg/kg		<0.05	—	—	—	—
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	—	—	—	—
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	—	—	—	—
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	—	—	—	—
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	—	—	—	—
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	—	—	—	—
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	—	—	—	—
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	—	—	—	—
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	—	—	—	—
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	—	—	—	—
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	—	—	—	—
Dimethoate	60-51-5	0.05	mg/kg		<0.05	—	—	—	—

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA16/0-0.15m	BHA17/0-0.15m	BHA18/0-0.15m	BHA19/0-0.15m	BHA20/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-030	EB1018995-032	EB1018995-034	EB1018995-036	EB1018995-038
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	---	---	---	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	---	---	---	---
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	---	---	---	---
Malathion	121-75-5	0.05	mg/kg		<0.05	---	---	---	---
Fenthion	55-38-9	0.05	mg/kg		<0.05	---	---	---	---
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	---	---	---	---
Parathion	56-38-2	0.2	mg/kg		<0.2	---	---	---	---
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	---	---	---	---
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	---	---	---	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	---	---	---	---
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	---	---	---	---
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	---	---	---	---
Ethion	563-12-2	0.05	mg/kg		<0.05	---	---	---	---
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	---	---	---	---
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	---	---	---	---
C10 - C14 Fraction	---	50	mg/kg		<50	---	---	---	---
C15 - C28 Fraction	---	100	mg/kg		<100	---	---	---	---
C29 - C36 Fraction	---	100	mg/kg		<100	---	---	---	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	---	---	---	---
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		<0.2	---	---	---	---
Toluene	108-88-3	0.5	mg/kg		<0.5	---	---	---	---
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	---	---	---	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	---	---	---	---
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		20.4	---	---	---	---
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		23.3	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		96.2	---	---	---	---
Toluene-D8	2037-26-5	0.1	%		95.2	---	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%		95.0	---	---	---	---



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA21/0-0.15m	BHA22/0-0.15m	BHA23/0-0.15m	BHA24/0-0.15m	BHA25/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-040	EB1018995-042	EB1018995-044	EB1018995-046	EB1018995-048
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	---	1.0	%		16.9	5.1	8.0	13.5	2.1
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		7	7	5	5	6
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	6	5	4	4
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	6
Lead	7439-92-1	5	mg/kg		<5	11	12	<5	8
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		8	127	62	29	41
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	0.06	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA21/0-0.15m	BHA22/0-0.15m	BHA23/0-0.15m	BHA24/0-0.15m	BHA25/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-040	EB1018995-042	EB1018995-044	EB1018995-046	EB1018995-048
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		---	---	---	---	<10
C10 - C14 Fraction	---	50	mg/kg		---	---	---	---	<50
C15 - C28 Fraction	---	100	mg/kg		---	---	---	---	<100
C29 - C36 Fraction	---	100	mg/kg		---	---	---	---	<100
^ C10 - C36 Fraction (sum)	---	50	mg/kg		---	---	---	---	<50
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		---	---	---	---	<0.2
Toluene	108-88-3	0.5	mg/kg		---	---	---	---	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		---	---	---	---	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		---	---	---	---	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		---	---	---	---	<0.5
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		62.8	63.8	74.7	69.9	53.5
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		66.4	65.6	78.8	69.7	55.7
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		---	---	---	---	97.6
Toluene-D8	2037-26-5	0.1	%		---	---	---	---	97.5
4-Bromofluorobenzene	460-00-4	0.1	%		---	---	---	---	93.4



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA26/0-0.15m	BHA27/0-0.15m	BHA28/0-0.15m	BHA29/0.2m	BHA29/1.0m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-050	EB1018995-052	EB1018995-054	EB1018995-056	EB1018995-057
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	---	1.0	%		12.2	4.6	12.2	6.7	5.9
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		6	7	6	6	6
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	3	5	4	4
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	12	<5	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	2	<2	<2
Zinc	7440-66-6	5	mg/kg		104	24	39	52	8
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA26/0-0.15m	BHA27/0-0.15m	BHA28/0-0.15m	BHA29/0.2m	BHA29/1.0m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-050	EB1018995-052	EB1018995-054	EB1018995-056	EB1018995-057
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	---	<10	---	---
C10 - C14 Fraction	---	50	mg/kg		<50	---	<50	---	---
C15 - C28 Fraction	---	100	mg/kg		<100	---	<100	---	---
C29 - C36 Fraction	---	100	mg/kg		<100	---	<100	---	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	---	<50	---	---
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		<0.2	---	<0.2	---	---
Toluene	108-88-3	0.5	mg/kg		<0.5	---	<0.5	---	---
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	---	<0.5	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	---	<0.5	---	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	---	<0.5	---	---
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		53.5	63.4	60.6	65.2	63.4
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		62.5	75.2	75.2	77.6	76.8
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		86.1	---	95.6	---	---
Toluene-D8	2037-26-5	0.1	%		92.1	---	89.7	---	---
4-Bromofluorobenzene	460-00-4	0.1	%		92.1	---	88.2	---	---



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA29/2.0m	BHA29/2.5m	BHA29/3m	BHA30/0.2m	BHA30/1m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-058	EB1018995-059	EB1018995-060	EB1018995-061	EB1018995-062
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	—	1.0	%		5.4	5.2	20.3	6.6	6.3
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		9	5	5	7	6
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	2	2	4	4
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	<5	6	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg		6	<5	<5	28	6
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA29/2.0m	BHA29/2.5m	BHA29/3m	BHA30/0.2m	BHA30/1m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-058	EB1018995-059	EB1018995-060	EB1018995-061	EB1018995-062
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.05	<0.05
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.2	<0.2	<0.2
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.05	<0.05	<0.05	<0.05
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.2	<0.2	<0.2	<0.2
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		62.9	63.5	63.5	62.4	63.5
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		81.9	78.3	79.8	79.1	80.6



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA30/2m	BHA30/2.5m	BHA30/3m	BHA31/0-0.15m	BHA32/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-063	EB1018995-064	EB1018995-065	EB1018995-066	EB1018995-068
EA055: Moisture Content									
A Moisture Content (dried @ 103°C)	---	1.0	%		6.4	24.1	6.6	4.5	6.6
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		7	<5	6	6	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	<2	3	3	5
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	<5	<5	136
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	<2
Zinc	7440-68-6	5	mg/kg		7	12	17	24	85
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Analytical Results

Sub-Matrix: SOIL				Client sample ID				
Client sampling date / time				BHA30/2m	BHA30/2.5m	BHA30/3m	BHA31/0-0.15m	BHA32/0-0.15m
				18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit	EB1018995-063	EB1018995-064	EB1018995-065	EB1018995-066	EB1018995-068
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	69.8	67.0	62.4	64.1	59.8
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	86.9	80.9	79.1	80.9	73.4



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA33/0-0.15m	BHA34/0-0.15m	BHA35/0-0.15m	BHA36/0-0.15m	BHA37/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-070	EB1018995-072	EB1018995-074	EB1018995-076	EB1018995-078
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	—	1.0	%		10.2	12.2	8.5	11.9	17.1
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		7	7	6	6	8
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		7	7	7	6	11
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	5
Lead	7439-92-1	5	mg/kg		6	<5	<5	<5	5
Nickel	7440-02-0	2	mg/kg		2	2	2	<2	2
Zinc	7440-66-6	5	mg/kg		24	12	16	13	14
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

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Page : 20 of 32
Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL				Client sample ID				
Client sampling date / time				BHA33/0-0.15m	BHA34/0-0.15m	BHA35/0-0.15m	BHA36/0-0.15m	BHA37/0-0.15m
				18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit	EB1018995-070	EB1018995-072	EB1018995-074	EB1018995-076	EB1018995-078
EP068B: Organophosphorus Pesticides (OP) - Continued								
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	63.3	55.6	60.3	61.7	63.9
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	74.6	69.9	76.8	79.5	69.4



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA38/0-0.15m	BHA39/0-0.15m	BHA40/0-0.15m	BHA41/0-0.15m	BHA42/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-080	EB1018995-082	EB1018995-084	EB1018995-086	EB1018995-088
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	—	1.0	%		23.0	3.6	19.9	26.6	24.6
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		6	7	7	<5	5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		4	3	4	3	4
Copper	7440-50-8	5	mg/kg		<5	<5	6	<5	<5
Lead	7439-92-1	5	mg/kg		<5	<5	81	20	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	<2	<2	2
Zinc	7440-66-6	5	mg/kg		14	10	94	45	20
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
beta-BHC	319-85-7	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
gamma-BHC	58-89-9	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
delta-BHC	319-86-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Heptachlor	76-44-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Aldrin	309-00-2	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Dieldrin	60-57-1	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
4,4'-DDE	72-55-9	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Endrin	72-20-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
4,4'-DDD	72-54-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
4,4'-DDT	50-29-3	0.2	mg/kg		<0.3	<0.2	<0.2	<0.2	—
Endrin ketone	53494-70-5	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Methoxychlor	72-43-5	0.2	mg/kg		<0.3	<0.2	<0.2	<0.2	—
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—
Monocrotophos	6923-22-4	0.2	mg/kg		<0.3	<0.2	<0.2	<0.2	—
Dimethoate	60-51-5	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	—

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL				Client sample ID	BHA38/0-0.15m	BHA39/0-0.15m	BHA40/0-0.15m	BHA41/0-0.15m	BHA42/0-0.15m
Client sampling date / time					18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-080	EB1018995-082	EB1018995-084	EB1018995-086	EB1018995-088
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Parathion-methyl	298-00-0	0.2	mg/kg		<0.3	<0.2	<0.2	<0.2	---
Malathion	121-75-5	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Fenthion	55-38-9	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Parathion	56-38-2	0.2	mg/kg		<0.3	<0.2	<0.2	<0.2	---
Phosphor-ethyl	23505-41-1	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Fenamiphos	22224-92-6	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Prothiofos	34643-46-4	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Ethion	563-12-2	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Carbophenothion	786-19-6	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.29	<0.05	<0.05	<0.05	---
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	---	10	mg/kg		<10	<10	<10	<10	---
C10 - C14 Fraction	---	50	mg/kg		<50	<50	<50	<50	---
C15 - C28 Fraction	---	100	mg/kg		<100	<100	<100	<100	---
C29 - C36 Fraction	---	100	mg/kg		<100	<100	<100	<100	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg		<50	<50	<50	<50	---
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	---
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	---
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		Not Determined	72.3	33.2	69.6	---
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		Not Determined	74.8	62.9	72.9	---
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		95.9	102	94.0	85.9	---
Toluene-D8	2037-26-5	0.1	%		93.1	99.7	89.9	82.0	---
4-Bromofluorobenzene	460-00-4	0.1	%		89.6	97.1	88.1	80.8	---



Analytical Results

Sub-Matrix: SOIL				Client sample ID	BHA43/0-0.15m	BHA44/0-0.15m	BHA45/0-0.15m	BHA46/0-0.15m	BHA47/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-090	EB1018995-092	EB1018995-094	EB1018995-096	EB1018995-098
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)		1.0	%		45.7	15.0	22.9	12.4	5.4
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		6	<5	5	5	5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		6	4	3	6	6
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	13
Lead	7439-92-1	5	mg/kg		7	<5	<5	<5	40
Nickel	7440-02-0	2	mg/kg		3	<2	<2	2	4
Zinc	7440-66-6	5	mg/kg		29	16	14	23	53
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1

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Analytical Results

Sub-Matrix: SOIL				Client sample ID				
				Client sampling date / time				
				BHA48/0-0.15m	BHA49/0-0.15m	BHA50/0-0.15m	BHA51/0-0.15m	BHA52/0-0.15m
				18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit	EB1018995-100	EB1018995-102	EB1018995-104	EB1018995-106	EB1018995-108
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	---	1.0	%	10.2	10.4	7.4	6.6	9.2
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	6	6	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	6	3	3	4
Copper	7440-50-8	5	mg/kg	12	6	<5	<5	<5
Lead	7439-92-1	5	mg/kg	12	5	<5	6	14
Nickel	7440-02-0	2	mg/kg	2	2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	49	27	29	23	48
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	---	---	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	---	---	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	---	---	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	---	---	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	---	---	<0.05	<0.05	<0.05

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Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA48/0-0.15m	BHA49/0-0.15m	BHA50/0-0.15m	BHA51/0-0.15m	BHA52/0-0.15m
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-100	EB1018995-102	EB1018995-104	EB1018995-106	EB1018995-108
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		---	---	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		---	---	<0.2	<0.2	<0.2
Phosphor-ethyl	23505-41-1	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Phenamiphos	22224-92-6	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		---	---	<0.05	<0.05	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction		10	mg/kg		---	---	<10	<10	<10
C10 - C14 Fraction		50	mg/kg		---	---	<50	<50	<50
C15 - C28 Fraction		100	mg/kg		---	---	<100	<100	<100
C29 - C36 Fraction		100	mg/kg		---	---	<100	<100	<100
^ C10 - C36 Fraction (sum)		50	mg/kg		---	---	<50	<50	<50
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		---	---	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		---	---	<0.5	<0.5	<0.5
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		---	---	73.4	74.5	67.8
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		---	---	77.1	77.4	73.8
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		---	---	99.0	92.9	99.2
Toluene-D8	2037-26-5	0.1	%		---	---	95.7	99.0	97.5
4-Bromofluorobenzene	460-00-4	0.1	%		---	---	93.1	97.5	96.4

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL				Client sample ID	BHA53/0-0.15m	QC1	QC3	QC4	QC5
Client sampling date / time					18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-110	EB1018995-115	EB1018995-117	EB1018995-118	EB1018995-119
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)				1.0	3.1	8.1	23.8	23.2	8.0
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		5	<5	7	6	6
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		3	7	3	4	3
Copper	7440-50-8	5	mg/kg		<5	<5	<5	<5	<5
Lead	7439-92-1	5	mg/kg		8	6	7	<5	<5
Nickel	7440-02-0	2	mg/kg		<2	<2	2	2	<2
Zinc	7440-66-6	5	mg/kg		62	22	103	45	31
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	---	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	---	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	---	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	---	<0.05



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	BHA53/0-0.15m	QC1	QC3	QC4	QC5
				Client sampling date / time	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-110	EB1018995-115	EB1018995-117	EB1018995-118	EB1018995-119
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	—	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	—	<0.2
Phosphorothion	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	—	<0.05
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	—	10	mg/kg		<10	<10	<10	—	<10
C10 - C14 Fraction	—	50	mg/kg		<50	<50	<50	—	<50
C15 - C28 Fraction	—	100	mg/kg		<100	<100	<100	—	<100
C29 - C36 Fraction	—	100	mg/kg		<100	<100	<100	—	<100
^ C10 - C36 Fraction (sum)	—	50	mg/kg		<50	<50	<50	—	<50
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	—	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	—	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	—	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	—	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	—	<0.5
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		68.6	68.8	56.3	—	62.3
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		74.8	73.0	104	—	63.9
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		93.7	98.9	87.0	—	100
Toluene-D8	2037-26-5	0.1	%		95.0	104	86.6	—	96.6
4-Bromofluorobenzene	460-00-4	0.1	%		98.0	101	89.4	—	97.9

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Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analytical Results

Sub-Matrix: SOIL				Client sample ID	QC6				
				Client sampling date / time	18-OCT-2010 11:00				
Compound	CAS Number	LOR	Unit	EB1018995-120					
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	—	1.0	%	10.0					
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	10					
Cadmium	7440-43-9	1	mg/kg	<1					
Chromium	7440-47-3	2	mg/kg	7					
Copper	7440-50-8	5	mg/kg	<5					
Lead	7439-92-1	5	mg/kg	<5					
Nickel	7440-02-0	2	mg/kg	<2					
Zinc	7440-66-6	5	mg/kg	9					
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1					
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05					
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05					
beta-BHC	319-85-7	0.05	mg/kg	<0.05					
gamma-BHC	58-89-9	0.05	mg/kg	<0.05					
delta-BHC	319-86-8	0.05	mg/kg	<0.05					
Heptachlor	76-44-8	0.05	mg/kg	<0.05					
Aldrin	309-00-2	0.05	mg/kg	<0.05					
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05					
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05					
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05					
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05					
Dieldrin	60-57-1	0.05	mg/kg	<0.05					
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05					
Endrin	72-20-8	0.05	mg/kg	<0.05					
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05					
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05					
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05					
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05					
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2					
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05					
Methoxychlor	72-43-5	0.2	mg/kg	<0.2					
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05					
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05					
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2					
Dimethoate	60-51-5	0.05	mg/kg	<0.05					

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Analytical Results

Sub-Matrix: SOIL				Client sample ID	QC6	---	---	---	---
				Client sampling date / time	18-OCT-2010 11:00	---	---	---	---
Compound	CAS Number	LOR	Unit	EB1018995-120	---	---	---	---	---
EP068B: Organophosphorus Pesticides (OP) - Continued									
Diazinon	333-41-5	0.05	mg/kg	<0.05	---	---	---	---	---
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	---	---	---	---	---
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	---	---	---	---	---
Malathion	121-75-5	0.05	mg/kg	<0.05	---	---	---	---	---
Fenthion	55-38-9	0.05	mg/kg	<0.05	---	---	---	---	---
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	---	---	---	---	---
Parathion	56-38-2	0.2	mg/kg	<0.2	---	---	---	---	---
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	---	---	---	---	---
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	---	---	---	---	---
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	---	---	---	---	---
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	---	---	---	---	---
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	---	---	---	---	---
Ethion	563-12-2	0.05	mg/kg	<0.05	---	---	---	---	---
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	---	---	---	---	---
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	---	---	---	---	---
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%	57.8	---	---	---	---	---
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%	62.8	---	---	---	---	---

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Analytical Results

Sub-Matrix: WATER

				Client sample ID				
				Client sampling date / time	GW2	GW4	GW5	QC2
					18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00
Compound	CAS Number	LOR	Unit		EB1018995-112	EB1018995-113	EB1018995-114	EB1018995-116
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L		0.036	0.362	0.020	<0.001
Cadmium	7440-43-9	0.0001	mg/L		0.0016	0.0002	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.057	0.004	0.001	<0.0001
Copper	7440-50-8	0.001	mg/L		0.082	0.009	0.005	<0.001
Nickel	7440-02-0	0.001	mg/L		0.036	0.004	0.003	<0.001
Lead	7439-92-1	0.001	mg/L		2.19	0.030	0.008	<0.001
Zinc	7440-66-6	0.005	mg/L		0.739	0.023	0.012	<0.001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001



Analytical Results

Sub-Matrix: WATER				Client sample ID		QC8	TB1	TB2	TB3	
Client sampling date / time				18-OCT-2010 11:00		18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	18-OCT-2010 11:00	
Compound	CAS Number	LOR	Unit	EB1018995-122	EB1018995-123	EB1018995-124	EB1018995-125			
EG020T: Total Metals by ICP-MS										
Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---	---	---
EG035T: Total Recoverable Mercury by FIMS										
Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---	---	---
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	---	20	µg/L	---	<20	<20	<20	<20	---	---
EP080: BTEX										
Benzene	71-43-2	1	µg/L	---	<1	<1	<1	<1	---	---
Toluene	108-88-3	2	µg/L	---	<2	<2	<2	<2	---	---
Ethylbenzene	100-41-4	2	µg/L	---	<2	<2	<2	<2	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	---	<2	<2	<2	<2	---	---
ortho-Xylene	95-47-6	2	µg/L	---	<2	<2	<2	<2	---	---
EP080S: TPH(V)/BTEX Surrogates										
1,2-Dichloroethane-D4	17060-07-0	0.1	%	---	116	116	119	---	---	---
Toluene-D8	2037-26-5	0.1	%	---	129	127	127	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	---	111	109	107	---	---	---

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Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	138
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.8	134.5
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	52.7	133.7
Toluene-D8	2037-26-5	60.3	131.1
4-Bromofluorobenzene	460-00-4	59.2	126.6
Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	66.1	137.9
Toluene-D8	2037-26-5	79.2	119.6
4-Bromofluorobenzene	460-00-4	74.2	118.0



Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB1018995	Page	: 1 of 23
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	sch4p4(6) Personal information	Contact	sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	sch4p4(6) Personal information	E-mail	sch4p4(6) Personal information@alsglobal.com
Telephone	: +61 07 55789944	Telephone	sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point Mackay	Date Samples Received	: 21-OCT-2010
C-O-C number	: ---	Issue Date	: 03-NOV-2010
Sampler	sch4p4(6) Personal information	No. of samples received	: 126
Order number	: ---	No. of samples analysed	: 75
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
sch4p4(6) Personal information	Senior Inorganic Chemist	Inorganics
	Senior Organic Chemist	Organics

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EA055: Moisture Content (QC Lot: 1537858)										
EB1018995-007	BHA4/0-0.15m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	19.7	19.5	1.2	0% - 50%	
EB1018995-020	BHA11/0-0.15m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	22.7	22.8	0.5	0% - 20%	
EA055: Moisture Content (QC Lot: 1537859)										
EB1018995-046	BHA24/0-0.15m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	13.5	14.0	4.0	0% - 50%	
EB1018995-058	BHA29/2.0m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	5.4	4.8	10.5	No Limit	
EA055: Moisture Content (QC Lot: 1537860)										
EB1018995-076	BHA36/0-0.15m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	11.9	11.3	5.4	0% - 50%	
EB1018995-090	BHA43/0-0.15m	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	45.7	38.5	17.1	0% - 20%	
EA055: Moisture Content (QC Lot: 1537861)										
EB1018995-118	QC4	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	23.2	24.1	3.5	0% - 20%	
EG005T: Total Metals by ICP-AES (QC Lot: 1537623)										
EB1018995-001	BHA1/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	5	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	10	10	0.0	No Limit	
		EB1018995-020	BHA11/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0
EG005T: Chromium	7440-47-3			2	mg/kg	8	8	0.0	No Limit	
EG005T: Nickel	7440-02-0			2	mg/kg	3	3	0.0	No Limit	
EG005T: Arsenic	7440-38-2			5	mg/kg	<5	<5	0.0	No Limit	
EG005T: Copper	7440-50-8			5	mg/kg	<5	<5	0.0	No Limit	
EG005T: Lead	7439-92-1			5	mg/kg	<5	<5	0.0	No Limit	
EG005T: Zinc	7440-66-6			5	mg/kg	8	9	0.0	No Limit	
EG005T: Total Metals by ICP-AES (QC Lot: 1537625)										
EB1018995-040	BHA21/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit	
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.0	No Limit	
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit	
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	0.0	No Limit	
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit	
		EG005T: Zinc	7440-66-6	5	mg/kg	8	8	0.0	No Limit	
		EB1018995-058	BHA29/2.0m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0
EG005T: Chromium	7440-47-3			2	mg/kg	3	3	0.0	No Limit	

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 1537625) - continued									
EB1018995-058	BHA29/2.0m	EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	6	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1537627)									
EB1018995-070	BHA33/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	8	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	13.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	7	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	24	25	0.0	No Limit
EB1018995-090	BHA43/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	7	18.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	8	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	29	30	4.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1537629)									
EB1018995-110	BHA53/0-0.15m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	62	60	4.4	0% - 50%		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1537624)									
EB1018995-001	BHA1/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB1018995-020	BHA11/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1537626)									
EB1018995-040	BHA21/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB1018995-058	BHA29/2.0m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1537628)									
EB1018995-070	BHA33/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EB1018995-090	BHA43/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1537630)									
EB1018995-110	BHA53/0-0.15m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537639)									
EB1018995-001	BHA1/0-0.15m	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EB1018995-020	BHA11/0-0.15m	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL											
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report					
						Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537639) - continued											
EB1018995-020	BHA11/0-0.15m	EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537641)											
EB1018995-048	BHA25/0-0.15m	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EB1018995-062	BHA30/1m	EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
				EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068: alpha-BHC	319-84-6			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Hexachlorobenzene (HCB)	118-74-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: beta-BHC	319-85-7			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: gamma-BHC	58-89-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: delta-BHC	319-86-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Heptachlor	76-44-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Aldrin	309-00-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Heptachlor epoxide	1024-57-3			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: trans-Chlordane	5103-74-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: alpha-Endosulfan	959-98-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: cis-Chlordane	5103-71-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Dieldrin	60-57-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: 4,4'-DDE	72-55-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit				
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit				



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537641) - continued									
EB1018995-062	BHA30/1m	EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537642)									
EB1018995-078	BHA37/0-0.15m	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EB1018995-117	QC3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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Sub-Matrix: SOIL		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1537642) - continued									
EB1018995-117	QC3	EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537639)									
EB1018995-001	BHA11/0-0.15m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EB1018995-020	BHA11/0-0.15m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05
EP068: Demeton-S-methyl	919-86-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Fenthion	55-38-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos	2921-88-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Pirimphos-ethyl	23505-41-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537639) - continued									
EB1018995-020	BHA11/0-0.15m	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537641)									
EB1018995-048	BHA25/0-0.15m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EB1018995-062	BHA30/1m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05
EP068: Demeton-S-methyl	919-86-8			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Fenthion	55-38-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Chlorpyrifos	2921-88-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Pirimphos-ethyl	23505-41-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL											
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report					
						Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537641) - continued											
EB1018995-062	BHA30/1m	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537642)											
EB1018995-078	BHA37/0-0.15m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EB1018995-117	QC3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
				EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP068: Dimethoate	60-51-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Diazinon	333-41-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Chlorpyrifos-methyl	5598-13-0			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Malathion	121-75-5			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Fenthion	55-38-9			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Chlorpyrifos	2921-88-2			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
EP068: Pirimphos-ethyl	23505-41-1			0.05	mg/kg	<0.05	<0.05	0.0	No Limit		



Sub-Matrix: SOIL			Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1537642) - continued									
EB1018995-117	QC3	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1536835)									
EB1018995-048	BHA25/0-0.15m	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EB1018995-110	BHA53/0-0.15m	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1537651)									
EB1018995-024	BHA13/0-0.15m	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1537867)									
EB1018995-024	BHA13/0-0.15m	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EB1018995-086	BHA41/0-0.15m	EP071: C15 - C28 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEX (QC Lot: 1536835)									
EB1018995-048	BHA25/0-0.15m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EB1018995-110	BHA53/0-0.15m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080: BTEX (QC Lot: 1537651)									
EB1018995-024	BHA13/0-0.15m	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC Lot: 1537651) - continued									
EB1018995-024	BHA13/0-0.15m	EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1538063)									
EB1018995-112	GW2	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0016	0.0016	0.0	0% - 50%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.036	0.037	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.057	0.059	3.6	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.082	0.084	2.6	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	2.19	2.20	0.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.036	0.035	3.2	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.739	0.725	1.8	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1539218)									
EB1018804-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EB1018949-072	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1541409)									
EB1018799-001	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.0	No Limit
EB1018904-005	Anonymous	EP080: C6 - C9 Fraction	---	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEX (QC Lot: 1541409)									
EB1018799-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
EB1018904-005	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
EG005T: Total Metals by ICP-AES (QCLot: 1537623)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	103	90	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	96.7	82	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	103	89	129
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	105	89	125
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	95.2	83	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	101	86	124
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	102	86	124
EG005T: Total Metals by ICP-AES (QCLot: 1537625)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	97.3	90	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	88.4	82	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	98.3	89	129
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	99.4	89	125
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	89.6	83	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	95.9	86	124
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	95.7	86	124
EG005T: Total Metals by ICP-AES (QCLot: 1537627)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	112	90	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	91.9	82	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	109	89	129
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	107	89	125
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	104	83	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	107	86	124
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	106	86	124
EG005T: Total Metals by ICP-AES (QCLot: 1537629)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.11 mg/kg	114	90	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	95.3	82	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	110	89	129
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.68 mg/kg	107	89	125
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.76 mg/kg	106	83	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.23 mg/kg	108	86	124
EG005T: Zinc	7440-66-6	5	mg/kg	<5	103.88 mg/kg	108	86	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537624)								
EG035T: Mercury	7439-97-6	0.10	mg/kg	<0.1	1.34 mg/kg	82.1	73	127
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537626)								

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537626) - continued								
EG035T: Mercury	7439-97-6	0.10	mg/kg	<0.1	1.34 mg/kg	108	73	127
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537628)								
EG035T: Mercury	7439-97-6	0.10	mg/kg	<0.1	1.34 mg/kg	80.7	73	127
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537630)								
EG035T: Mercury	7439-97-6	0.10	mg/kg	<0.1	1.34 mg/kg	79.9	73	127
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537639)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	—	—	—	—
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	77.4	58.4	116
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.2	57.7	107
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	59.3	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	—	0.5 mg/kg	77.2	59.1	118
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	51	117
EP068: Aldrin	309-00-2	0.05	mg/kg	—	—	—	—	—
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	57.3	119
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	76.7	58.2	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	—	—	—	—	—
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.9	56	120
EP068: Dieldrin	60-57-1	0.05	mg/kg	—	0.5 mg/kg	79.0	60.8	113
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	—	—	—	—
EP068: Endrin	72-20-8	0.05	mg/kg	—	0.5 mg/kg	76.8	58.8	115
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	—	—	—	—
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	—	0.5 mg/kg	77.9	61.2	116
				<0.05	0.5 mg/kg	73.9	47	133
					—	—	—	—
					0.5 mg/kg	75.4	58.5	117
					0.5 mg/kg	77.0	58.4	118
					—	—	—	—



Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537639) - continued								
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	---	0.5 mg/kg	88.6	42	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	53.6	120
EP068: 4,4'-DDT	50-29-3	0.05	mg/kg	---	0.5 mg/kg	99.8	52.6	129
EP068: Endrin ketone	53494-70-5	0.2	mg/kg	<0.2	---	---	---	---
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	---	---	---	---
EP068: Methoxychlor	72-43-5	0.05	mg/kg	---	0.5 mg/kg	85.0	51.6	124
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	102	52.4	129
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537641)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	58.4	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	57.7	107
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.2	59.3	116
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	75.2	59.1	118
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.8	51	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	57.3	119
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	58.2	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	71.4	60.4	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.6	60.3	114
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	56	120
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.6	60.8	113
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	58.8	115
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.4	61.2	116
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	47	133
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	58.5	117
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.6	58.4	118
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	75.2	42	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	53.6	120
EP068: 4,4'-DDT	50-29-3	0.05	mg/kg	---	0.5 mg/kg	74.6	52.6	129
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	---	---	---	---
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	71.4	51.6	124
EP068: Methoxychlor	72-43-5	0.05	mg/kg	---	0.5 mg/kg	75.8	52.4	129
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	---	---	---	---
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537642)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	71.4	58.4	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	71.0	57.7	107
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	71.8	59.3	116
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	59.1	118

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Sub-Matrix: SOIL

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537642) - continued								
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	51	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	57.3	119
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	58.2	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	60.4	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	75.4	60.3	114
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	73.0	56	120
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	60.8	113
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	75.7	58.8	115
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	71.8	61.2	116
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	47	133
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	73.4	58.5	117
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.0	58.4	118
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	72.5	42	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.5	53.6	120
EP068: 4,4'-DDT	50-29-3	0.05	mg/kg	---	0.5 mg/kg	80.9	52.6	129
		0.2	mg/kg	<0.2	---	---	---	---
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	72.9	51.6	124
EP068: Methoxychlor	72-43-5	0.05	mg/kg	---	0.5 mg/kg	# 51.2	52.4	129
		0.2	mg/kg	<0.2	---	---	---	---
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537639)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	---	0.5 mg/kg	68.1	43.9	113
				<0.05	---	---	---	---
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	---	0.5 mg/kg	47.4	31.2	112
				<0.05	---	---	---	---
EP068: Monocrotophos	6923-22-4	0.05	mg/kg	---	0.5 mg/kg	50.2	33	130
		0.2	mg/kg	<0.2	---	---	---	---
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	---	---	---	---
				---	0.5 mg/kg	93.8	40	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	---	---	---	---
				---	0.5 mg/kg	80.2	57.1	114
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	---	---	---	---
				---	0.5 mg/kg	83.2	58.9	113
EP068: Parathion-methyl	298-00-0	0.05	mg/kg	---	0.5 mg/kg	95.0	54.8	112
		0.2	mg/kg	<0.2	---	---	---	---
EP068: Malathion	121-75-5	0.05	mg/kg	---	0.5 mg/kg	95.9	57.8	119
				<0.05	---	---	---	---
EP068: Fenthion	55-38-9	0.05	mg/kg	---	0.5 mg/kg	77.5	68	109
				<0.05	---	---	---	---
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	---	---	---	---
				---	0.5 mg/kg	79.5	62.2	115

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Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537639) - continued								
EP068: Parathion	56-38-2	0.05	mg/kg	—	0.5 mg/kg	93.6	54.7	113
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	—	—	—	—
				—	0.5 mg/kg	77.3	51.9	121
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	—	0.5 mg/kg	79.1	58	118
				<0.05	—	—	—	—
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	—	—	—	—
				—	0.5 mg/kg	80.6	59.8	115
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	—	0.5 mg/kg	80.0	32.5	101
				<0.05	—	—	—	—
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	—	—	—	—
				—	0.5 mg/kg	85.4	59.6	116
EP068: Ethion	563-12-2	0.05	mg/kg	—	0.5 mg/kg	89.5	58.4	118
				<0.05	—	—	—	—
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	—	—	—	—
				—	0.5 mg/kg	87.8	56.9	117
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	—	0.5 mg/kg	83.2	42	130
				<0.05	—	—	—	—
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537641)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	75.4	43.9	113
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	# 17.4	31.2	112
EP068: Monocrotophos	6923-22-4	0.05	mg/kg	—	0.5 mg/kg	# 130	33	130
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	40	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	76.4	57.1	114
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	58.9	113
EP068: Parathion-methyl	298-00-0	0.05	mg/kg	—	0.5 mg/kg	89.0	54.8	112
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	57.8	119
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	75.0	68	109
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.0	62.2	115
EP068: Parathion	56-38-2	0.05	mg/kg	—	0.5 mg/kg	95.4	54.7	113
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	78.4	51.9	121
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	58	118
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.2	59.8	115
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	32.5	101
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	59.6	116
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	79.2	58.4	118
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	56.9	117

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Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)		
						LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537641) - continued								
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	42	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537642)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	43.9	113
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	# 18.4	31.2	112
EP068: Monocrotophos	6923-22-4	0.05	mg/kg	—	0.5 mg/kg	114	33	130
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	40	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	57.1	114
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	58.9	113
EP068: Parathion-methyl	298-00-0	0.05	mg/kg	—	0.5 mg/kg	93.7	54.8	112
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	57.8	119
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	68	109
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	62.2	115
EP068: Parathion	56-38-2	0.05	mg/kg	—	0.5 mg/kg	93.8	54.7	113
		0.2	mg/kg	<0.2	—	—	—	—
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	51.9	121
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	58	118
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	75.3	59.8	115
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	32.5	101
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	76.9	59.6	116
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	58.4	118
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.7	56.9	117
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	88.8	42	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1536835)								
EP080: C6 - C9 Fraction	—	10	mg/kg	<10	16 mg/kg	106	71	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1537651)								
EP080: C6 - C9 Fraction	—	10	mg/kg	<10	16 mg/kg	102	71	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1537867)								
EP071: C10 - C14 Fraction	—	50	mg/kg	<50	259 mg/kg	89.1	65	112
EP071: C15 - C28 Fraction	—	100	mg/kg	<100	424 mg/kg	86.8	76.2	122
EP071: C29 - C36 Fraction	—	100	mg/kg	<100	—	—	—	—
EP080: BTEX (QCLot: 1536835)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	98.3	78	121
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	100	78	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.7	72	119
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	99.3	66	121
	106-42-3							



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EP080: BTEX (QCLot: 1536835) - continued								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	100	70	118
EP080: BTEX (QCLot: 1537651)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	99.7	78	121
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	94.0	78	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.4	72	119
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	94.0	66	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	70	118
Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1538063)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	104	76	120
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	100	84	115
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.100 mg/L	112	82	124
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.200 mg/L	111	82	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.100 mg/L	104	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.100 mg/L	114	81	121
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.200 mg/L	106	81	123
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1539218)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	108	80	116
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1541409)								
EP080: C6 - C9 Fraction	—	20	µg/L	<20	160 µg/L	122	73	135
EP080: BTEX (QCLot: 1541409)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	# 130	77.6	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	# 145	71	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	# 138	73	125
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	20 µg/L	# 143	70.4	129
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	# 135	72	124



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

			Matrix Spike (MS) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1537623)							
EB1018995-003	BHA2/0-0.15m	EG005T: Arsenic	7440-38-2	50 mg/kg	89.9	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	121	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	105	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	105	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	121	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1537625)							
EB1018995-042	BHA22/0-0.15m	EG005T: Arsenic	7440-38-2	50 mg/kg	98.6	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	122	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	108	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	102	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	105	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	# 42.1	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1537627)							
EB1018995-072	BHA34/0-0.15m	EG005T: Arsenic	7440-38-2	50 mg/kg	99.9	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	107	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	110	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	105	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	108	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1537629)							
EB1018995-115	QC1	EG005T: Arsenic	7440-38-2	50 mg/kg	94.6	70	130
		EG005T: Cadmium	7440-43-9	25 mg/kg	111	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	111	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	109	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537624)							
EB1018995-003	BHA2/0-0.15m	EG035T: Mercury	7439-97-6	5.0 mg/kg	126	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537626)							



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537626) - continued							
EB1018995-042	BHA22/0-0.15m	EG035T: Mercury	7439-97-6	5.0 mg/kg	93.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537628)							
EB1018995-072	BHA34/0-0.15m	EG035T: Mercury	7439-97-6	5.0 mg/kg	93.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1537630)							
EB1018995-115	QC1	EG035T: Mercury	7439-97-6	5.0 mg/kg	96.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537639)							
EB1018995-003	BHA2/0-0.15m	EP068: gamma-BHC	58-89-9	0.25 mg/kg	70.2	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	79.0	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	72.4	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	73.0	70	130
		EP068: Endrin	72-20-8	1.0 mg/kg	70.8	70	130
		EP068: 4,4'-DDT	50-29-3	1.0 mg/kg	74.3	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537641)							
EB1018995-050	BHA26/0-0.15m	EP068: gamma-BHC	58-89-9	0.25 mg/kg	73.0	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	75.0	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	71.5	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	70.9	70	130
		EP068: Endrin	72-20-8	1.0 mg/kg	76.3	70	130
		EP068: 4,4'-DDT	50-29-3	1.0 mg/kg	76.1	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1537642)							
EB1018995-080	BHA38/0-0.15m	EP068: gamma-BHC	58-89-9	0.25 mg/kg	# Not Determined	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	# Not Determined	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	# Not Determined	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	# Not Determined	70	130
		EP068: Endrin	72-20-8	1.0 mg/kg	# Not Determined	70	130
		EP068: 4,4'-DDT	50-29-3	1.0 mg/kg	# Not Determined	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537639)							
EB1018995-003	BHA2/0-0.15m	EP068: Diazinon	333-41-5	0.25 mg/kg	73.6	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	78.4	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	71.6	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	76.2	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	77.5	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537641)							
EB1018995-050	BHA26/0-0.15m	EP068: Diazinon	333-41-5	0.25 mg/kg	71.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	70.2	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	74.7	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	73.7	70	130

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Work Order : EB1018995
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Sub-Matrix: SOIL

			Matrix Spike (MS) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)	
				Concentration	MS	Low	High	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537641) - continued								
EB1018995-050	BHA26/0-0.15m	EP068: Prothiofos	34643-46-4	0.25 mg/kg	79.2	70	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1537642)								
EB1018995-080	BHA38/0-0.15m	EP068: Diazinon	333-41-5	0.25 mg/kg	# Not Determined	70	130	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	# Not Determined	70	130	
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	# Not Determined	70	130	
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	# Not Determined	70	130	
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	# Not Determined	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1536835)								
EB1018995-050	BHA26/0-0.15m	EP080: C6 - C9 Fraction	---	28 mg/kg	70.8	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1537651)								
EB1018995-026	BHA14/0-0.15m	EP080: C6 - C9 Fraction	---	28 mg/kg	77.7	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1537867)								
EB1018995-026	BHA14/0-0.15m	EP071: C10 - C14 Fraction	---	259 mg/kg	88.8	70	130	
		EP071: C15 - C28 Fraction	---	524 mg/kg	83.5	70	130	
EP080: BTEX (QCLot: 1536835)								
EB1018995-050	BHA26/0-0.15m	EP080: Benzene	71-43-2	2 mg/kg	84.9	70	130	
		EP080: Toluene	108-88-3	2 mg/kg	81.7	70	130	
EP080: BTEX (QCLot: 1537651)								
EB1018995-026	BHA14/0-0.15m	EP080: Benzene	71-43-2	2 mg/kg	94.5	70	130	
		EP080: Toluene	108-88-3	2 mg/kg	86.4	70	130	

Sub-Matrix: WATER

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1538063)							
EB1018995-113	GW4	EG020A-T: Arsenic	7440-38-2	1.000 mg/L	112	70	130
		EG020A-T: Cadmium	7440-43-9	0.500 mg/L	103	70	130
		EG020A-T: Chromium	7440-47-3	1.000 mg/L	103	70	130
		EG020A-T: Copper	7440-50-8	1.000 mg/L	106	70	130
		EG020A-T: Lead	7439-92-1	1.000 mg/L	107	70	130
		EG020A-T: Nickel	7440-02-0	1.000 mg/L	103	70	130
		EG020A-T: Zinc	7440-66-6	1.000 mg/L	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1539218)							
EB1018804-002	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	97.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1541409)							
EB1018799-002	Anonymous	EP080: C6 - C9 Fraction	---	140 µg/L	93.7	70	130
EP080: BTEX (QCLot: 1541409)							

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Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)	
				Concentration	MS	Low	High	
EP080: BTEX (QCLot: 1541409) - continued								
EB1018799-002	Anonymous	EP080: Benzene	71-43-2	10 µg/L	119	70	130	
		EP080: Toluene	108-88-3	10 µg/L	125	70	130	

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INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB1018995	Page	: 1 of 14
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	sch4p4(6) Personal information	Contact	sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	sch4p4(6) Personal information	E-mail	sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	sch4p4(6) Personal information
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point Mackay	Date Samples Received	: 21-OCT-2010
C-O-C number	:	Issue Date	: 03-NOV-2010
Sampler	sch4p4(6) Personal information	No. of samples received	: 126
Order number	:	No. of samples analysed	: 75
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Method		Evaluation: * = Holding time breach ; ✓ = Within holding time.						
Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved								
BHA1/0-0.15m, BHA3/0-0.15m, BHA5/0-0.15m, BHA7/0-0.15m, BHA9/0-0.15m, BHA11/0-0.15m, BHA13/0-0.15m, BHA15/0-0.15m, BHA17/0-0.15m, BHA18/0-0.15m, BHA19/0-0.15m, BHA21/0-0.15m, BHA23/0-0.15m, BHA25/0-0.15m, BHA27/0-0.15m, BHA29/0.2m, BHA29/2.0m, BHA29/3m, BHA30/1m, BHA30/2.5m, BHA31/0-0.15m, BHA33/0-0.15m, BHA35/0-0.15m, BHA37/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA43/0-0.15m, QC4, QC5, BHA47/0-0.15m, BHA49/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m,	BHA2/0-0.15m, BHA4/0-0.15m, BHA6/0-0.15m, BHA8/0-0.15m, BHA10/0-0.15m, BHA12/0-0.15m, BHA14/0-0.15m, BHA16/0-0.15m, QC1, BHA20/0-0.15m, BHA22/0-0.15m, BHA24/0-0.15m, BHA26/0-0.15m, BHA28/0-0.15m, BHA29/1.0m, BHA29/2.5m, BHA30/0.2m, QC3, BHA30/2m, BHA30/3m, BHA32/0-0.15m, BHA34/0-0.15m, BHA36/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA42/0-0.15m, BHA44/0-0.15m, BHA45/0-0.15m, BHA46/0-0.15m, BHA48/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC6	18-OCT-2010	—	—	—	27-OCT-2010	01-NOV-2010	✓

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Matrix: SOIL		Evaluation: * = Holding time breach ; ✓ = Within holding time.						
Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved		18-OCT-2010	27-OCT-2010	16-APR-2011	✓	27-OCT-2010	16-APR-2011	✓
BHA1/0-0.15m, BHA3/0-0.15m, BHA5/0-0.15m, BHA7/0-0.15m, BHA9/0-0.15m, BHA11/0-0.15m, BHA13/0-0.15m, BHA15/0-0.15m, BHA17/0-0.15m, BHA18/0-0.15m, BHA19/0-0.15m, BHA21/0-0.15m, BHA23/0-0.15m, BHA25/0-0.15m, BHA27/0-0.15m, BHA29/0.2m, BHA29/2.0m, BHA29/3m, BHA30/1m, BHA30/2.5m, BHA31/0-0.15m, BHA33/0-0.15m, BHA35/0-0.15m, BHA37/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA43/0-0.15m, QC4, QC5, BHA47/0-0.15m, BHA49/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m,	BHA2/0-0.15m, BHA4/0-0.15m, BHA6/0-0.15m, BHA8/0-0.15m, BHA10/0-0.15m, BHA12/0-0.15m, BHA14/0-0.15m, BHA16/0-0.15m, QC1, BHA20/0-0.15m, BHA22/0-0.15m, BHA24/0-0.15m, BHA26/0-0.15m, BHA28/0-0.15m, BHA29/1.0m, BHA29/2.5m, BHA30/0.2m, QC3, BHA30/2m, BHA30/3m, BHA32/0-0.15m, BHA34/0-0.15m, BHA36/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA42/0-0.15m, BHA44/0-0.15m, BHA45/0-0.15m, BHA46/0-0.15m, BHA48/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC6							



Matrix: SOIL

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved								
BHA1/0-0.15m, BHA3/0-0.15m, BHA5/0-0.15m, BHA7/0-0.15m, BHA9/0-0.15m, BHA11/0-0.15m, BHA13/0-0.15m, BHA15/0-0.15m, BHA17/0-0.15m, BHA18/0-0.15m, BHA19/0-0.15m, BHA21/0-0.15m, BHA23/0-0.15m, BHA25/0-0.15m, BHA27/0-0.15m, BHA29/0.2m, BHA29/2.0m, BHA29/3m, BHA30/1m, BHA30/2.5m, BHA31/0-0.15m, BHA33/0-0.15m, BHA35/0-0.15m, BHA37/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA43/0-0.15m, QC4, QC5, BHA47/0-0.15m, BHA49/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m,	BHA2/0-0.15m, BHA4/0-0.15m, BHA6/0-0.15m, BHA8/0-0.15m, BHA10/0-0.15m, BHA12/0-0.15m, BHA14/0-0.15m, BHA16/0-0.15m, QC1, BHA20/0-0.15m, BHA22/0-0.15m, BHA24/0-0.15m, BHA26/0-0.15m, BHA28/0-0.15m, BHA29/1.0m, BHA29/2.5m, BHA30/0.2m, QC3, BHA30/2m, BHA30/3m, BHA32/0-0.15m, BHA34/0-0.15m, BHA36/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA42/0-0.15m, BHA44/0-0.15m, BHA45/0-0.15m, BHA46/0-0.15m, BHA48/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC6	18-OCT-2010	27-OCT-2010	15-NOV-2010	✓	28-OCT-2010	15-NOV-2010	✓

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Matrix: SOIL		Evaluation: * = Holding time breach ; ✓ = Within holding time.							
Method		Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068A: Organochlorine Pesticides (OC)									
Soil Glass Jar - Unpreserved BHA37/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m, QC3, QC6		BHA38/0-0.15m, BHA40/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC1, QC5,	18-OCT-2010	28-OCT-2010	01-NOV-2010	✓	01-NOV-2010	07-DEC-2010	✓
Soil Glass Jar - Unpreserved BHA25/0-0.15m, BHA27/0-0.15m, BHA29/0.2m, BHA29/2.0m, BHA29/3m, BHA30/1m, BHA30/2.5m, BHA31/0-0.15m, BHA33/0-0.15m, BHA35/0-0.15m,		BHA26/0-0.15m, BHA28/0-0.15m, BHA29/1.0m, BHA29/2.5m, BHA30/0.2m, BHA30/2m, BHA30/3m, BHA32/0-0.15m, BHA34/0-0.15m, BHA36/0-0.15m	18-OCT-2010	29-OCT-2010	01-NOV-2010	✓	01-NOV-2010	08-DEC-2010	✓
Soil Glass Jar - Unpreserved BHA1/0-0.15m, BHA3/0-0.15m, BHA5/0-0.15m, BHA7/0-0.15m, BHA9/0-0.15m, BHA11/0-0.15m, BHA13/0-0.15m, BHA15/0-0.15m, BHA21/0-0.15m, BHA23/0-0.15m,		BHA2/0-0.15m, BHA4/0-0.15m, BHA6/0-0.15m, BHA8/0-0.15m, BHA10/0-0.15m, BHA12/0-0.15m, BHA14/0-0.15m, BHA16/0-0.15m, BHA22/0-0.15m, BHA24/0-0.15m	18-OCT-2010	29-OCT-2010	01-NOV-2010	✓	02-NOV-2010	08-DEC-2010	✓



Matrix: SOIL		Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.							
Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP068B: Organophosphorus Pesticides (OP)									
Soil Glass Jar - Unpreserved BHA37/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m, QC3, QC6	BHA38/0-0.15m, BHA40/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC1, QC5,	18-OCT-2010	28-OCT-2010	01-NOV-2010	✔	01-NOV-2010	07-DEC-2010	✔	
Soil Glass Jar - Unpreserved BHA25/0-0.15m, BHA27/0-0.15m, BHA29/0.2m, BHA29/2.0m, BHA29/3m, BHA30/1m, BHA30/2.5m, BHA31/0-0.15m, BHA33/0-0.15m, BHA35/0-0.15m,	BHA26/0-0.15m, BHA28/0-0.15m, BHA29/1.0m, BHA29/2.5m, BHA30/0.2m, BHA30/2m, BHA30/3m, BHA32/0-0.15m, BHA34/0-0.15m, BHA36/0-0.15m	18-OCT-2010	29-OCT-2010	01-NOV-2010	✔	01-NOV-2010	08-DEC-2010	✔	
Soil Glass Jar - Unpreserved BHA1/0-0.15m, BHA3/0-0.15m, BHA5/0-0.15m, BHA7/0-0.15m, BHA9/0-0.15m, BHA11/0-0.15m, BHA13/0-0.15m, BHA15/0-0.15m, BHA21/0-0.15m, BHA23/0-0.15m,	BHA2/0-0.15m, BHA4/0-0.15m, BHA6/0-0.15m, BHA8/0-0.15m, BHA10/0-0.15m, BHA12/0-0.15m, BHA14/0-0.15m, BHA16/0-0.15m, BHA22/0-0.15m, BHA24/0-0.15m	18-OCT-2010	29-OCT-2010	01-NOV-2010	✔	02-NOV-2010	08-DEC-2010	✔	

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Matrix: SOIL

Method		Sample Date	Extraction / Preparation			Evaluation: * = Holding time breach ; ✓ = Within holding time			
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Analysis			
						Date analysed	Due for analysis	Evaluation	
EP080/071: Total Petroleum Hydrocarbons									
Soil Glass Jar - Unpreserved BHA25/0-0.15m, BHA28/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m		BHA26/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m,	18-OCT-2010	26-OCT-2010	01-NOV-2010	✓	28-OCT-2010	01-NOV-2010	✓
Soil Glass Jar - Unpreserved BHA13/0-0.15m, BHA15/0-0.15m, QC1, QC5		BHA14/0-0.15m, BHA16/0-0.15m, QC3,	18-OCT-2010	27-OCT-2010	01-NOV-2010	✓	28-OCT-2010	01-NOV-2010	✓
Soil Glass Jar - Unpreserved BHA13/0-0.15m, BHA15/0-0.15m, BHA25/0-0.15m, BHA28/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m, QC3,		BHA14/0-0.15m, BHA16/0-0.15m, BHA26/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m, QC1, QC5	18-OCT-2010	28-OCT-2010	01-NOV-2010	✓	29-OCT-2010	07-DEC-2010	✓
EP080: BTEX									
Soil Glass Jar - Unpreserved BHA25/0-0.15m, BHA28/0-0.15m, BHA39/0-0.15m, BHA41/0-0.15m, BHA51/0-0.15m, BHA53/0-0.15m		BHA26/0-0.15m, BHA38/0-0.15m, BHA40/0-0.15m, BHA50/0-0.15m, BHA52/0-0.15m,	18-OCT-2010	26-OCT-2010	01-NOV-2010	✓	28-OCT-2010	01-NOV-2010	✓
Soil Glass Jar - Unpreserved BHA13/0-0.15m, BHA15/0-0.15m, QC1, QC5		BHA14/0-0.15m, BHA16/0-0.15m, QC3,	18-OCT-2010	27-OCT-2010	01-NOV-2010	✓	28-OCT-2010	01-NOV-2010	✓
Matrix: WATER									

Matrix: WATER

Method		Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.						
Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Unfiltered; Lab-acidified								
GW2, GW5, QC7,	GW4, QC2, QC8	18-OCT-2010	27-OCT-2010	16-APR-2011	✔	28-OCT-2010	16-APR-2011	✔



Matrix: WATER		Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.							
Method	Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EG035T: Total Recoverable Mercury by FIMS									
Clear Plastic Bottle - Unfiltered; Lab-acidified	GW2, GW5, QC7,	GW4, QC2, QC8	18-OCT-2010	—	—	—	28-OCT-2010	15-NOV-2010	✔
EP080/071: Total Petroleum Hydrocarbons									
Amber VOC Vial - HCl	TB1, TB3	TB2,	18-OCT-2010	01-NOV-2010	01-NOV-2010	✔	01-NOV-2010	01-NOV-2010	✔
EP080: BTEX									
Amber VOC Vial - HCl	TB1, TB3	TB2,	18-OCT-2010	01-NOV-2010	01-NOV-2010	✔	01-NOV-2010	01-NOV-2010	✔

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Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: SOIL

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	7	66	10.6	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	6	42	14.3	10.0	✓	
Total Mercury by FIMS	EG035T	7	66	10.6	10.0	✓	
Total Metals by ICP-AES	EG005T	7	66	10.6	10.0	✓	
TPH - Semivolatile Fraction	EP071	2	18	11.1	10.0	✓	
TPH Volatiles/BTEX	EP080	3	18	16.7	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	3	42	7.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	66	6.1	5.0	✓	
Total Metals by ICP-AES	EG005T	4	66	6.1	5.0	✓	
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	
TPH Volatiles/BTEX	EP080	2	18	11.1	5.0	✓	
Method Blanks (MB)							
Pesticides by GCMS	EP068	3	42	7.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	66	6.1	5.0	✓	
Total Metals by ICP-AES	EG005T	4	66	6.1	5.0	✓	
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	
TPH Volatiles/BTEX	EP080	2	18	11.1	5.0	✓	
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	3	42	7.1	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	66	6.1	5.0	✓	
Total Metals by ICP-AES	EG005T	4	66	6.1	5.0	✓	
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	
TPH Volatiles/BTEX	EP080	2	18	11.1	5.0	✓	
Matrix: WATER							

Matrix: WATER

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	5	20.0	10.0	✓	
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	5	20.0	5.0	✓	
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement



Matrix: WATER

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	5	20.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	5	20.0	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	ALS QCS3 requirement

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Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.



Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

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Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	1801250-002	---	Methoxychlor	72-43-5	51.2 %	52.4-129%	Recovery less than lower control limit
EP068B: Organophosphorus Pesticides (OP)	1801248-002	---	Demeton-S-methyl	919-86-8	17.4 %	31.2-112%	Recovery less than lower control limit
EP068B: Organophosphorus Pesticides (OP)	1801250-002	---	Demeton-S-methyl	919-86-8	18.4 %	31.2-112%	Recovery less than lower control limit
EP068B: Organophosphorus Pesticides (OP)	1801248-002	---	Monocrotophos	6923-22-4	130 %	33-130%	Recovery greater than upper control limit
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EB1018995-042	BHA22/0-0.15m	Zinc	7440-66-6	42.1 %	70-130%	Recovery less than lower data quality objective
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	gamma-BHC	58-89-9	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	Heptachlor	76-44-8	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	Aldrin	309-00-2	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	Dieldrin	60-57-1	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	Endrin	72-20-8	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068A: Organochlorine Pesticides (OC)	EB1018995-080	BHA38/0-0.15m	4,4'-DDT	50-29-3	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068B: Organophosphorus Pesticides (OP)	EB1018995-080	BHA38/0-0.15m	Diazinon	333-41-5	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068B: Organophosphorus Pesticides (OP)	EB1018995-080	BHA38/0-0.15m	Chlorpyrifos-methyl	5598-13-0	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068B: Organophosphorus Pesticides (OP)	EB1018995-080	BHA38/0-0.15m	Phosphor-ethyl	23505-41-1	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068B: Organophosphorus Pesticides (OP)	EB1018995-080	BHA38/0-0.15m	Bromophos-ethyl	4824-78-6	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.
EP068B: Organophosphorus Pesticides (OP)	EB1018995-080	BHA38/0-0.15m	Prothiofos	34643-46-4	Not Determined	---	Matrix spike recovery not determined due to sample matrix interference.

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP080: BTEX	1806264-006	---	Benzene	71-43-2	130 %	77.6-122%	Recovery greater than upper control limit
EP080: BTEX	1806264-006	---	Toluene	108-88-3	145 %	71-122%	Recovery greater than upper control limit
EP080: BTEX	1806264-006	---	Ethylbenzene	100-41-4	138 %	73-125%	Recovery greater than upper control limit

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Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries - Continued							
EP080: BTEX	1806264-006	---	meta- & para-Xylene	108-38-3 106-42-3	143 %	70.4-129%	Recovery greater than upper control limit
EP080: BTEX	1806264-006	---	ortho-Xylene	95-47-6	135 %	72-124%	Recovery greater than upper control limit

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.

Regular Sample Surrogates

Sub-Matrix: SOIL

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	EB1018995-080	BHA38/0-0.15m	Dibromo-DDE	21655-73-2	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP068T: Organophosphorus Pesticide Surrogate	EB1018995-080	BHA38/0-0.15m	DEF	78-48-8	Not Determined	---	Surrogate recovery not determined due to (target or non-target) matrix interferences

Sub-Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080S: TPH(V)/BTEX Surrogates	EB1018995-123	TB1	Toluene-D8	2037-26-5	129 %	79.2-119.6 %	Recovery greater than upper data quality objective
EP080S: TPH(V)/BTEX Surrogates	EB1018995-124	TB2	Toluene-D8	2037-26-5	127 %	79.2-119.6 %	Recovery greater than upper data quality objective
EP080S: TPH(V)/BTEX Surrogates	EB1018995-125	TB3	Toluene-D8	2037-26-5	127 %	79.2-119.6 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

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COC Page 1 of



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : **EB1019214**

Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information dalsglobal.com
Telephone	: +61 07 55789944	Telephone	: sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	Page	: 1 of 2
Order number	: ---	Quote number	: EB2010GILSUT0312 (BN/220/10)
C-O-C number	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point, Mackay		
Sampler	: sch4p4(6) Personal information		

Dates

Date Samples Received	: 27-OCT-2010	Issue Date	: 28-OCT-2010 14:36
Client Requested Due Date	: 03-NOV-2010	Scheduled Reporting Date	: 03-NOV-2010

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 5.1,4.4,3.6°C - Ice present
No. of coolers/boxes	: 3 MEDIUM	No. of samples received	: 1
Security Seal	: Intact.	No. of samples analysed	: 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Sample(s) have been received within recommended holding times.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Matt Goodwin.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Matrix: WATER

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-02T 8 metals (Total)
EB1019214-001	23-OCT-2010 15:00	GW3	✓

Requested Deliverables

sch4p4(6) Personal information

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - XTab (XTAB)

Email @access.gs
Email @access.gs
Email @access.gs
Email @access.gs
Email @access.gs
Email @access.gs
Email @access.gs
Email @access.gs

sch4p4(6) Personal information

- A4 - AU Tax Invoice (INV)

Email @access.gs



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB1019214	Page	: 1 of 3
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---	Date Samples Received	: 27-OCT-2010
C-O-C number	: ---	Issue Date	: 03-NOV-2010
Sampler	: sch4p4(6) Personal information	No. of samples received	: 1
Site	: Shoal Point, Mackay	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories		
This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.		
Signatories	Position	Accreditation Category
: sch4p4(6) Personal information	: Senior Inorganic Chemist	: Inorganics

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Page : 2 of 3
Work Order : EB1019214
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: WATER				Client sample ID	GW3				
				Client sampling date / time	23-OCT-2010 15:00				
Compound	CAS Number	LOR	Unit	EB1019214-001					
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	0.064					
Cadmium	7440-43-9	0.0001	mg/L	<0.0001					
Chromium	7440-47-3	0.001	mg/L	<0.001					
Copper	7440-50-8	0.001	mg/L	0.004					
Nickel	7440-02-0	0.001	mg/L	0.002					
Lead	7439-92-1	0.001	mg/L	<0.001					
Zinc	7440-66-6	0.005	mg/L	<0.005					
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001					

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QUALITY CONTROL REPORT

Work Order	: EB1019214	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point, Mackay	Date Samples Received	: 27-OCT-2010
C-O-C number	: ---	Issue Date	: 03-NOV-2010
Sampler	: sch4p4(6) Personal information	No. of samples received	: 1
Order number	: ---	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
: sch4p4(6) Personal information	: Senior Inorganic Chemist	: Inorganics



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

- Key :
- Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 - CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 - LOR = Limit of reporting
 - RPD = Relative Percentage Difference
 - # = Indicates failed QC

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Page : 3 of 5
Work Order : EB1019214
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			
EG020T: Total Metals by ICP-MS (QC Lot: 1542309)						Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EB1019167-007	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0101	0.0102	1.0	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.059	0.059	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.062	0.061	0.0	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.34	1.35	0.9	0% - 20%
EB1019167-016	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1542839)									
EB1018864-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)	
							Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1542309)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	98.2	76	120
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	103	84	115
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.100 mg/L	118	82	124
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.200 mg/L	107	82	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.100 mg/L	114	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.100 mg/L	111	81	121
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.200 mg/L	101	81	123
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1542839)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	98.0	80	116

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Work Order : EB1019214
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1542309)							
EB1019167-008	Anonymous	EG020A-T: Arsenic	7440-38-2	1.000 mg/L	104	70	130
		EG020A-T: Cadmium	7440-43-9	0.500 mg/L	99.8	70	130
		EG020A-T: Chromium	7440-47-3	1.000 mg/L	110	70	130
		EG020A-T: Copper	7440-50-8	1.000 mg/L	94.6	70	130
		EG020A-T: Lead	7439-92-1	1.000 mg/L	96.1	70	130
		EG020A-T: Nickel	7440-02-0	1.000 mg/L	106	70	130
		EG020A-T: Zinc	7440-66-6	1.000 mg/L	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1542839)							
EB1018864-003	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	70.0	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB1019214	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	sch4p4(6) Personal information	Contact	sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	sch4p4(6) Personal information	E-mail	sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: Shoal Point, Mackay	Date Samples Received	: 27-OCT-2010
C-O-C number	: ---	Issue Date	: 03-NOV-2010
Sampler	sch4p4(6) Personal information	No. of samples received	: 1
Order number	: ---	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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 Part of the **ALS Laboratory Group**
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Page : 2 of 5
Work Order : EB1019214
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: WATER

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unspecified GW3	23-OCT-2010	01-NOV-2010	21-APR-2011	✓	01-NOV-2010	21-APR-2011	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unspecified GW3	23-OCT-2010	—	—	—	01-NOV-2010	20-NOV-2010	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	1	5	20.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	5	20.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	5	20.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	5	20.0	5.0	✔	ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✔	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QW/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EB1019167-008	Anonymous	Zinc	7440-66-6	Not Determined	—	MS recovery not determined, background level greater than or equal to 4x spike level.

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

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Time: _____

Gilbert and Sutherland - Robina Office - Phone: 0755 789944, Fax: 0755 789945



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **EB1020676**

Client : **GILBERT & SUTHERLAND PTY LTD**
Contact : sch4p4(6) Personal information
Address : **P O BOX 4115**
ROBINA QLD, AUSTRALIA 4230

Laboratory : **Environmental Division Brisbane**
Contact : sch4p4(6) Personal information
Address : **32 Shand Street Stafford QLD Australia**
4053

E-mail : sch4p4(6) Personal information
Telephone : **+61 07 55789944**
Facsimile : **+61 07 55789945**

E-mail : sch4p4(6) Personal information
Telephone : **alsglobal.com**
Facsimile : **+61 7 3243 7218**

Project : **10527**
Order number : —
C-O-C number : —
Site : —
Sampler : —

Page : **1 of 2**
Quote number : **EB2010GILSUT0312 (BN/220/10)**
QC Level : **NEPM 1999 Schedule B(3) and ALS**
QCS3 requirement

Dates

Date Samples Received : **16-NOV-2010**
Client Requested Due Date : **17-NOV-2010**
Issue Date : **16-NOV-2010 17:20**
Scheduled Reporting Date : **17-NOV-2010**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **1 Medium**
Security Seal : **Intact.**
Temperature : **16.5°C - Ice bricks present**
No. of samples received : **1**
No. of samples analysed : **1**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Sample(s) have been received within recommended holding times.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Matt Goodwin.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exist.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Matrix: WATER

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-01 7 Metals
EB1020676-001	13-NOV-2010 13:00	QC9A	✓

Requested Deliverables

sch4p4(6) Personal information

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental (SRN)
- Chain of Custody (CoC) (COC)
- EDI Format - ENMRG (ENMRG)
- EDI Format - XTab (XTAB)

Email
Email
Email
Email
Email
Email
Email
Email
sch4p4(6) Personal information

sch4p4(6) Personal information

- A4 - AU Tax Invoice (INV)

Email
Email
@access.gs
@access.gs
@access.gs
@access.gs
@access.gs
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Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB1020676	Page	: 1 of 3
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 07 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---		
C-O-C number	: ---	Date Samples Received	: 16-NOV-2010
Sampler	: ---	Issue Date	: 17-NOV-2010
Site	: ---		
Quote number	: BN/220/10	No. of samples received	: 1
		No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
sch4p4(6) Personal information	Senior Inorganic Chemist	Inorganics

Environmental Division Brisbane

Part of the ALS Laboratory Group

32 Shand Street Stafford QLD Australia 4053

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Page : 2 of 3
Work Order : EB1020676
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: WATER				Client sample ID	QC9A	---	---	---	---
				Client sampling date / time	13-NOV-2010 13:00	---	---	---	---
Compound	CAS Number	LOR	Unit		EB1020676-001	---	---	---	---
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		0.015	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L		<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L		0.002	---	---	---	---
Nickel	7440-02-0	0.001	mg/L		0.002	---	---	---	---
Lead	7439-92-1	0.001	mg/L		<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L		<0.005	---	---	---	---

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Environmental Division

QUALITY CONTROL REPORT

Work Order	: EB1020676	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115 ROBINA QLD, AUSTRALIA 4230	Address	: 32 Shand Street Stafford QLD Australia 4053
E-mail	: sch4p4(6) Personal information	E-mail	: dalsglobal.com
Telephone	: +61 07 55789944	Telephone	: sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: —	Date Samples Received	: 16-NOV-2010
C-O-C number	: —	Issue Date	: 17-NOV-2010
Sampler	: —	No. of samples received	: 1
Order number	: —	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories

: sch4p4(6) Personal information

Position

Senior Inorganic Chemist

Accreditation Category

Inorganics

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General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

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Page : 3 of 5
Work Order : EB1020676
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: WATER		Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1563365)									
EB1020676-001	QC9A	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.0	0% - 50%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: WATER

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
EG020F: Dissolved Metals by ICP-MS (QCLot: 1563365)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	101	85	124
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	101	88	117
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.100 mg/L	108	88	127
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.200 mg/L	116	86	118
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.100 mg/L	105	89	113
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.100 mg/L	106	88	119
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.200 mg/L	102	85	130

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Page : 5 of 5
Work Order : EB1020676
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- No Matrix Spike (MS) Results are required to be reported.



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB1020676	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	sch4p4(6) Personal information	Contact	sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	sch4p4(6) Personal information	E-mail	: dalsglobal.com
Telephone	: +61 07 55789944	Telephone	sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: 10527	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ---	Date Samples Received	: 16-NOV-2010
C-O-C number	: ---	Issue Date	: 17-NOV-2010
Sampler	: ---	No. of samples received	: 1
Order number	: ---	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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Page : 2 of 5
Work Order : EB1020676
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: WATER

Method	Sample Date	Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.					
		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered QC9A	13-NOV-2010	—	12-MAY-2011	—	17-NOV-2010	12-MAY-2011	✔



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: WATER

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
Analytical Methods		QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	1	100.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

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Page : 4 of 5
Work Order : EB1020676
Client : GILBERT & SUTHERLAND PTY LTD
Project : 10527



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

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sch4p4(6) Personal information

From: sch4p4(6) Personal information
Sent: Tuesday, 9 November 2010 11:46 AM
To: sch4p4(6) Personal information
Cc: sch4p4(6) Personal information
Subject: EB1018995 - Rebatch for Tri & hexavalent Cr
Importance: High

Guys – this is very urgent.

1 x soil sample for Cr3+ and Cr6+.

We have reported a high Cr result which is above the trigger levels.

How was your customer experience? Please send us your feedback

sch4p4(6) Personal information

SENIOR CLIENT SERVICES**ALS | Environmental**

Address
32 Shand Street, Stafford, QLD, 4053
PHONE +61 7 3243 7222
DIRECT +61 7 3243 7128
FAX +61 7 3243 7218

www.alsglobal.com

Please consider the environment before printing this email.

From: sch4p4(6) Personal information (mailto:sch4p4(6) Personal information@access.gs)
Sent: Tuesday, 9 November 2010 10:45 AM

To: sch4p4(6) Personal information
Cc: sch4p4(6) Personal information

Subject: EB1018995 - Rebatch for Tri & hexavalent Cr

sch4p4(6) Personal information

Hi [redacted] (1)
Further to our discussion, could you please proceed with a rebatch of sample no EB1018995-034 (our reference - BHA18/0-0.15m) and analyse for trivalent and hexavalent Chromium.

As mentioned, please provide the quickest possible TAT – we will pay the relevant mark-up.

Please call if there are any problems.

Thanks and regards,

sch4p4(6) Personal information

Director/Principal Environmental Scientist
BAppSc(Env)(Hons)
www.access.gs | [Download vCard](#)

Environmental Division
Brisbane
Work Order
EB1020108



Telephone : +61-7-3243 7222



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **EB1020108**

Client : **GILBERT & SUTHERLAND PTY LTD**
Contact : sch4p4(6) Personal information
Address : **P O BOX 4115**
ROBINA QLD, AUSTRALIA 4230

E-mail : sch4p4(6) Personal information
Telephone : **+61 55789944**
Facsimile : **+61 07 55789945**

Project : ---
Order number : ---
C-O-C number : ---
Site : ---
Sampler : ---

Laboratory : **Environmental Division Brisbane**
Contact : sch4p4(6) Personal information
Address : **32 Shand Street Stafford QLD Australia**
4053

E-mail : sch4p4(6) Personal information
Telephone : sch4p4(6) Personal information
Facsimile : **+61 7 3243 7218**

Page : **1 of 2**

Quote number : **EB2010GILSUT0312 (BN/220/10)**

QC Level : **NEPM 1999 Schedule B(3) and ALS**
QCS3 requirement

Dates

Date Samples Received : **09-NOV-2010**
Client Requested Due Date : **12-NOV-2010**

Issue Date : **11-NOV-2010 09:54**
Scheduled Reporting Date : **12-NOV-2010**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **rebatch**
Security Seal : **Intact.**

Temperature : **-**
No. of samples received : **1**
No. of samples analysed : **1**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- A 25% surcharge is applicable for 3 day turn around of results.
- Sample(s) have been received within recommended holding times.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Matt Goodwin.
- Analytical work for this work order will be conducted at ALS Brisbane.
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - E Moisture	SOIL - E Trivalent
EB1020108-001	18-OCT-2010 15:00	BHA18/0-0.15m	✓	✓

sch4p4(6) Personal information

- | | | |
|-------|--------------------|--------------|
| Email | | 2groupgs.com |
| Email | | 2groupgs.com |
| Email | | 2groupgs.com |
| Email | | 2groupgs.com |
| Email | Sch4p4(6) Persona | 2groupgs.com |
| Email | | 2groupgs.com |
| Email | | 2groupgs.com |
| Email | | @access.gs |



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EB1020108	Page	: 1 of 3
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	: sch4p4(6) Personal information@alsglobal.com	E-mail	: sch4p4(6) Personal information@alsglobal.com
Telephone	: +61 55789944	Telephone	: sch4p4(6) Personal information
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---		
C-O-C number	: ---	Date Samples Received	: 09-NOV-2010
Sampler	: ---	Issue Date	: 12-NOV-2010
Site	: ---		
Quote number	: BN/220/10	No. of samples received	: 1
		No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
sch4p4(6) Personal information	Senior Inorganic Instrument Chemist	Inorganics
	Senior Inorganic Chemist	Inorganics

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A Campbell Brothers Limited Company

Page : 2 of 3
Work Order : EB1020108
Client : GILBERT & SUTHERLAND PTY LTD
Project : —



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting



Analytical Results

Sub-Matrix: SOIL				Client sample ID	BHA18/0-0.15m	---	---	---	---
				Client sampling date / time	18-OCT-2010 15:00	---	---	---	---
Compound	CAS Number	LOR	Unit	EB1020108-001	---	---	---	---	---
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	---	1.0	%	13.0	---	---	---	---	---
EG005T: Total Metals by ICP-AES									
Chromium	7440-47-3	2	mg/kg	64	---	---	---	---	---
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	---	---	---	---	---
EG049: Trivalent Chromium									
Trivalent Chromium	16065-83-1	2	mg/kg	64	---	---	---	---	---

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RTI Act 2009



QUALITY CONTROL REPORT

Work Order	: EB1020108	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: —	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: —	Date Samples Received	: 09-NOV-2010
C-O-C number	: —	Issue Date	: 12-NOV-2010
Sampler	: —	No. of samples received	: 1
Order number	: —	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories

Position

Accreditation Category

: sch4p4(6) Personal information

Senior Inorganic Instrument Chemist
Senior Inorganic Chemist

Inorganics
Inorganics

Environmental Division Brisbane
Part of the ALS Laboratory Group
32 Shand Street Stafford QLD Australia 4053
Tel. +61-7-3243 7222 Fax. +61-7-3243 7218 www.alsglobal.com
A Campbell Brothers Limited Company



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC

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Page : 3 of 5
Work Order : EB1020108
Client : GILBERT & SUTHERLAND PTY LTD
Project : —



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 1556583)									
EB1020108-001	BHA18/0-0.15m	EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
							LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1556424)									
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.93 mg/kg	98.3	89	129	
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 1556583)									
EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	81.0	80	120	

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Page : 5 of 5
Work Order : EB1020108
Client : GILBERT & SUTHERLAND PTY LTD
Project : —



Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

● No Matrix Spike (MS) Results are required to be reported.



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: EB1020108	Page	: 1 of 5
Client	: GILBERT & SUTHERLAND PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: sch4p4(6) Personal information	Contact	: sch4p4(6) Personal information
Address	: P O BOX 4115	Address	: 32 Shand Street Stafford QLD Australia 4053
	: ROBINA QLD, AUSTRALIA 4230		
E-mail	: sch4p4(6) Personal information	E-mail	: sch4p4(6) Personal information
Telephone	: +61 55789944	Telephone	: +61 7 3243 7218
Facsimile	: +61 07 55789945	Facsimile	: +61 7 3243 7218
Project	: ---	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ---	Date Samples Received	: 09-NOV-2010
C-O-C number	: ---	Issue Date	: 12-NOV-2010
Sampler	: ---	No. of samples received	: 1
Order number	: ---	No. of samples analysed	: 1
Quote number	: BN/220/10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

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Page : 2 of 5
Work Order : EB1020108
Client : GILBERT & SUTHERLAND PTY LTD
Project : —



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: SOIL

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
BHA18/0-0.15m	18-OCT-2010	—	—	—	11-NOV-2010	01-NOV-2010	*
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
BHA18/0-0.15m	18-OCT-2010	11-NOV-2010	16-APR-2011	✓	11-NOV-2010	16-APR-2011	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved							
BHA18/0-0.15m	18-OCT-2010	11-NOV-2010	15-NOV-2010	✓	12-NOV-2010	18-NOV-2010	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	1	100.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	1	100.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Hexavalent Chromium by Alkaline Digestion	EG048	SOIL	USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by UV-VIS spectrophotometer following pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Trivalent Chromium by Alkaline Digestion	EG049-Alk	SOIL	(APHA 21st ed., 3500 Cr-A&B & 3120 and USEPA USEPA SW846, Method 3060A). The difference between Total and Hexavalent Chromium. The total Chromium is determined by ICPAES and the Hexavalent chromium is extracted by alkaline digestion and the digest is determined by UV-vis. The instrument uses colour development using dephenylcarbazide. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	USEPA SW846, Method 3060A.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content Soil Glass Jar - Unpreserved BHA18/0-0.15m	—	—	—	11-NOV-2010	01-NOV-2010	10

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.



ABN: 83 117 421 324
OCTIEF Pty Limited
1a/22 Ereton Drive, Arundel Qld 4214
Enquiries: 1300 138 366
Ph: (07) 5537 2536
Fax: (07) 5537 2535
corporate@octief.com.au
www.octief.com.au

Date Sampled: 18/10/2010
Date Received: 28/10/2010

Job #: BSQ100844
ID Date: 29/10/2010

Certificate of Analysis

Laboratory Report

SITE LOCATION: EB1018995

SAMPLED BY: sch4p4(6) Personal information

SAMPLE IDENTIFICATION: Twenty six samples as submitted.

SCOPE: Microscope examination for the presence of asbestos.

INTRODUCTION: Twenty six samples submitted by ALS Environmental, were examined for the presence of asbestos.

METHODOLOGY: Samples are examined in accordance with the methodology outlined in the Australian Standards (AS 4964 – 2004) and In-House Method QLA003.

Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining

Sample Description	Approx Dimensions (L/W/T)	Sample ID	Asbestos Detected (Y/N)	Fibre Type Detected
BHA17/0-0.15 – Non homogenous soil sample	82.54g	844 – 01	N*	1Org
BHA18/0-0.15 – Non homogeneous soil sample	61.16g	844 – 02	N*	1Org
BHA19/0-0.15 – Non homogeneous soil sample	77.81g	844 – 03	N*	1Org
BHA20/0-0.15 – Non homogeneous soil sample	88.48g	844 – 04	N*	1Org
BHA25/0-0.15 – Non homogeneous soil sample	44.81g	844 – 05	N*	1Org
BHA26/0-0.15 – Non homogeneous soil sample	32.71g	844 – 06	N*	1Org
BHA28/0-0.15 – Non homogeneous soil sample	35.99g	844 – 07	N*	1Org
BHA38/0-0.15 – Non homogeneous soil sample	35.14g	844 – 08	N*	1Org
BHA39/0-0.15 – Non homogeneous soil sample	40.94g	844 – 09	N*	1Org
BHA40/0-0.15 – Non homogeneous soil sample	33.73g	844 – 10	N*	1Org

Abbreviations:
1Org – Organic Fibres 2SMF – Synthetic Mineral Fibres 3UMF – Unidentified Mineral Fibres 4NFD – No Fibres Detected

SCOPE OF ACCREDITATION: Class 7.02.01: Estimation of airborne asbestos dust by the membrane filter method



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corporate@octief.com.au
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Date Sampled: 18/10/2010
Date Received: 28/10/2010

Job #: BSQ100844
ID Date: 29/10/2010

Sample Description	Approx Dimensions (L/W/T)	Sample ID	Asbestos Detected (Y/N)	Fibre Type Detected
BHA41/0-0.15 – Non homogeneous soil sample	30.25g	844 – 11	N*	'Org
BHA42/0-0.15 – Non homogeneous soil sample	70.65g	844 – 12	N*	'Org
BHA43/0-0.15 – Non homogeneous soil sample	49.43g	844 – 13	N*	'Org
BHA44/0-0.15 – Non homogeneous soil sample	59.12g	844 – 14	N*	'Org
BHA45/0-0.15 – Non homogeneous soil sample	75.20g	844 – 15	N*	'Org
BHA46/0-0.15 – Non homogeneous soil sample	49.06g	844 – 16	N*	'Org
BHA47/0-0.15 – Non homogeneous soil sample	51.07g	844 – 17	N*	'Org
BHA48/0-0.15 – Non homogeneous soil sample	74.96g	844 – 18	N*	'Org
BHA49/0-0.15 – Non homogeneous soil sample	65.46g	844 – 19	N*	'Org
BHA50/0-0.15 – Non homogeneous soil sample	39.13g	844 – 20	N*	'Org
BHA51/0-0.15 – Non homogeneous soil sample	35.69g	844 – 21	N*	'Org
BHA52/0-0.15 – Non homogeneous soil sample	37.59g	844 – 22	N*	'Org
BHA53/0-0.15 – Non homogeneous soil sample	36.32g	844 – 23	N*	'Org
QC3 – Non homogeneous soil sample	76.83g	844 – 24	N*	'Org
QC4 – Non homogenous soil sample	72.83g	844 – 25	N*	'Org
119 – Non homogeneous soil sample	32.39g	844 – 26	N*	'Org

*No Asbestos Detected at the Reporting Limit of 0.1g/kg.

sch4p4(6) Personal information
.....
NATA Approved Identifier
sch4p4(6) Personal information

sch4p4(6) Personal information
.....
NATA Approved Signatory
sch4p4(6) Personal information

Abbreviations:
'Org – Organic Fibres ²SMF – Synthetic Mineral Fibres ³UMF – Unidentified Mineral Fibres ⁴NFD – No Fibres Detected

2 of 2

SCOPE OF ACCREDITATION: Class 7.92.01: Estimation of airborne asbestos dust by the membrane filter method



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Cu 28/10/2010 @ 5.25pm

ALS LABORATORY GROUP

CHAIN OF CUSTODY DOCUMENTATION



ALS Laboratory Group

Client: Gilbert & Sutherland

Address: Office: Regina

Project Name: (b) (6) Personal information

Phone: 306 789 9944

Project ID: 10527

Client: (b) (6) Personal information

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ALS LABORATORY GROUP

COC Page 1 of

ENFM (204/5)

Re: Asbestos Analysis for Project 10527 - Shoal Point, Mackay (SGS Ref. SE82595)

sch4p4(6) Personal information @access.gs]

Sent: Friday, 29 October 2010 2:25 PM

To: AU.SampleReceipt.Sydney (Sydney)

sch4p4(6) Personal information

Thank you for the confirmation. Asbestos is not required on these triplicate samples.

Regards,

sch4p4(6) Personal information

Sent from my iPhone

On 29/10/2010, at 1:06 PM, "AU.SampleReceipt.Sydney (Sydney)"
<AU.SampleReceipt.Sydney@sgs.com> wrote:

sch4p4(6) Personal information

As per your request on the phone, the asbestos analysis will be deleted from this job.

Kind Regards

sch4p4(6) Personal information
Environmental Services
Sample Administration

Phone: +61 (0)2 8594 0400

From: AU.SampleReceipt.Sydney (Sydney)

Sent: Friday, 29 October 2010 10:40 AM

sch4p4(6) Personal information @groups.com

Subject: Asbestos Analysis for Project 10527 - Shoal Point, Mackay (SGS Ref. SE82595)

sch4p4(6) Personal information

SGS has received the samples for the attached COC, however a separate homogenised portion (~100g) was not supplied for Asbestos analysis. To meet our NATA requirements we are unable to subsample from the glass jar supplied.

Please confirm if additional sample will be supplied for the samples marked for Asbestos otherwise SGS will be unable to proceed with the request of Asbestos analysis on a NATA endorsed report.

Alternately if additional sample cannot be supplied then SGS is able to subsample from the sample we have at hand however a NON-NATA endorsed report will be issued separately for asbestos analysis.

Please confirm which option will be undertaken.

Kind Regards

sch4p4(6) Personal information
Environmental Services
Sample Administration

SGS Australia Pty Ltd
Unit 16, 33 Maddox St

<https://www.email.sgs.com/owa/AU.SampleReceipt.Sydney@sgs.com/?ae=Item&t=I...> 29/10/2010



SAMPLE RECEIPT ADVICE (SRA)

1 November 2010

Client Details

Requested By : sch4p4(6) Personal information
Client : Gilbert & Sutherland Pty Ltd
Contact : sch4p4(6) Personal information
Address : P O Box 4115
Robina QLD 4230

Email : sch4p4(6) Personal information@groups.com
Telephone : sch4p4(6) Personal information
Facsimile : 07 3264 1333

Project : 10527 - Shoal Point - Mackay
Order Number :
Samples : 5 Soils

Laboratory Details

Laboratory : SGS Environmental Services
Manager : sch4p4(6) Personal information
Address : Unit 16, 33 Maddox Street
Alexandria NSW 2015

Email : au.samplereceipt.sydney@sgs.com
Telephone : 61 2 8594 0400
Facsimile : 61 2 8594 0499

Report No : SE82595
No. of Samples : 5
Due Date : 3/11/2010

Date Instructions Received : 29/10/2010
Sample Receipt Date : 29/10/2010

Samples received in good order	: YES	Samples received in correct containers	: YES
Samples received without headspace	: YES	Sufficient quantity supplied	: YES
Upon receipt sample temperature	: Cool	Cooling Method	: Ice Pack
Sample containers provided by	: Other Lab	Samples clearly Labelled	: YES
Turnaround time requested	: Standard	Completed documentation received	: YES

Samples will be held for 1 month for water samples and 3 months for soil samples from date of receipt of samples, unless otherwise instructed.

Comments

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.

The signed chain of custody will be returned to you with the original report.



SAMPLE RECEIPT ADVICE (SRA) - continued

Client : Gilbert & Sutherland Pty Ltd
Project : 10527 - Shoal Point - Mackay

Report No : SE82595

Summary of Samples and Requested Analysis

The table below represents SGS Environmental Service's understanding and interpretation of the customer supplied sample request.

Please indicate ASAP if your request differs from these details.

Testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

Note that a small X in the table below indicates some testing has not been requested in the package.

Sample No.	Description	Metals Prep, soil 8 HM	MBTEX in Soil	TRH in soil with C6-C9 by P/T	OC Pesticides in Soil	OP Pesticides in Soil by GC/MS	Metals in Soil by ICP-OES	Mercury Cold Vapor/Hg Analyser	Moisture
1	QC1A	X	X	X	X	X	X	X	X
2	QC3A	X	X	X	X	X	X	X	X
3	QC4A	X					X	X	X
4	QC5A	X	X	X	X	X	X	X	X
5	QC6A	X			X	X	X	X	X

Sample No.	Description
1	QC1A
2	QC3A
3	QC4A
4	QC5A
5	QC6A



ANALYTICAL REPORT

3 November 2010

Gilbert & Sutherland Pty Ltd
P O Box 4115
Robina
QLD 4230

Attention: sch4p4(6) Personal information

Your Reference: 10527 - Shoal Point - Mackay

Our Reference: SE82595
Samples: 5 Soils
Received: 29/10/2010

Preliminary Report Sent: Not Issued

These samples were analysed in accordance with your written instructions.

For and on Behalf of:
SGSENVIRONMENTALSERVICES

Sample Receipt: sch4p4(6) Personal information **AU.SampleReceipt.Sydney@sgs.com**
Production Manager: sch4p4(6) Personal information **@sgs.com**

Results Approved and/or Authorised by:

sch4p4(6) Personal information

Organics Signatory

Metals Signatory



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MBTEX in Soil Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE82595-1 QC1A Soil 18/10/2010	SE82595-2 QC3A Soil 19/10/2010	SE82595-4 QC5A Soil 19/10/2010
Date Extracted (MBTEX)		1/11/2010	1/11/2010	1/11/2010
Date Analysed (MBTEX)		1/11/2010	1/11/2010	1/11/2010
Methyl-tert-butyl ether (MtBE)	mg/kg	<0.1	<0.1	<0.1
Benzene	mg/kg	<0.1	<0.1	<0.1
Toluene	mg/kg	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	<0.3	<0.3	<0.3
BTEX Surrogate (%)	%	78	89	77

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TRH in soil with C6-C9 by P/T				
Our Reference:	UNITS	SE82595-1	SE82595-2	SE82595-4
Your Reference	-----	QC1A	QC3A	QC5A
Sample Matrix	-----	Soil	Soil	Soil
Date Sampled		18/10/2010	19/10/2010	19/10/2010
Date Extracted (TRH C6-C9 PT)		1/11/2010	1/11/2010	1/11/2010
Date Analysed (TRH C6-C9 PT)		1/11/2010	1/11/2010	1/11/2010
TRH C6 - C9 P&T	mg/kg	<20	<20	<20
Date Extracted (TRH C10-C36)		1/11/2010	1/11/2010	1/11/2010
Date Analysed (TRH C10-C36)		1/11/2010	1/11/2010	1/11/2010
TRH C10 - C14	mg/kg	<20	<20	<20
TRH C15 - C28	mg/kg	<50	<50	<50
TRH C29 - C36	mg/kg	<50	<50	<50

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OC Pesticides in Soil Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE82595-1 QC1A Soil 18/10/2010	SE82595-2 QC3A Soil 19/10/2010	SE82595-4 QC5A Soil 19/10/2010	SE82595-5 QC6A Soil 19/10/2010
Date Extracted		1/11/2010	1/11/2010	1/11/2010	1/11/2010
Date Analysed		1/11/2010	1/11/2010	1/11/2010	1/11/2010
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
o,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1
trans-Chlordane (gamma)	mg/kg	<0.1	<0.1	<0.1	<0.1
cis-Chlordane (alpha)	mg/kg	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
p,p-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
o,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
o,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-Endosulfan	mg/kg	<0.1	<0.1	<0.1	<0.1
p,p-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
p,p-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	<0.1	<0.1	<0.1	<0.1
2,4,5,6-Tetrachloro-m-xylene (Surrogate	%	110	111	111	115

OP Pesticides in Soil by GCMS					
Our Reference:	UNITS	SE82595-1	SE82595-2	SE82595-4	SE82595-5
Your Reference	-----	QC1A	QC3A	QC5A	QC6A
Sample Matrix	-----	Soil	Soil	Soil	Soil
Date Sampled		18/10/2010	19/10/2010	19/10/2010	19/10/2010
Date Extracted		1/11/2010	1/11/2010	1/11/2010	1/11/2010
Date Analysed		1/11/2010	1/11/2010	1/11/2010	1/11/2010
Dichlorvos	mg/kg	<1	<1	<1	<1
Dimethoate	mg/kg	<1	<1	<1	<1
Diazinon	mg/kg	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	<0.20	<0.20	<0.20	<0.20
Chlorpyrifos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2
Bromofos-ethyl	mg/kg	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl	mg/kg	<0.20	<0.20	<0.20	<0.20
2-fluorobiphenyl (Surr)	%	96	92	88	92
d14-p-Terphenyl (Surr)	%	90	84	80	82

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Metals in Soil by ICP-OES Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE82595-1 QC1A Soil 18/10/2010	SE82595-2 QC3A Soil 19/10/2010	SE82595-3 QC4A Soil 19/10/2010	SE82595-4 QC5A Soil 19/10/2010	SE82595-5 QC6A Soil 19/10/2010
Date Extracted (Metals)		2/11/2010	2/11/2010	2/11/2010	2/11/2010	2/11/2010
Date Analysed (Metals)		2/11/2010	2/11/2010	2/11/2010	2/11/2010	2/11/2010
Arsenic	mg/kg	<3	6	5	6	9
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	7.0	3.5	3.4	3.2	8.9
Copper	mg/kg	3.6	1.4	1.9	1.2	3.7
Lead	mg/kg	5	6	3	3	5
Nickel	mg/kg	1.3	1.7	1.3	1.4	1.8
Zinc	mg/kg	23	140	14	30	11

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Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE82595-1	SE82595-2	SE82595-3	SE82595-4	SE82595-5
Your Reference:	-----	QC1A	QC3A	QC4A	QC5A	QC6A
Sample Matrix:	-----	Soil	Soil	Soil	Soil	Soil
Date Sampled		18/10/2010	19/10/2010	19/10/2010	19/10/2010	19/10/2010
Date Extracted (Mercury)		2/11/2010	2/11/2010	2/11/2010	2/11/2010	2/11/2010
Date Analysed (Mercury)		2/11/2010	2/11/2010	2/11/2010	2/11/2010	2/11/2010
Mercury	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

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Moisture						
Our Reference:	UNITS	SE82595-1	SE82595-2	SE82595-3	SE82595-4	SE82595-5
Your Reference	-----	QC1A	QC3A	QC4A	QC5A	QC6A
Sample Matrix	-----	Soil	Soil	Soil	Soil	Soil
Date Sampled		18/10/2010	19/10/2010	19/10/2010	19/10/2010	19/10/2010
Date Analysed (moisture)		1/11/2010	1/11/2010	1/11/2010	1/11/2010	1/11/2010
Moisture	%	7	7	22	10	16

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Method ID	Methodology Summary
SEO-018	BTEX / C6-C9 Hydrocarbons - Soil samples are extracted with methanol, purged and concentrated by a purge and trap apparatus, and then analysed using GC/MS technique. Water samples undergo the same analysis without the extraction step. Based on USEPA 5030B and 8260B.
SEO-020	Total Recoverable Hydrocarbons - determined by solvent extraction with dichloromethane / acetone for soils and dichloromethane for waters, followed by instrumentation analysis using GC/FID. Where applicable Solid Phase Extraction Manifold technique is used for aliphatic / aromatic fractionation.
SEO-005	OC/OP/PCB - Determination of a suite of Organochlorine Pesticides, Chlorinated Organo-phosphorus Pesticides and Polychlorinated Biphenyls (PCB's) by liquid-liquid extraction using dichloromethane for waters, or mechanical extraction using acetone / hexane for soils, followed by instrumentation analysis using GC/ECD. Based on USEPA 8081/8082.
AN420	Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates, and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD/FID technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
SEM-010	Determination of elements by ICP-OES following appropriate sample preparation / digestion process. Based on USEPA 6010C / APHA 21st Edition, 3120B.
SEM-005	Mercury - determined by Cold-Vapour AAS following appropriate sample preparation or digestion process. Based on APHA 21st Edition, 3112B.
AN002	Preparation of soils, sediments and sludges undergo analysis by either air drying, compositing, subsampling and 1:5 soil water extraction where required. Moisture content is determined by drying the sample at 105 ± 5°C.

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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
MBTEX in Soil								
Date Extracted (MBTEX)				01/11/10	[NT]	[NT]	LCS	01/11/10
Date Analysed (MBTEX)				01/11/10	[NT]	[NT]	LCS	01/11/10
Methyl-tert-butyl ether (MTBE)	mg/kg	0.1	SEO-018	<0.1	[NT]	[NT]	LCS	84%
Benzene	mg/kg	0.1	SEO-018	<0.1	[NT]	[NT]	LCS	79%
Toluene	mg/kg	0.1	SEO-018	<0.1	[NT]	[NT]	LCS	77%
Ethylbenzene	mg/kg	0.1	SEO-018	<0.1	[NT]	[NT]	LCS	73%
Total Xylenes	mg/kg	0.3	SEO-018	<0.3	[NT]	[NT]	LCS	78%
BTEX Surrogate (%)	%	0	SEO-018	84	[NT]	[NT]	LCS	87%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
TRH in soil with C6-C9 by P/T								
Date Extracted (TRH C6-C9 PT)				01/11/10	[NT]	[NT]	LCS	01/11/10
Date Analysed (TRH C6-C9 PT)				01/11/10	[NT]	[NT]	LCS	01/11/10
TRH C6 - C9 P&T	mg/kg	20	SEO-018	<20	[NT]	[NT]	LCS	89%
Date Extracted (TRH C10-C36)				1/11/10	[NT]	[NT]	LCS	1/11/10
Date Analysed (TRH C10-C36)				1/11/10	[NT]	[NT]	LCS	1/11/10
TRH C10 - C14	mg/kg	20	SEO-020	<20	[NT]	[NT]	LCS	126%
TRH C15 - C28	mg/kg	50	SEO-020	<50	[NT]	[NT]	LCS	125%
TRH C29 - C36	mg/kg	50	SEO-020	<50	[NT]	[NT]	LCS	122%



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
OC Pesticides in Soil								
Date Extracted				1/11/2010	SE82595-1	1/11/2010 1/11/2010	SE82595-2	1/11/2010
Date Analysed				1/11/2010	SE82595-1	1/11/2010 1/11/2010	SE82595-2	1/11/2010
HCb	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
gamma-BHC (Lindane)	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
Heptachlor	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	109%
Aldrin	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	98%
beta-BHC	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
delta-BHC	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	92%
Heptachlor Epoxide	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
o,p-DDE	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
alpha-Endosulfan	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
trans-Chlordane (gamma)	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
cis-Chlordane (alpha)	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
trans-Nonachlor	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
p,p-DDE	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
Dieldrin	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	100%
Endrin	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	111%
o,p-DDD	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
o,p-DDT	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
beta-Endosulfan	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
p,p-DDD	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
p,p-DDT	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	SE82595-2	97%
Endosulfan Sulphate	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
Methoxychlor	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
Endrin Ketone	mg/kg	0.1	SEO-005	<0.1	SE82595-1	<0.1 <0.1	[NR]	[NR]
2,4,5,6-Tetrachloro-m-xy lene (Surrogate	%	0	SEO-005	108	SE82595-1	110 111 RPD: 1	SE82595-2	103%



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
OP Pesticides in Soil by GCMS								
Date Extracted				01/11/10	SE82595-1	1/11/2010 1/11/2010	SE82595-4	01/11/10
Date Analysed				01/11/10	SE82595-1	1/11/2010 1/11/2010	SE82595-4	01/11/10
Dichlorvos	mg/kg	1	AN420	<1	SE82595-1	<1 <1	SE82595-4	106%
Dimethoate	mg/kg	1	AN420	<1	SE82595-1	<1 <1	[NR]	[NR]
Diazinon	mg/kg	0.5	AN420	<0.5	SE82595-1	<0.5 <0.5	SE82595-4	78%
Fenitrothion	mg/kg	0.2	AN420	<0.2	SE82595-1	<0.2 <0.2	[NR]	[NR]
Malathion	mg/kg	0.2	AN420	<0.20	SE82595-1	<0.20 <0.20	[NR]	[NR]
Chlorpyrifos-ethyl	mg/kg	0.2	AN420	<0.2	SE82595-1	<0.2 <0.2	SE82595-4	108%
Parathion-ethyl	mg/kg	0.2	AN420	<0.2	SE82595-1	<0.2 <0.2	[NR]	[NR]
Bromofos-ethyl	mg/kg	0.2	AN420	<0.2	SE82595-1	<0.2 <0.2	[NR]	[NR]
Methidathion	mg/kg	0.5	AN420	<0.5	SE82595-1	<0.5 <0.5	[NR]	[NR]
Ethion	mg/kg	0.2	AN420	<0.2	SE82595-1	<0.2 <0.2	SE82595-4	99%
Azinphos-methyl	mg/kg	0.2	AN420	<0.20	SE82595-1	<0.20 <0.20	[NR]	[NR]
2-fluorobiphenyl (Surr)	%	0	AN420	94	SE82595-1	96 86 RPD: 11	SE82595-4	86%
d14-p-Terphenyl (Surr)	%	0	AN420	88	SE82595-1	90 80 RPD: 12	SE82595-4	76%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Metals in Soil by ICP-OES								
Date Extracted (Metals)				2/11/2010	[NT]	[NT]	LCS	2/11/2010
Date Analysed (Metals)				2/11/2010	[NT]	[NT]	LCS	2/11/2010
Arsenic	mg/kg	3	SEM-010	<3	[NT]	[NT]	LCS	103%
Cadmium	mg/kg	0.3	SEM-010	<0.3	[NT]	[NT]	LCS	102%
Chromium	mg/kg	0.3	SEM-010	<0.3	[NT]	[NT]	LCS	102%
Copper	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	LCS	101%
Lead	mg/kg	1	SEM-010	<1	[NT]	[NT]	LCS	102%
Nickel	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	LCS	102%
Zinc	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	LCS	101%



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Mercury Cold Vapor/Hg Analyser								
Date Extracted (Mercury)				2/11/2010	[NT]	[NT]	LCS	2/11/2010
Date Analysed (Mercury)				2/11/2010	[NT]	[NT]	LCS	2/11/2010
Mercury	mg/kg	0.05	SEM-005	<0.05	[NT]	[NT]	LCS	109%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank
Moisture				
Date Analysed (moisture)				[NT]
Moisture	%	1	AN002	<1

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RTI Act 2009



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Result Codes			
[INS]	:	Insufficient Sample for this test	[RPD] : Relative Percentage Difference
[NR]	:	Not Requested	* : Not part of NATA Accreditation
[NT]	:	Not tested	[N/A] : Not Applicable
[LOR]	:	Limit of reporting	
Report Comments			

Samples analysed as received. Solid samples expressed on a dry weight basis.
Date Organics extraction commenced:
NATA Corporate Accreditation No. 2562, Site No 4354
Note: Test results are not corrected for recovery (excluding Air-toxics and Dioxins/Furans*)
This document is issued by the Company subject to its General Conditions of Service
(www.sgs.com/terms_and_conditions.htm). Attention is drawn to the limitations of liability, indemnification and jurisdictional issues established therein.

This document is to be treated as an original within the meaning of UCP 600. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Quality Control Protocol
Method Blank: An analyte free matrix to which all reagents are added in the same volume or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. A method blank is prepared every 20 samples.
Duplicate: A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is processed at least every 10 samples.
Surrogate Spike: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are added to samples before extraction to monitor extraction efficiency and percent recovery in each sample.
Internal Standard: Added to all samples requiring analysis for organics (where relevant) or metals by ICP after the extraction/digestion process; the compounds/elements serve to give a standard of retention time and/or response, which is invariant from run-to-run with the instruments.
Laboratory Control Sample: A known matrix spiked with compound(s) representative of the target analytes. It is used to document laboratory performance. When the results of the matrix spike analysis indicates a potential problem due to the sample matrix itself, the LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.
Matrix Spike: An aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Quality Acceptance Criteria
The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: <http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

<div style="text-align: center;">CHAIN OF CUSTODY DOCUMENTATION</div>																				
Client:	Gilbert and Sutherland	For:	SGS Environmental																	
Postal Address:	PO Box 4115, Robina QLD 4230	Address:	Unit 16, 33 Maddox St, Alexandria, NSW, 2015																	
Send Report to:	(sch4p4) (6) Personal information	Send Invoice to:	(sch4p4) (6) Personal info (Robina)																	
Data Needed By:	COB 16/11/10	Report Needed By:	COB 16/11/10																	
G&S Project ID:	10527	Quote Number:																		
Comments:	Please include our Project ID in the subject line of all correspondence.																			
* NEPM 8 metals- As, Cd, Cr, Cu, Ni, Pb, Zn * Results due COB 16/11/10 as per conversation with (sch4p4) (6) Personal information																				
Sample ID	Matrix	Date	Time	Type and Pres	NEPM 8 metals (ICP/MS)*															Notes:
1 GW2	Water	13.11.10	1:00	Metals	X															
2 GW3	Water	13.11.10	1:00	Metals	X															
3 GW4	Water	13.11.10	1:00	Metals	X															
4 GW5	Water	13.11.10	1:00	Metals	X															
5 GW6	Water	13.11.10	1:00	Metals	X															
6 GW7	Water	13.11.10	1:00	Metals	X															
7 GW8	Water	13.11.10	1:00	Metals	X															
8 GW9	Water	13.11.10	1:00	Metals	X															
9 GW10	Water	13.11.10	1:00	Metals	X															
10 QC9	Water	13.11.10	1:00	Metals	X															
• 11 QC9A																				
Relinquished by: Name: (sch4p4) (6) Personal information G&S Date: 15.11.10																				
Received by: Name: (sch4p4) (6) Personal information SCJ Date: 16/11/10 gcm																				



ANALYTICAL REPORT

17 November 2010

Gilbert & Sutherland Pty Ltd
P O Box 4115
Robina
QLD 4230

Attention: sch4p4(6) Personal information

Your Reference: 10527

Our Reference: SE83183-R

Samples: 11 Waters
Received: 16/11/2010

Preliminary Report Sent: Not Issued

These samples were analysed in accordance with your written instructions.

This report cancels and supersedes report No. SE83183 issued on 16/11/10 by SGS Environmental Services due to amendment of extracted and analysed dates.

For and on Behalf of:
SGS ENVIRONMENTAL SERVICES

Sample Receipt: sch4p4(6) Personal information AU.SampleReceipt.Sydney@sgs.com
Production Manager: sch4p4(6) Personal information@sgs.com

Results Approved and/or Authorised by:

sch4p4(6) Personal information

Metals Signatory



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Page 1 of 6

SGS Australia Pty Ltd
ABN 44 000 964 278

Environmental Services Unit 16/33 Maddox Street Alexandria NSW 2015 Australia
t +61 (0)2 8594 0400 f + 61 (0)2 8594 0499 www.au.sgs.com

Trace HM (ICP-MS)-Dissolved		SE83183-R	SE83183-R	SE83183-R	SE83183-R	SE83183-R
Our Reference:	UNITS	-1	-2	-3	-4	-5
Your Reference	-----	GW2	GW3	GW4	GW5	GW6
Sample Matrix	-----	Water	Water	Water	Water	Water
Date Sampled		13/11/2010	13/11/2010	13/11/2010	13/11/2010	13/11/2010
Time Sample Taken		1:00	1:00	1:00	1:00	1:00
Date Extracted (Metals-ICPMS)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Date Analysed (Metals-ICPMS)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Arsenic	µg/L	15	78	330	18	19
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	<1	2	2	1	5
Copper	µg/L	2	<1	<1	<1	1
Lead	µg/L	<1	<1	<1	<1	2
Nickel	µg/L	2	2	1	3	3
Zinc	µg/L	4	2	6	3	14

Trace HM (ICP-MS)-Dissolved		SE83183-R	SE83183-R	SE83183-R	SE83183-R	SE83183-R
Our Reference:	UNITS	-6	-7	-8	-9	-10
Your Reference	-----	GW7	GW8	GW9	GW10	QC9
Sample Matrix	-----	Water	Water	Water	Water	Water
Date Sampled		13/11/2010	13/11/2010	13/11/2010	13/11/2010	13/11/2010
Time Sample Taken		1:00	1:00	1:00	1:00	1:00
Date Extracted (Metals-ICPMS)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Date Analysed (Metals-ICPMS)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Arsenic	µg/L	21	24	11	1	16
Cadmium	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	<1	2	1	<1	1
Copper	µg/L	<1	2	4	2	2
Lead	µg/L	<1	<1	<1	<1	<1
Nickel	µg/L	2	2	4	6	2
Zinc	µg/L	3	3	22	43	4



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Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE83183-R	SE83183-R	SE83183-R	SE83183-R	SE83183-R
		-1	-2	-3	-4	-5
Your Reference	-----	GW2	GW3	GW4	GW5	GW6
Sample Matrix	-----	Water	Water	Water	Water	Water
Date Sampled		13/11/2010	13/11/2010	13/11/2010	13/11/2010	13/11/2010
Time Sample Taken		1:00	1:00	1:00	1:00	1:00
Date Extracted (Mercury)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Date Analysed (Mercury)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Mercury (Dissolved)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Mercury Cold Vapor/Hg Analyser						
Our Reference:	UNITS	SE83183-R	SE83183-R	SE83183-R	SE83183-R	SE83183-R
		-6	-7	-8	-9	-10
Your Reference	-----	GW7	GW8	GW9	GW10	QC9
Sample Matrix	-----	Water	Water	Water	Water	Water
Date Sampled		13/11/2010	13/11/2010	13/11/2010	13/11/2010	13/11/2010
Time Sample Taken		1:00	1:00	1:00	1:00	1:00
Date Extracted (Mercury)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Date Analysed (Mercury)		16/11/2010	16/11/2010	16/11/2010	16/11/2010	16/11/2010
Mercury (Dissolved)	mg/L	<0.0001	0.0001	<0.0001	<0.0001	<0.0001

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Method ID	Methodology Summary
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
SEM-005	Mercury - determined by Cold-Vapour AAS following appropriate sample preparation or digestion process. Based on APHA 21st Edition, 3112B.

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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
Trace HM (ICP-MS)-Dissolved						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (Metals-ICPMS)				16/11/2010	SE83183-1	16/11/2010 16/11/2010	LCS	16/11/2010
Date Analysed (Metals-ICPMS)				16/11/2010	SE83183-1	16/11/2010 16/11/2010	LCS	16/11/2010
Arsenic	µg/L	1	AN318	<1	SE83183-1	15 15 RPD: 0	LCS	97%
Cadmium	µg/L	0.1	AN318	<0.1	SE83183-1	<0.1 <0.1	LCS	97%
Chromium	µg/L	1	AN318	<1	SE83183-1	<1 <1	LCS	100%
Copper	µg/L	1	AN318	<1	SE83183-1	2 3 RPD: 40	LCS	104%
Lead	µg/L	1	AN318	<1	SE83183-1	<1 <1	LCS	98%
Nickel	µg/L	1	AN318	<1	SE83183-1	2 2 RPD: 0	LCS	104%
Zinc	µg/L	1	AN318	<1	SE83183-1	4 5 RPD: 22	LCS	102%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate	Spike Sm#	Matrix Spike % Recovery
Mercury Cold Vapor/Hg Analyser						Base + Duplicate + %RPD		Duplicate + %RPD
Date Extracted (Mercury)				16/11/2010	SE83183-1	16/11/2010 16/11/2010	SE83183-2	16/11/2010
Date Analysed (Mercury)				16/11/2010	SE83183-1	16/11/2010 16/11/2010	SE83183-2	16/11/2010
Mercury (Dissolved)	mg/L	0.0001	SEM-005	<0.0001	SE83183-1	<0.0001 <0.0001	SE83183-2	99%



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Result Codes

[INS] : Insufficient Sample for this test [RPD] : Relative Percentage Difference
[NR] : Not Requested * : Not part of NATA Accreditation
[NT] : Not tested [N/A] : Not Applicable
[LOR] : Limit of reporting

Report Comments

Samples analysed as received. Solid samples expressed on a dry weight basis.
Date Organics extraction commenced:
NATA Corporate Accreditation No. 2562, Site No 4354
Note: Test results are not corrected for recovery (excluding Air-toxics and Dioxins/Furans*)
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its intervention only and within the limits of client's instructions, if any. The Company's sole
responsibility is to its Client and this document does not exonerate parties to a transaction from
exercising all their rights and obligations under the transaction documents. Any unauthorized
alteration, forgery or falsification of the content or appearance of this document is unlawful and
offenders may be prosecuted to the fullest extent of the law.

Quality Control Protocol

Method Blank: An analyte free matrix to which all reagents are added in the same volume or proportions as used in sample processing.
The method blank should be carried through the complete sample preparation and analytical procedure. A method blank is prepared every
20 samples.
Duplicate: A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is
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process, but which is not normally found in environmental samples. Surrogates are added to samples before extraction to monitor extraction
efficiency and percent recovery in each sample.
Internal Standard: Added to all samples requiring analysis for organics (where relevant) or metals by ICP after the extraction/digestion
process; the compounds/elements serve to give a standard of retention time and/or response, which is invariant from run-to-run with
the instruments.
Laboratory Control Sample: A known matrix spiked with compound(s) representative of the target analytes. It is used to document
laboratory performance. When the results of the matrix spike analysis indicates a potential problem due to the sample matrix itself, the LCS
results are used to verify that the laboratory can perform the analysis in a clean matrix.
Matrix Spike: An aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation
and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Quality Acceptance Criteria

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found
here: <http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>



SAMPLE RECEIPT ADVICE (SRA)

16 November 2010

Client Details

Requested By : sch4p4(6) Personal information
Client : Gilbert & Sutherland Pty Ltd
Contact : sch4p4(6) Personal information
Address : P O Box 4115
Robina QLD 4230

Email : sch4p4(6) Personal information@groups.com
Telephone : sch4p4(6) Personal information
Facsimile : 07 3264 1333

Project : 10527
Order Number :
Samples : 11 Waters

Laboratory Details

Laboratory : SGS Environmental Services
Manager : sch4p4(6) Personal information
Address : Unit 16, 33 Maddox Street
Alexandria NSW 2015

Email : au.samplerreceipt.sydney@sgs.com
Telephone : 61 2 8594 0400
Facsimile : 61 2 8594 0499

Report No : SE83183
No. of Samples : 11
Due Date : 16/11/2010

Date Instructions Received : 16/11/2010
Sample Receipt Date : 16/11/2010

Samples received in good order	: YES	Samples received in correct container:	: YES
Samples received without headspace	: NO	Sufficient quantity supplied	: YES
Upon receipt sample temperature	: Cool	Cooling Method	: Ice Pack
Sample containers provided by	: Other Lab	Samples clearly Labelled	: YES
Turnaround time requested	: Same day	Completed documentation received	: YES

Samples will be held for 1 month for water samples and 3 months for soil samples from date of receipt of samples, unless otherwise instructed.

Comments

Sample "QC9A" was not listed on the COC.
Client requested this sample not to be analysed.

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS, all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm as at the date of this document. Attention is drawn to the limitations of liability and to the clauses of indemnification.

The signed chain of custody will be returned to you with the original report.



SAMPLE RECEIPT ADVICE (SRA) - continued

Client : Gilbert & Sutherland Pty Ltd
Project : 10527

Report No : SE83183

Summary of Samples and Requested Analysis

The table below represents SGS Environmental Service's understanding and interpretation of the customer supplied sample request.

Please indicate ASAP if your request differs from these details.

Testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

Note that a small X in the table below indicates some testing has not been requested in the package.

Sample No.	Description	Metals Prep & Inorganics - All	Trace HM (ICP-MS)-Dissolved	Mercury Cold Vapor/Hg Analyser
1	GW2	X	X	X
2	GW3	X	X	X
3	GW4	X	X	X
4	GW5	X	X	X
5	GW6	X	X	X
6	GW7	X	X	X
7	GW8	X	X	X
8	GW9	X	X	X
9	GW10	X	X	X
10	QC9	X	X	X

Sample No.	Description
1	GW2
2	GW3
3	GW4



SAMPLE RECEIPT ADVICE (SRA) - continued

Client : Gilbert & Sutherland Pty Ltd
Project : 10527

Report No : SE83183

Sample No.	Description
4	GW5
5	GW6
6	GW7
7	GW8
8	GW9
9	GW10
10	QC9

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10. Appendix 2 - Current, historical titles and registered plans

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RTI Act 2009



Previous Title
CT N575 - 56 Lot 4 RP716880

Dated this 19 day of May 1991
Mayor or
Chairman
Town or
Shire Clerk

ARABESQUE PTY LTD ✓
(Names in full)

- agree to this plan and dedicate the new road as shown hereon to public use.

road as **ANDRES BONA** to public use.
 on **OF** **DIRECT** ✓

- Rule out which is inapplicable.

sch4p4(6) Personal informati

sch4p4(6) Personal information

Surveyor General

Date _____

Lot	Vol.	Fol.	Lot	Vol.	Fol.	Lot	Vol.	Fol.
4	50044594							

Received
Registrar of Titles

Postal fee and postage

Logt. Exam. & Ass.

New Title

Entd. on Deeds

Photo Fee

Total

Short Fees Paid

Particulars entered in Register Book

Vol. _____ Folio _____

2057505

REGISTERED JAN 1995

12 JAN

sch4p4(6) Pers

EXAM. 1

REGISTRAR OF TITLES

REC. No. 2318 ³⁰~~25~~.....

RECEIVED \$136.00

DATE 23/12/93

700399674 \$141.00

14/12/1994
11:18

GC 400 NT PLAN OF SUPPL

REGISTERED PLAN 817122 Page 219 of 335

HISTORICAL TITLE SEARCH

ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 10246183

Search Date: 14/10/2010 11:04

Title Reference: 50044594

Date Created: 12/01/1995

Previous Title: 20575056

REGISTERED OWNER

Interest

Dealing No: 709856234 16/08/2006

ARABESQUE PTY LTD A.C.N. 010 335 305

TENANT IN COMMON

49/100

JAMIE PICKERING PTY LTD A.C.N. 095 651 317

TRUSTEE

51/100

UNDER INSTRUMENT 709856234

AS TENANTS IN COMMON

TRANSFER TO TRUSTEE No 709856234

ARABESQUE PTY LTD A.C.N. 010 335 305 TENANT IN COMMON 49/100

JAMIE PICKERING PTY LTD A.C.N. 095 651 317 TRUSTEE 51/100

UNDER INSTRUMENT 709856234

Lodged at 09:11 on 16/08/2006

ESTATE AND LAND

Estate in Fee Simple

LOT 4 REGISTERED PLAN 817122

County of CARLISLE

Parish of BASSETT

Local Government: MACKAY

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. MORTGAGE No 711703721
COMMONWEALTH BANK OF AUSTRALIA A.B.N. 48 123 123 124
Lodged at 16:18 on 05/06/2008
2. DEPOSIT OF CT No 711700512
the deposited certificate of title has been cancelled
Lodged at 09:18 on 05/06/2008
3. APPLICATION FOR TITLE No 709857469
A Certificate of Title has been issued
Lodged at 08:52 on 17/08/2006
4. RELEASE No 709856232
MORTGAGE: 700347449
Lodged at 09:08 on 16/08/2006
5. WITHDRAWAL No 709743623
CAVEAT: 709557504
Lodged at 13:54 on 04/07/2006
6. WITHDRAWAL No 709606194
CAVEAT: 707877592
Lodged at 14:56 on 18/05/2006

HISTORICAL TITLE SEARCH

ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 10246183

Search Date: 14/10/2010 11:04

Title Reference: 50044594

Date Created: 12/01/1995

EASEMENTS, ENCUMBRANCES AND INTERESTS

7. CAVEAT No 709557504 CANCELLED BY 709743623
GIRROMA PTY LTD A.C.N. 103 698 460
Lodged at 16:18 on 02/05/2006
8. REMOVAL No 707924878
CAVEAT: 707781428
Lodged at 11:59 on 27/07/2004
9. REMOVAL OF ADMINISTRATIVE ADVICE No 707860820
removing
601011515
Lodged at 12:19 on 02/07/2004
10. CAVEAT No 707877592 CANCELLED BY 709606194
GIRROMA PTY LTD A.C.N. 103 698 460
Lodged at 16:46 on 08/07/2004
11. CAVEAT No 707781428 CANCELLED BY 707924878
sch4p4(6) Personal information
Lodged at 16:23 on 04/06/2004
12. RELEASE No 707573825
MORTGAGE: 700307778
Lodged at 09:10 on 19/03/2004
13. WITHDRAWAL No 707573823
CAVEAT: 707458994
Lodged at 09:10 on 19/03/2004
14. CAVEAT No 707458994 CANCELLED BY 707573823
ARABESQUE PTY LTD A.C.N. 010 335 305
Lodged at 16:50 on 09/02/2004
15. MORTGAGE No 700347449 CANCELLED BY 709856232
to
WESTPAC BANKING CORPORATION
Lodged at 08:42 on 17/11/1994
16. MORTGAGE No 700307778 CANCELLED BY 707573825
to
sch4p4(6) Personal information
Lodged at 15:14 on 26/10/1994
17. EASEMENT IN GROSS No 601575450 (T574340W)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT A ON RP746930
Lodged at 00:00 on 19/12/1991

HISTORICAL TITLE SEARCH

ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 10246183

Search Date: 14/10/2010 11:04

Title Reference: 50044594

Date Created: 12/01/1995

EASEMENTS, ENCUMBRANCES AND INTERESTS

18. EASEMENT IN GROSS No 601575449 (T574339M)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT B ON RP746930
Lodged at 00:00 on 19/12/1991
19. EASEMENT IN GROSS No 601575448 (T574338J)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT C ON RP835224
Lodged at 00:00 on 19/12/1991
20. MORTGAGE No 709701765 FULLY WITHDRAWN ON 17/08/2006
Lodged at 08:40 on 22/06/2006
21. CAVEAT No 709694689 FULLY WITHDRAWN ON 23/08/2006
Lodged at 11:03 on 20/06/2006
22. Rights and interests reserved to the Crown by
Deed of Grant No. 10689035 (POR 448)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
AN611H	NOTC INT RES	08/05/1989 00:00	NOT CURRENT
707800726	ACQUISITION OF LAND ACT 1967	11/06/2004 13:21	NOT CURRENT
707834189	NOTICE	24/06/2004 14:09	NOT CURRENT
709675421	LAND TITLE ACT 1994	14/06/2006 08:39	NOT CURRENT
709743632	NTCE OF ACTN	04/07/2006 13:56	FULLY WITHDRAWN
709777815	LAND TITLE ACT 1994	17/07/2006 16:23	FULLY WITHDRAWN
711560721	NTCE OF ACTN	08/04/2008 12:34	CURRENT
	LAND TITLE ACT 1994		
	VEG NOTICE		
	VEGETATION MANAGEMENT ACT 1999		

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

HISTORICAL TITLE SEARCH

ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 10246301

Search Date: 14/10/2010 11:09

Title Reference: 20575056

Date Created: 11/05/1959

Previous Title: 20356005
20356006

This Title Has Been Fully Cancelled.

REGISTERED OWNER

Dealing No: 700307771 26/10/1994

TRANSFER No 700307771
to
ARABESQUE PTY LTD
Lodged at 15:13 on 26/10/1994

ESTATE AND LAND

Estate in Fee Simple

LOT 4 REGISTERED PLAN 716888
County of CARLISLE Parish of BASSETT

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. SURVEY PLAN No 700399674
subdivides the land into
LOT 4 ON RP 817122
Lodged at 11:18 on 14/12/1994
2. MORTGAGE No 700347449
to
WESTPAC BANKING CORPORATION
Lodged at 08:42 on 17/11/1994
3. MORTGAGE No 700307778
to
sch4p4(6) Personal information
Lodged at 15:14 on 26/10/1994
4. EASEMENT IN GROSS No 601575450 (T574340W)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT A ON RP746930
Lodged at 00:00 on 19/12/1991
5. EASEMENT IN GROSS No 601575449 (T574339M)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT B ON RP746930
Lodged at 00:00 on 19/12/1991

HISTORICAL TITLE SEARCH

ENVIRONMENT AND RESOURCE MANAGEMENT, QUEENSLAND

Request No: 10246301

Search Date: 14/10/2010 11:09

Title Reference: 20575056

Date Created: 11/05/1959

EASEMENTS, ENCUMBRANCES AND INTERESTS

6. EASEMENT IN GROSS No 601575448 (T574338J)
BURDENING THE LAND
TO COUNCIL OF THE SHIRE OF PIONEER
OVER EASEMENT C ON RP835224
Lodged at 00:00 on 19/12/1991
7. SUBSTITUTE TITLE No 601575447 (T529710C) CANCELLED BY 700307771
A SUBSTITUTE CERTIFICATE OF TITLE
WAS ISSUED ON 23 MAR 1992
Lodged at 00:00 on 08/04/1991
8. Rights and interests reserved to the Crown by
Deed of Grant No. 10689035 (POR 448)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
AN611H	NOTC INT RES	08/05/1989 00:00	NOT CURRENT

ACQUISITION OF LAND ACT 1967
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

Certificate of Title.

VOL: N 573 FOLIO: 056



No. N. 105256

(C)

Reference to Previous Volume Folio

356	5, 6
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Register Book, Vol. 575 Folio 56

sch4p4(6) Personal information

of _____ pursuant to Memorandum
of Conveyance No. N. 428298 produced the eleventh day of February 19 59,
registered the twenty ninth day of April 19 59, 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 Carlisle Parish of Bassett
containing One hundred and ninety three acres three roods
two perches

more or less, as shown on the Plan hereon, and therein edged red,
Being Subdivision 4 of Re subdivision 135 of Subdivision 2 of Portion 418

on Plan Cat. No. 16888 deposited in the Office of the Deputy Registrar of Titles, Townsville,
which said piece of Land is part of the portion marked 448 delineated in the Public Map
of the said parish deposited in the Office of the Surveyor-General, originally granted by Deed, of Grant
No. 69525

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

6 Personal information In Witness whereof, I have hereunto signed my name and affixed my seal, this eleventh day of May One thousand nine hundred and fifty nine

Signed, Sealed, and Delivered, the 11th
day of May 19 59 in presence of

sch4p4(6) Personal information

sch4p4(6) Personal information

No. N 428499 Bill of Mortgage produced 11 Feb 1967 at 8:26 AM 13 May 1967
from sch4p4 (6) Personal information
AUSTRALIA to secure the personal information

to secure the personal information of the individual.

sch464(6) Personal information

DEP. REC. STRAP. OF TITLE
(IN-17) (4 DISTRICT)

Scale, chains per inch

No. 14-920313 Bill of Materials
 G.O.C. 14-920313 Personal Information
 Produced 29 May 1964
 Registered 29 May 1964
 14-920313 (6) Personal Information
 DEPT. OF JUSTICE
 DIVISION OF INVESTIGATION

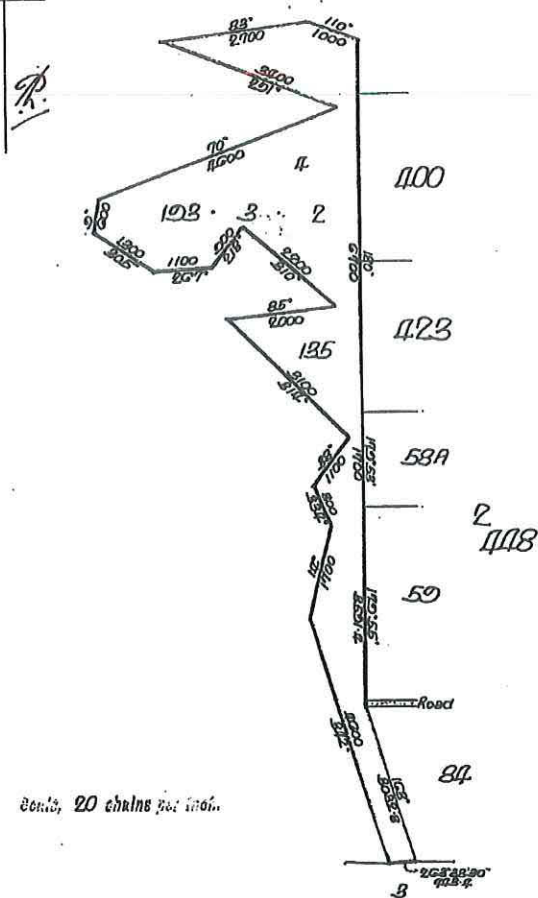
THE DESCRIPTION OF THE WITHIN LAND IS CONVERTED
TO LOT(3) 4

ON REGISTERED PLAN No. 716888

Feb 1986 Personal information

DTP. REGISTRAR OF TITLES

Papish of Bassett



Scale, 20 chains per inch.

TRANSFER to Council of the Shire of
Pioneer
Easement C on Regd. Plan 835224
No. T544387 PRODUCED 19 Dec 1991
REGD.
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

TRANSFER to Council of the Shire of
Pioneer
Easement B on Regd. Plan 746930
No. T544397 PRODUCED 19 Dec 1991
REGD.
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

TRANSFER to Council of the Shire of
Pioneer
Easement A on Regd. Plan 746930
No. T544404 PRODUCED 19 Dec 1991
REGD.
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. T5291106 PRODUCED 8 Dec 1991
A SUBSTITUTE Certificate of Title
WAS ISSUED ON
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

THE PRODUCTION OF Duplicate Bill of Mortgage
No. N49323 has been
dispensed with for the purpose of registering Release of
Mortgage No. T5291106 pursuant to request
No. T5291129 PRODUCED 8 Dec 1991
ENTERED
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

BY PLAN CAT. No. 746930 Part of
the within land is surveyed
into Proposed Easements A and B
No. T5334051 PRODUCED 1 May 1991
REGD.
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

BY PLAN CAT. No. 835224 Part of
the within land is surveyed
into Proposed Easement C
No. T544387 PRODUCED 19 Dec 1991
REGD.
23 MAR 1992 Personal information
DEPUTY REGISTRAR OF TITLES
(NORTHERN DISTRICT)

Certificate of Title.

(C) UNDIVIDED MOIETY

QUEENSLAND.

No. N.53955

REFERENCE TO PREVIOUS

VOL. 209 FOLIO 130
226 64, 65

REGISTER BOOK, VOL. 356 FOLIO 5

VOL: N 336 FOLIO: 005

sch4p4(6) Personal information

20356003

of Maokay, Carpenter _____ Transmission
by Death _____ pursuant to Memorandum
es-Conservancy No. N. 220827 _____ produced the twentyfifth _____ day of November _____ 19 40;
registered the nineteenth _____ day of March _____ 19 41; is now seized of an Estate in Fee-simple, as tenant
in common with another _____ in one _____ undivided half _____ part or
share _____, 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 Carlisle _____ Parish of Bassett _____

Containing seven hundred and eighty seven acres three roods twentyfive perches

more or less, as shown on the Plan hereon, and therein edged red, Being Subdivision 135 of Portion 1 and of
Subdivision 2 and of Resubdivision A of Subdivision 2 of Portion 448 on Plan Cat. No. 10599
deposited in the office of the Deputy Registrar of Titles, Townsville

which said piece of Land is part of the portions marked 1 and 448 delineated in the Public Map of the said Parish deposited in the Office of the Surveyor-General, originally granted by Deed s of Grant No.s. N10959 (Portion 1) — and — N10960 (Resub. A of Sub. 2 of Portion 448) to sch4p4(6) Personal information and — 69525 — (Portion 448) to sch4p4(6) Personal information

Saving Always to the Crown all the rights and interests reserved to it by the said Deeds of Grant.

sch4p43(6) Personal Information In Witness whereof, I have hereunto signed my name and affixed my seal, this twentysix day of March 2019. One thousand nine hundred and fortynine

Signed, Sealed, and Delivered, the twentyfirst
day of March 1941, in presence of
[redacted] Personal information

sch4p4(6) Personal information
DEPUTY REGISTRAR OF TITLES, **N**
NORTHERN DISTRICT REGISTRY.

No. N32918 TRANSFER of 47 acres 3 rods 27 poles
to Sub 1 to sch4p4(6) Personal information

11 June 1932 at 2:05 p.m., registered 17 June 1932 Produced
Cancelled as above vide Vol. 332 Fol. 236

sch4p4(6) Personal information

DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT.)

No. N32909 TRANSFER of 47 acres 3 rods 27 poles Sub
to sch4p4(6) Personal information

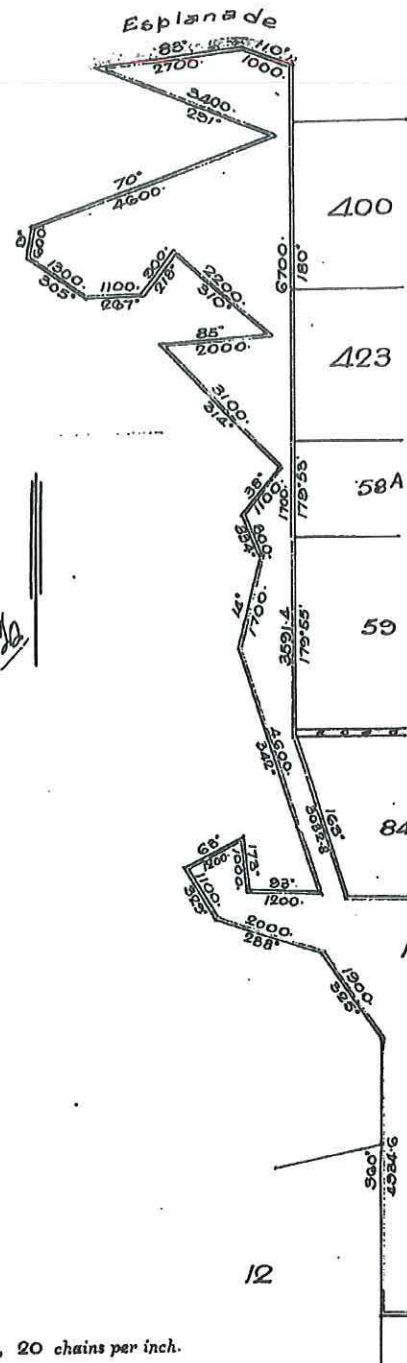
7 Mar 1952 at 10:10 a.m., registered 17 Mar 1952 Produced
Cancelled as above vide Vol. 471 Fol. 153

sch4p4(6) Personal information

DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT.)

[illegible]

Parish of Bassett.



No. 355744 TRANSFER of 501 acs 37 bcho Result
to sch4p4(6) Personal information
Produced 18 Nov 1953 at 2.20 p.m. registered 30 Jul 1954
Cancelled as above vide Vol. 198 Fol. 192
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N 422270 By Plan Cat. No. 16888
part of the within land
is subdivided into sub 4
Produced 15 Sep 1958 at 5.30 p.m.
Registered 26 Sep 1958
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N 422270 TRANSFER of 192 acs and a parcel
to sch4p4(6) Personal information
Produced 28 Apr 1952
Cancelled as above vide Vol. 175 Fol. 56
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N 355743 By Plan Cat. No. 14665
part of the within land
is subdivided into Result 3
Produced 18 Nov 1953 at 2.20 p.m.
Registered 30 Jul 1954
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

Certificate of Title.

 VOL. N 356 FOLIO 608
 20356006

(C) UNDIVIDED MOEITY

QUEENSLAND

No. N. 53956

REFERENCE TO PREVIOUS

 Vols. 209 Folios 130
 226 64, 65

REGISTER BOOK, VOL. 356 FOLIO 6

sch4p4(6) Personal information

of Bucasia near Mackay, Labourer Transmission
 by Death pursuant to Memorandum
 of Conveyance No. N. 220827 produced the twentyfifth day of November 19 40,
 registered the nineteenth day of March 19 41, is now seized of an Estate in Fee-simple, as tenant
 in common with another in one undivided half part or
 share, 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 Carlsile Parish of Bassett

 containing seven hundred and eightyseven acres three roods twentyfive perches

more or less, as shown on the Plan hereon, and therein edged red, Being Subdivision 135 of Portion 1 and of
Subdivision 2 and of Resubdivision A of Subdivision 2 of Portion 448 on Plan Cat No. 40599
deposited in the office of the Deputy Registrar of Titles, Townsville

which said piece of Land is part of the portions marked 1 and 448 delineated in the Public Map
 of the said Parish deposited in the Office of the Surveyor-General, originally granted by Deeds of Grant
 Nos. N10959 (Portion 1) and N10960 (Resub. A of Sub. 2 of Portion 448) to
 sch4p4(6) Personal information and 69525 (Portion 448) to

sch4p4(6) Personal information

Saving Always to the Crown all the rights and interests reserved to it by the said Deeds of Grant.

sch4p4(6) Personal information In Witness whereof, I have hereunto signed my name and affixed my seal, this twentyfirst
 day of March One thousand nine hundred and fortyone

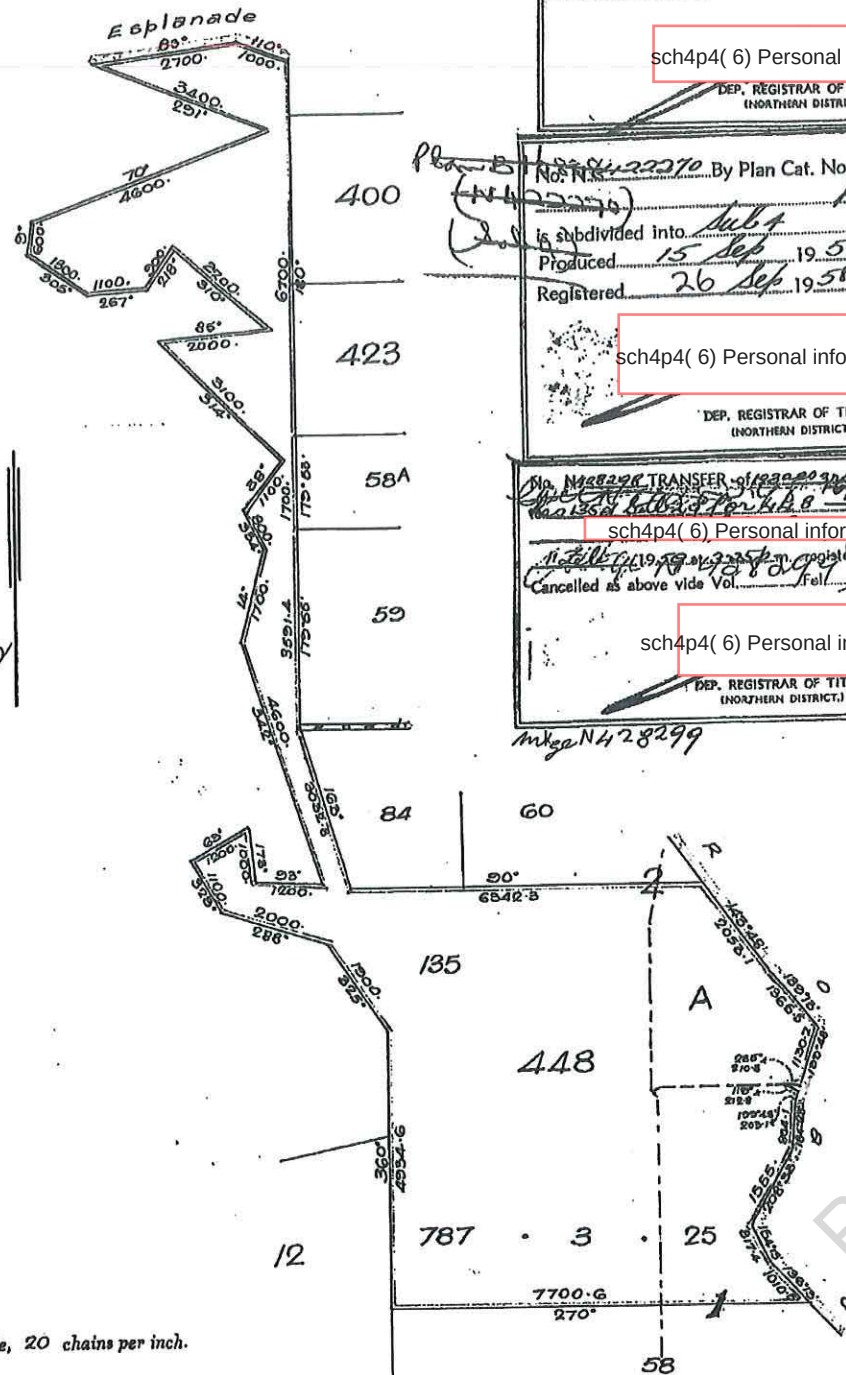
Signed, Sealed, and Delivered, the twentyfirst
 day of March 19 41, in presence of
 sch4p4(6) Personal information


 sch4p4(6) Personal information
 DEPUTY REGISTRAR OF TITLES,
 NORTHERN DISTRICT REGISTRY.

No. N252912 TRANSFER of Sub 1 to
 to Sub 1 to
 sch4p4(6) Personal information
 11 June 1941 at 2.00 p.m., registered 17 June 1941
 Cancelled as above vide Vol. 1322 F. 1236
 sch4p4(6) Personal information
 No. N33095 TRANSFER of Sub 1 to
 to Sub 1 to
 sch4p4(6) Personal information
 7 March 1952 at 10.10 a.m., registered 11 March 1952
 Cancelled as above vide Vol. 471 F. 154
 sch4p4(6) Personal information
 DEP. REGISTRAR OF TITLES
 (NORTHERN DISTRICT.)

Scale, chains per inch

Parish of Bassett



Scale, 20 chains per inch.

No. N355743 By Plan Cat. No. 14665
part of the within land
is subdivided into Result 3
Produced 18 Nov 1953 at 2.20 p.m.
Registered 30 Jul 1954
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N355744 TRANSFER of 501 acres 37 pchs Result 3
to sch4p4(6) Personal information
Produced 18 Nov 1953 at 2.20 p.m.
Cancelled as above vide Vol. 148 Fol. 172
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N355745 By Plan Cat. No. 16888
part of the within land
is subdivided into Sub 4
Produced 15 Sep 1958 at 3.30 p.m.
Registered 26 Sep 1958
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

No. N355746 TRANSFER of 1000 acres 2 pchs Sub 4 of
the within land
Produced 11 Feb 1959 at 10.15 a.m.
Cancelled as above vide Vol. 148 Fol. 172
sch4p4(6) Personal information
DEP. REGISTRAR OF TITLES
(NORTHERN DISTRICT)

mk 28299

QUEENSLAND

No. *N* 21511

REFERENCE TO PREVIOUS

Vol. 70 FOLIO 76

REGISTER BOOK, VOL. 209 FOLIO 130

~~sch4p4(6) Personal information~~

—, *Primo*

of Maokty _____ pursuant to Memorandum
of Conveyance No. N 93732 _____ produced the Fifteenth _____ day of November _____ 1921,
registered the Tenth _____ day of January _____ 1922, in 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 Carlisle _____ Parish of Bassett _____
containing One thousand six hundred and eighty acres _____ Exclusive of 12 acres for surveyed roads and
a further area of 26 acres and 28 perches reserved for road purposes, _____
more or less, as shown on the Plan hereon, and therein edged red, Being Subdivision 2 of Portion 448 on Plan
Cat No B3-156 deposited in the Office of the Deputy Registrar of Titles, Townsville _____

which said piece of Land is part of the Portion marked 448 delineated in the Public Map of the said Parish deposited in the Office of the Surveyor-General, originally granted by Deed of Grant No. 69525

to sch 4 p 4 (6) Personal information

Saving Always to the Crown all the rights and interests reserved to it by the said Deed of Grant.

sch 04 (6) Personal Information

I, Matthews whereof, I have herunto signed my name and affixed my seal, this Twentieth day of January One thousand nine hundred and twenty two

Signed, Sealed, and Delivered, the 20
day of January 1922, in presence

sch4p4(6) Personal information

sch4p4(6) Personal information

DEPUTY REGISTRAR OF TITLES,
NORTHERN DISTRICT REGISTRY

sch4p4(6) Personal information

19xx-xx-xx 10:42 p.m. ... 6 Nov 1993
Free from mortgage,
... sch4n4(6) Personal inform

217 189

NA NQ8986 TRANSFER 1944 - Reunite 57
sch4p4(6) Personal information - 2991

1923 3:43 p.m. (Free from mortgage) 4. Mon. 1023

217 1984

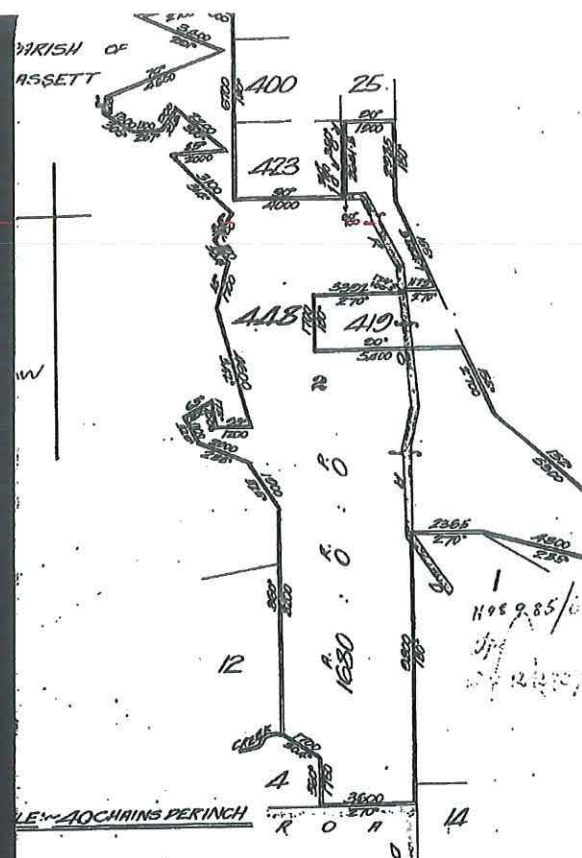
NO 308122158 of 1 acre - Results 18 & 19
sch4p4(6) Personal information 11 Dec

10:22, 10:47am, 4 Mon 10:23
(Free from Montygo)

217 185

Scale, chains per inch.

100



No. N00300 TRANSFER of 240000 — Receipt 13
sch4p4(6) Personal information 11 Dec 1923
10:45 am 4 May 1923
(Free from Mortgage)
sch4p4(6) Personal information
217 186

No. N100047 TRANSFER of 240000 — Receipt 13 —
sch4p4(6) Personal information pro. 30 Jan
1923 12:42 p.m. 4 May 1923
(Free from Mortgage)
sch4p4(6) Personal information
217 187

No. N100048 TRANSFER of 240000 — Receipt 10 —
sch4p4(6) Personal information pred 30
Jan 1923 at 12:43 p.m. 4 May 1923
(Free from Mortgage)
sch4p4(6) Personal information
217 188

No. N102202 TRANSFER of 240000 — Receipt 11 —
sch4p4(6) Personal information pro. 23 May
1923 3:44 p.m. 25 July 1923
(Free from Mortgage)
sch4p4(6) Personal information
218 248

No. N100114 TRANSFER of 100000 — Receipt 1047
sch4p4(6) Personal information 4 Feb
1923 2:05 pm 13 Feb 1924
(Free from Mortgage)
sch4p4(6) Personal information
223 112

107520 TRANSFER of 240000 — Receipt 27 —
sch4p4(6) Personal information 7 Apr
1924 2:40 p.m. 27 Sept 1924
(Free from Mortgage)
sch4p4(6) Personal information
229 192

URGENT to Mr. of ST 107468. 13 April 24 11.15am 23 Sept 24.

His Secretary E. Richards South Africa

1920 -

Side. Plan last No. 21 sch4p4 (6) Personal information

Subject to Mortgage No. 1933

Reference New Deed

Vol. 226 Folio 65

No. 1114850. TRANSFER of 2 deeds. Result 11

sch4p4 (6) Personal information

produced 16 May 1925 at 11.30am

registered 19 May 1925

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 121440. TRANSFER of 1 deed. Result 25 Feb

to sch4p4 (6) Personal information

produced 15 April 1926 at 11.40 am

registered 19 April 1926

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 121441. TRANSFER of 2 deeds Result 15

to sch4p4 (6) Personal information

produced 13 May 1926 at 12.30 pm

registered 13 May 1926

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 123319. TRANSFER of 2 deeds Result 29

to sch4p4 (6) Personal information

produced 15 July 1926 at 12.10 pm

registered 15 July 1926

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 123360. TRANSFER of 2 deeds Result 21

to sch4p4 (6) Personal information

produced 7 March 1927 at 11.30 am

registered 8 March 1927

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 123583. TRANSFER of 1 deed Result 30 and 31

to sch4p4 (6) Personal information

produced 10 March 1927 at 11.20 am

registered 10 March 1927

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

No. N. 123591. TRANSFER of 2 deeds Result 43

to sch4p4 (6) Personal information

produced 11 Nov 1927 at 5.37 pm

registered 16 Nov 1927

Free from Mortgage

Cancelled as above sch4p4 (6) Personal information

Dep. Registrar of Titles (Northern District)

sch4p4(6) Personal information

Actg. Dep. Registrar of Titles
(New York, N.Y.)

Published on DES Disclosure
RTI Act 2009

<p>No. 16488 TRANSFER of 2nd Resub 77</p> <p>sch4p4(6) Personal information</p> <p>10 June 1933 at 10:00 am</p> <p>produced 10 June 1933 at 10:00 am</p> <p>registered 10 June 1933 at 10:00 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 172386 TRANSFER of 2nd Resub 77</p> <p>sch4p4(6) Personal information</p> <p>10 June 1933 at 9:25 am</p> <p>produced 10 June 1933 at 9:25 am</p> <p>registered 10 June 1933 at 9:25 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 166046 TRANSFER of 1st Resub 1 & 2</p> <p>sch4p4(6) Personal information</p> <p>28 Aug 1933 at 11:00 am</p> <p>produced 28 Aug 1933 at 11:00 am</p> <p>registered 28 Aug 1933 at 11:00 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 174072 TRANSFER of 1st Resub 81 & 82</p> <p>sch4p4(6) Personal information</p> <p>21 Nov 1933 at 11:20 am</p> <p>produced 21 Nov 1933 at 11:20 am</p> <p>registered 21 Nov 1933 at 11:20 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 166047 TRANSFER of 1st Resub 1 & 2</p> <p>sch4p4(6) Personal information</p> <p>28 Aug 1933 at 11:00 am</p> <p>produced 28 Aug 1933 at 11:00 am</p> <p>registered 28 Aug 1933 at 11:00 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 175208 TRANSFER of 1st Resub 77 & 78</p> <p>sch4p4(6) Personal information</p> <p>26 Jan 1934 at 10:20 am</p> <p>produced 26 Jan 1934 at 10:20 am</p> <p>registered 26 Jan 1934 at 10:20 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 166092 TRANSFER of 1st Resub 13</p> <p>sch4p4(6) Personal information</p> <p>31 Aug 1933 at 10:55 am</p> <p>produced 31 Aug 1933 at 10:55 am</p> <p>registered 31 Aug 1933 at 10:55 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 170977 TRANSFER of 2nd Resub 71</p> <p>sch4p4(6) Personal information</p> <p>23 April 1935 at 3:20 pm</p> <p>produced 23 April 1935 at 3:20 pm</p> <p>registered 23 April 1935 at 3:20 pm</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 166829 TRANSFER of 1st Resub 1 & 2</p> <p>sch4p4(6) Personal information</p> <p>19 Oct 1933 at 11:17 am</p> <p>produced 19 Oct 1933 at 11:17 am</p> <p>registered 19 Oct 1933 at 11:17 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 178438 TRANSFER of 2nd Resub 76</p> <p>sch4p4(6) Personal information</p> <p>27 June 1935 at 12:45 pm</p> <p>produced 27 June 1935 at 12:45 pm</p> <p>registered 27 June 1935 at 12:45 pm</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 167091 TRANSFER of 1st Resub 19 & 20</p> <p>sch4p4(6) Personal information</p> <p>2 Nov 1933 at 10:22 am</p> <p>produced 2 Nov 1933 at 10:22 am</p> <p>registered 2 Nov 1933 at 10:22 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 181081 TRANSFER of 2nd Resub 51</p> <p>sch4p4(6) Personal information</p> <p>7 Nov 1935 at 11:20 am</p> <p>produced 7 Nov 1935 at 11:20 am</p> <p>registered 7 Nov 1935 at 11:20 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 168190 TRANSFER of 2nd Resub 54</p> <p>sch4p4(6) Personal information</p> <p>29 Oct 1936 at 11:00 am</p> <p>produced 29 Oct 1936 at 11:00 am</p> <p>registered 29 Oct 1936 at 11:00 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 188358 TRANSFER of 2nd Resub 54</p> <p>sch4p4(6) Personal information</p> <p>29 Oct 1936 at 11:00 am</p> <p>produced 29 Oct 1936 at 11:00 am</p> <p>registered 29 Oct 1936 at 11:00 am</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>
<p>No. 171370 TRANSFER of 2nd Resub 78</p> <p>sch4p4(6) Personal information</p> <p>24 July 1934 at 2:00 pm</p> <p>produced 24 July 1934 at 2:00 pm</p> <p>registered 24 July 1934 at 2:00 pm</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>	<p>No. 188612 TRANSFER of 2nd Resub 22</p> <p>sch4p4(6) Personal information</p> <p>20 Nov 1936 at 3:56 pm</p> <p>produced 20 Nov 1936 at 3:56 pm</p> <p>registered 20 Nov 1936 at 3:56 pm</p> <p>Cancelled as above</p> <p>Vide Vol. 289 Folio 253</p> <p>Dep. Registrar of Titles (Northern District)</p>

RTI Act 2009

ABEYANCE 45 vi
No. 224179

No. 224178 TRANSFER of 2000s 224179
to sch4p4(6) Personal information

Produced
1 May 1942 at 3.35 PM registered 16 May 1942
Cancelled as above vide Vol. 28 Fcl. 16

sch4p4(6) Personal information

DEP. REGISTRAR OF TITLES,
(NORTHERN DISTRICT)

ABEYANCE
No. 2233633
17/3/45

60-2233633
No. 2233633
(60-2233633)

17/3/45
15312
12/3/45
12/3/45
12/3/45

Published under the Access to Information Act /
RTI Act 2009



QUEENSLAND.

VOL. 226 FOL. 64



20226064

No. 10159

County CarlisleParish BarrettNumber and Date of Surrendered Deed N 1023Date of Surrender 24th October, 1889Area Surrendered 549 acres and 100 perches

Deed of Grant of Land

Under the Provisions of Section 8 of "The Land Acts, 1910 to 1924."

George the Fifth, by the Grace of God, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas, King, Defender of the Faith:—

To All to whom these Presents shall come, Greeting:

Whereas, in pursuance of the provisions of Section 8 of "The Land Acts, 1910 to 1924,"

sch4p4(6) Personal information

the Owner of the Land hereinafter mentioned, has surrendered to Us All that Parcel of Land in Our State of Queensland, containing by admeasurement Five hundred and twenty acres and five perches County of Carlisle Parish of Barrett Partion 1 being the whole of the Land contained in Deed of Grant, No. N 1023, which was surrendered on the twenty-second day of September, 1924, in consideration that a new Deed of Grant with the Description hereafter contained should issue: Now Know Ye, That for the considerations aforesaid, and in further consideration of the Quit-Rent hereinafter reserved, 30s with the aid of the Executive Council of Our said State, have Granted, and for Us, Our Heirs and Successors, do hereby Grant, unto sch4p4(6) Personal information and Assigns, subject to the several and respective Reservations hereinafter mentioned, All that

Parcel of Land in Our said State, containing by admeasurement Five hundred and twenty acres and five perches be the same more or less, situated in the County of Carlisle Parish of Barrett Partion 1 Commencing at the south-east corner of Partion 11 and bounded thence northward by that portion bearing north thirty-two chains ten and four tenths links, the whole bearing 58 degrees 11 minutes one chain eight and a half tenths links and by a road bearing 29 degrees twenty-two chains fifty-five and eight tenths links on the south by a line bearing 25 degrees 30 minutes one chain four and two tenths links and by Partion 11 bearing west sixty chains fifty links, again on the west and on the north by Partion 11 bearing north eighty-eight chains twenty-five and eight tenths links, 32 degrees one chain twenty-four and four tenths links, 12 degrees 30 minutes one chain five and nine tenths links and east twenty-three chains sixty-five links, thence by lines bearing 14 degrees fifty chains, 24 degrees thirty-two chains south thirty-two chains, 14 degrees twenty-two chains and 12 degrees thirty chains on the east by a line and Partion 11 and 12 bearing south sixty-three chains thirty-five links and again on the south by a road bearing west fourteen chains fifty links to the point of commencement. Exclusion of Five acres one hundred twenty-one perches for surveyed roads.

as shown on Plan of Survey deposited in the Survey Office, with all the Rights and Appurtenances whatsoever thereto, belonging: but not including any part of this side of the said roads or any of them.
To Hold unto sch4p4(6) Personal information 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 Laws of Our said State in that behalf, and to the Reservations and Conditions set forth in the said Deed of Grant No. N 1023 to the Land so surrendered: In Testimony Whereof, We have caused this Our Grant to be Sealed with the Seal of Our said State.

Witness Our Right Trusty and Well Beloved Counsellor Sir MATTHEW NATHAN, Major on the Retired List of Our Corps of Royal Engineers, having the Brevet rank of Lieutenant-Colonel in Our Army, Knight Grand Cross of Our Most Distinguished Order of St. Michael and St. George, Governor of Our State of QUEENSLAND and its Dependencies, in the Commonwealth of Australia, at Government House, Brisbane, in Queensland aforesaid, this twenty-third day of December, in the fifth year of Our Reign, and in the year of Our Lord One thousand nine hundred and twenty-four.

sch4p4(6) Personal information

ENTERED as Country Land in the Register Book, Vol. R13, Folio 216, in the Survey Office, Brisbane, this twenty-third day of December, 1924.

sch4p4(6) Personal information

ENTERED in the Register Book, Vol. 226, Folio 64, this 8th day of January, 1925.

sch4p4(6) Personal information

REGISTRAR OF TITLES.



QUEENSLAND.

VOL. N 226 FOL. 65



20226065

N10960

County LeathieParish Bassett

Number and Date of

Surrendered 421Date of Surrender 22 September, 1924Area Surrendered 85 acres 2 rods

Deed of Grant of Land

Under the Provisions of Section 8 of "The Land Acts, 1910 to 1924"

George the Fifth, by the Grace of God, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas, King, Defender of the Faith:—

To All to whom these Presents shall come, Greeting:—

Whereas, in pursuance of the provisions of Section 8 of "The Land Acts, 1910 to 1924,"

sch4p4(6) Personal information

The Owner of the Land hereinafter mentioned, has surrendered to Us All that Parcel of Land in Our State of Queensland, containing by admeasurement Eighty five acres two rods be the same more or less, situated in the County of Leathie Parish of Bassett Re-subdivision A of Subdivision 2 of Portion 448 being the part of the Land contained in Particulars Title No. N2141 which was surrendered on the twenty second day of September 1924 in consideration that a new Deed of Grant with the Description hereinafter contained should issue: Be it Known That for the considerations aforesaid, 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 sch4p4(6) Personal information and Assigns, subject to the several and respective reservations hereinafter mentioned, All that:

Parcel of Land in Our said State, containing by admeasurement Eighty four acres one rod thirty seven perches to the same more or less, situated in the County of Leathie Parish of Bassett Re-subdivision A of Subdivision 2 of Portion 448 Commencing at the north-west corner of Portion 4, and bounded thence on the south by that portion bearing 92 degrees 30 minutes one chain one and one half links and east twenty three chains sixty five links and by a chain bearing 105 degrees two chains ten and eight tenths links on the south-east and north-east by a road bearing 19 degrees 14 minutes eleven chains thirty and two tenths links 31 degrees 13 minutes thirteen chains sixty and a half links and 22 degrees 28 minutes thirty chains thirty eight and one half links and on the north-west and west by a line bearing 192 degrees 30 minutes fifteen chains sixty four and one tenth links and south thirty chains forty five links to the point of commencement.

shown on Plan of Survey deposited in the Survey Office, with all the Rights and Appurtenances whatsoever thereto belonging: but not including any part of the tail of the said road to hold unto the sch4p4(6) Personal information 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 Laws of Our said State in that behalf, and to the reservations and Conditions set forth in the Original Deed of Grant No. 69525 to the Land so surrendered: In Testimony Whereof, We have caused this Our Grant to be Sealed with the Seal of Our said State.

Witness Our Right Trusty and Well Beloved Counsellor Sir MATTHEW NATHAN, Major on the Retired List of Our Corps of Royal Engineers, having the Brevet rank of Lieutenant-Colonel in Our Army, Knight Grand Cross of Our Most Distinguished Order of St. Michael and St. George, Governor of Our State of QUEENSLAND and its Dependencies, in the Commonwealth of Australia, at Government House, Brisbane, in Queensland aforesaid, this twenty third day of December in the fifteenth year of Our Reign, and in the year of Our Lord One thousand nine hundred and twenty-four:

sch4p4(6) Personal information

ENTERED as Country Land in the Register Book, Vol. 213, Folio 217, in the Survey Office, Brisbane, this twenty ninth day of December, 1924.

sch4p4(6) Personal information

ENTERED in the Register Book, Vol. 226, Folio 65, this Fifth day of January, 1925.

sch4p4(6) Personal information

M. NATHAN, GOVERNOR.

Cly. REGISTRAR OF TITLES.

Scale 10 chains to an inch

[Handwritten:] 1998-7000 Bill of India
[Stamp:] PUBLIC REGISTRATION OFFICE
b4(6) Personal information
[Handwritten:] 20 Jan 1922
[Stamp:] POLAND & CO., LIMITED.
[Handwritten:] independent of interest as
[Stamp:] b4(6) Personal information
[Handwritten:] No. 1922-5000
[Stamp:] 50 JAN 1922
[Handwritten:] registered
[Stamp:] Dist. Registrar of Titles
 (CENTRAL DISTRICT)
[Handwritten:] RELEASE
 endorsed on duplicate
[Stamp:] Bill of Exchange

No. 115670 TRANSFERR 33 Ind My psi Sub 60
sch4p4(6) Personal information
Date 7 Dec 1932 at 10:10 a.m.
Time 30 Dec 1932
at as above } sch4p4(6) Personal information
Date 23 Dec 1932 }
at 10:10 a.m. }
J. Edgar Hoover, Director
(Washington, D.C.)

ABEYANCE
No. 4220827

No. 280227 TRANSMISSION
of the death of the abovenamed sch4p4 (6) Personal information
on the 17 March 1949 at an estate in the sample
in the will of the deceased sch4p4 (6) Personal information
and sch4p4 (6) Personal information
appears as a witness in common in equal
shares as appears by Probate copy
of will and documentary evidence. Produced 25
June 1949 12 p.m. Entered 19 March 1949
barrelled as above
Vide Vol. 356 804.5 / 6.

sch4p4 (6) Personal information

REGISTRAR OF TITLES
(DIORLEIGH DISTRICT)
DEPT. OF TITLES
(DIORLEIGH DISTRICT)

REGISTRAR OF TITLES
(DIORLEIGH DISTRICT)
DEPT. OF TITLES
(DIORLEIGH DISTRICT)

Vol. N 70 fol. 76
20070076

Queensland
A. Land Purchase **FULLY CANCELLED**

No. 69525
County Carlisle
Parish Bassett
Date of Purchase 3rd July 1876
Area 1680 Acres

Victoria by the Grace of God of the United Kingdom
of Great Britain and Ireland Queen, Defender of the
Faith and so forth

To All to whom these Presents shall come Greeting

Whereas in conformity with the Regulations made in pursuance of the
Crown Lands in our Colony of Queensland has
become the purchase of the land hereinafter described for the sum of Four
hundred and forty pounds sterling Now Know Ye that for and in full
consideration of the said sum for and on our behalf well and truly paid
into the Colonial Treasury of our said Colony before these Presents are issued
and in further consideration of the quit rent hereinafter reserved with the
advise of the Executive Council of our said Colony Have granted and our
Heirs and successors do hereby Grant unto the said sch4p4(6) Personal information
sch4p4(6) Personal information the Administrators and assigns subject to the several and respective
Reservations hereinafter mentioned; All that piece or parcel of Land in
our said Colony; containing by admeasurement One thousand two
hundred and eighty acres be the same more or less situated in the County
of Carlisle and Parish of Bassett—Selection 4448 Macray District
Portion Four hundred and forty-eight—Being the land selected
under the 46th Section of The Crown Lands Alienation Act of 1868—
Commencing at a point ten chains North from the Northwest corner of
portion Four hundred and bounded thence on the East by a line and portion
Four hundred and Four hundred and twenty-three bearing South sixty
seven chains; on the North by the last mentioned portion bearing East
forty chains; on the West by that portion bearing North twenty-seven
chains; again on the North by portion Three hundred and ninety-two
bearing East twenty chains; again on the East by line bearing South twenty
nine chains and eighty-five links and 155° thirty-five chains and
fourteen and seven tenths links; thence by line bearing West eleven
chains and seventy-nine links and 174° one hundred and five tenths
links by portion Four hundred and fifteen bearing West thirty-three
chains and ninety-two links South seventeen chains and East forty-four
chains again by line bearing 155° twenty-seven chains, 132° fifty-three
chains and 109° eight chains; on the South by line bearing 205° sixteen
chains 285° forty-eight chains and West twenty-three chains and sixty-five
links; again on the East by a line bearing South ninety-eight chains again
on the South by a line bearing West thirty-nine chains; and on the West
by line bearing North seventeen chains and fifty links 304° seventeen
chains North eighty-two chains 325° sixteen chains 288° twenty chains
329° eleven chains 63° twelve chains 173° ten chains 93° twelve chains
314° forty chains 14° seventeen chains 334° eight chains 38° eleven
chains 314° thirty-nine chains 85° twenty chains 310° twenty-two chains
218° nine chains 267° eleven chains 305° thirteen chains; 9° six chains
70° forty chains 291° thirty-four chains 83° twenty-seven chains and
110° ten chains to the point of commencement; exclusive of twelve acres

for surveyed roads a portion on plan of survey deposited in the
Surveyor General's Office and a further area of thirtyeight acres three
roods nine perches reserved for road purposes; with all the rights
and appurtenances whatsoever thereto belonging; but not including
any part of the soil of the said roads or any other;
To hold unto the said sch4p4(6) Personal information his administrators
and assigns for ever; Yielding and paying therefor yearly unto us
Our Heirs and Successors the Quit rent of Peppercorn for ever if demanded
Provided Nevertheless And we do hereby reserve unto us our
Heirs and Successors all such parts and so much of the said land
as may hereafter be required for making Public Ways, Canals or
Railroads in over and through the same, to be set out by our Governor
for the time being of our said Colony or some person by him authorized
in that Respect; And also all sand, Clay, Gravel and Indigenous Timber
and all other materials the natural produce of the said land which may
be required at any time or times hereafter for the construction and repair
of any Public Ways, Bridges, Canals and Railroads or any Fences Embank-
ments, Dams, Sewers, or Drains, necessary for the same together with the right
of taking and removing all such material: And we do further
Reserve unto us our Heirs and Successors the right of full and free
ingress, egress, and regress into, out of and upon the said land
for the several purposes aforesaid; In Testimony whereof We
have caused this our Grant to be sealed with the seal of our said
Colony;

sch4p4(6) Personal information

Witness our Trusty and Well beloved Sir Anthony Innesgrave
Knight Grand Cross of the most Distinguished Order of St Michael
and St George; Governor and Commander in Chief of the Colony
of Queensland and its Dependencies at Government House
Brisbane in Queensland aforesaid this sixteenth day
of January in the fiftyfirst year of our Queen and in
the year of our Lord one thousand eight hundred
and eightyeight

(Sgt) sch4p4(6) Personal information

Entered in the Register Book Vol. 689 folio 35 this nineteenth day of
January 1888

I certify the above to be a true copy of the existing title
to the within land, as contained in the Register Book,
kept under the provisions of the Real Property Acts of
1861 and 1877, and of any endorsements appearing
thereon.
Registrar of Titles' Office,
Brisbane, 31 day of December, 1888. Registrar of Titles.

sch4p4(6) Personal information

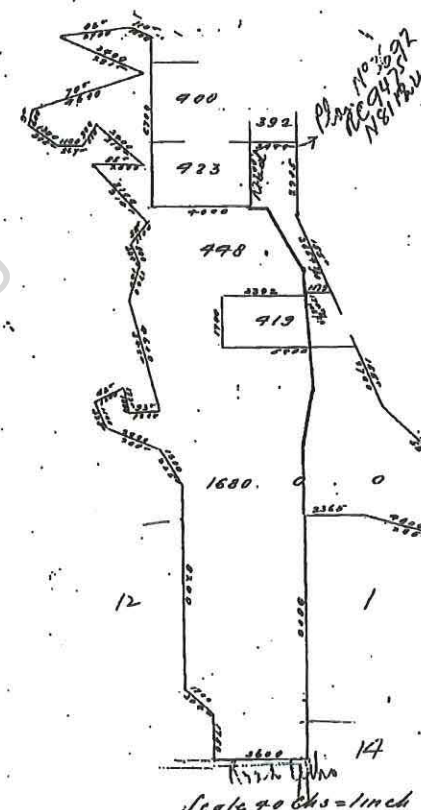
No. 1606 Bill of Mortgage produced 19 March 1889
at 3 p.m. registered 22 March 1889
from sch4p4(6) Personal information to the
Queensland National Bank Limited
principal sum secured £10,000 pounds
and for interest at the rate of 5 per centum per annum
payable as herein stated
sch4p4(6) Personal information
Local Dep. Reg. of Titles.
(Northward Branch)

Mo-1881124. By Proclamation dated 14 Feb. 1919
under the provision of Sec. 7 of the Public Work
and Resumption Act of 1906 the 2nd and 21st
part of the within land is resumed for public
road purposes and is now vested in the Crown.
Produced 5 May 1919 at 11.5 a.m.
Registered 9 May 1919

15 Nov. 1991 at 2:25 PM
 sch4p4(6) Personal information
 Farmer, G. M. Ray
 sch4p4(6) Personal information
 SAMPLE to

100-92723-101 of 100-92723-101 Nov. 15, 1981
 from: sch444 (6) Personal information
 THE OFFICIAL NATIONAL SECURITY AGENCY
 P. 100-92723-101 of 100-92723-101 Nov. 15, 1981
 from: sch444 (6) Personal information
 THE OFFICIAL NATIONAL SECURITY AGENCY

NO. 1937322-15-MSFEL at 1680.000 Sub 2.
sch4p4 (6) Personal information 15 Nov.
1951. 2:25 pm. 10 Jan. 1922.
sch4p4 (6) Personal information
209 1680



No. N28844 LEASE dated 19 Sept. 1902
produced 10 October 1902. 615-442
unmistaken to Rev. 1902 from
sch4p4(6) Personal information to the North
Brockland Road Company Limited
Term 3 years from 1 July 1902.
Rental £20 per annum payable quarterly
in arrears
sch4p4(6) Personal information
Dep. Reg. of Titles.
(Western Branch.)
Mortgagee's consent endorsed

*Doc. No. 1096. Bill of Mortgage produced 9 Sep 1904
at 2.15 p.m. registered 10th Sept 1904
from The City of London and the London Dock Company Limited (of the
City of London) to the City of London and the London Dock Company Limited (of the
City of London)*

sch4p4(6) Personal information

*principal sum secured by the mortgage is made out further
repayable on demand with
interest at the rate of 5 per centum per annum
payable*

sch4p4(6) Personal information

*Dep. Reg. of Titles.
(LONDON OFFICE)*

FULLY CANCELLED *F.C.*

11. Appendix 3 - Mackay Regional Council correspondence relating to environmentally relevant activities on the site

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YOUR REF
OUR REF 817122-004-RP-1 HJ:LB

9 November 2010

COPY

sch4p4(6) Personal information

5/232 Robina Town Centre Drive
Robina QLD 4230

Property Search – Requisition Enquiry Environment

To whom it may concern,

An Officer of Mackay Regional Council's Health and Regulatory Services section carried out a requisition search of 0 Hodges Road, Shoal Point (Lot 4 on Plan RP817122).

There are no businesses registered with Mackay Regional Council that perform any Environmentally Relevant Activities at this address. There are no documented breaches of General Environmental Duty at this property.

In relation to this environmental search, to the extent permitted by law, Mackay Regional Council, its officers and agents disclaim all liability howsoever arising from this search including without limiting the generality hereof liability in contract negligence or by statute in respect of you or any other persons placing reliance upon this search.

Should you have any queries, please contact Environmental Protection Officer, Heidi Jarman on telephone 1300 MACKAY (1300 622 529).

Yours sincerely,

sch4p4(6) Personal information

Neil Ischenko
Manager Health and Regulatory Services

mackay.qld.gov.au

12. Appendix 4 - EMR search results

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Release

QLD ENVIRONMENTAL PROTECTION AGENCY

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

Transaction ID: 687471 EMR Site Id: 15618 09 November 2004

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

Lot: 4 Plan: RP817122

EMR RESULT

The above site IS included on the Environmental Management Register.

Lot: 4 Plan: RP817122
Address: HODGES ROAD
SHOAL POINT QLD 4740

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

LIVESTOCK DIP OR SPRAY RACE - operating a livestock dip or spray race facility.

For the majority of rural properties only a small area may be affected by the chemicals used in livestock dips and spray races. The EPA may hold further information relating to the location of the dip site within this property.

CLR RESULT

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

ADDITIONAL ADVICE

Note: The cost of a search increased on 2 July 2004 and is now \$30.70 per lot.

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

Lindi Bowen
Registrar, Contaminated Land Unit

13. Appendix 5 - Borelogs

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**+ GILBERT
SUTHERLAND**

	BH170.0-0.15		
Published on DES Disclosure Log RTI Act 2009			

Borehole:	BHA2
Project:	10527
Client:	Shoal Point Bay Development
Depth (m):	0.3
Logged by:	Personal information
Drilled by:	Gilbert & Sutherland
Drill date:	18/10/2010

Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL (m)	Graphic log		
0.0		LIGHT MEDIUM CLAY , Organic matter and roots present, brown, some gravel (1-5mm) present MEDIUM CLAY , Brown, no gravel present.	BH2/0.0-0.15
0.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

Borehole: BHA3
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
		SAND , Medium grained sand, some roots presnt, organic matter abundant, grey with orange mottles	BH3/0.0-0.15
		MEDIUM CLAY , Very plastic, some fine roots present, some medium grained sand, black.	
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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RTI Act 2009

SAND, medium

0.5
1.0
1.5
2.0
2.5
3.0

+ GILBERT SUTHERLAND

[illegible]

Borehole: BHA6
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Silty sand (loamy) orgainic matter and roots present, medium grained sands SAND , Silty sands (loamy) with increased medium grained black sands, roots and orgainic matter present.	BH6/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA7
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL (m)	Graphic log		
0.0		SILTY SAND , Minor loams, roots and organic matter present, black SILTY SAND , Moist silty sand with loams, organic matter and roots present, black, slightly plastic.	BH7/0.0-0.15
0.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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RTI Act 2009

Borehole: BHA8
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Loamy sand with roots and organic matter present, medium grained sand, brown-grey	BH8/0.0-0.15
			SAND , Loamy sand with organic matter and roots present, increased medium grained sand, grey.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA9
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SILTY SAND , Disturbed, brown SILTY SAND , Medium grained sand, disturbed, brown.	BH9/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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**+ GILBERT
SUTHERLAND**

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+ GILBERT SUTHERLAND

Sl. No.	Date	Description	Author	Reviewer	Status

Published on DES Disclosure Log
RTI Act 2009

Borehole: BHA12
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal Information
Drilled by: Gilbert & Sutherland
Drill date: 18/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			MEDIUM CLAY , High plasticity, sticky clay, brown with orange mottles, gradual change to grey with orange mottles	BH12/0.0-0.15
			MEDIUM CLAY , Firm, grey with orange mottles.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Sl. No.	Requester's Name	Requester's Address	Requester's Contact No.	Requester's Email ID	Requester's Designation	Requester's Organization	Requester's Purpose	Requester's Status	Requester's Remarks
1	QC1/0.0-0.15, QC1A/0.0-0.15								

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A vertical scale on the left side of the page, ranging from 0.5 to 3.0. The scale has major tick marks at 0.5, 1.0, 1.5, 2.0, 2.5, and 3.0. A shaded area is present at the top of the page, above the 0.5 mark, with a stippled pattern. The text 'SAND , Brown.' is written in the top right corner.

SAND , Brown.

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BH15/0.0-0.15		
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A vertical scale is shown on the left, ranging from 0.5 to 3.0 in increments of 0.5. The top portion of the scale, from approximately 0.5 to 0.7, is shaded with a stippled pattern and labeled "SAND, Brown." The rest of the scale is white.

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Borehole: BHA18
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6 Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained sand, yellow-orange sand, roots and organic matter present, gradual change to; SAND , Medium grained sand, yellow-brown sand.	BH18/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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[illegible]

Borehole: BHA20
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (b) (6) Personal Information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Depth NSL (m) Graphic log		
		SAND , Medium grained sand, yellow-orange sand, roots and organic matter present, gradual change to;	BH20/0.0-0.15
		SAND , Medium grained sand, yellow-brown sand.	
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

Borehole: BHA21
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Orange-white, medium grained	BH21/0.0-0.15
			SAND , Brown, medium grained.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA22
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal Information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Brown, medium grained	BH22/0.0-0.15
			SAND , Brown, medium grained.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA23
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
		SAND , Brown, medium grained sand, some fine roots and organic matter present	BH23/0.0-0.15
		SAND , Brown-orange, medium grained sand.	
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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Borehole: BHA24
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			LOAMY SAND , Dark brown, medium grained SAND , Brown-orange, medium grained sand.	BH24/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA25

Project: 10527

Client: Shoal Point Bay Development

Depth (m): 0.3

Log type: Personal information

Drilled by: Gilbert & Sutherland

Drill date: 19/10/2010

Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Orange-brown-yellow, medium grained sand	BH25/0.0-0.15
			SAND , Orange-brown-yellow, medium grained sand.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Sand Color	Percentage
SAND	0.2
Orange	0.2
Green	0.2
Blue	0.2
Yellow	0.2
Grey	0.2

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[illegible]

Borehole: BHA28
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained, orange-brown-yellow	BH28/0.0-0.15
			SAND , Medium grained, brown-dark brown.	
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA29
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3
Logged by: 6 Personal information
Drilled by: Cardno Bowler
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
0.0			
0.5			
1.0			
1.5		SAND , Medium grained sand, orange-white, moist	BH29/0.0-0.2, 0.2-1.0, 1.0-2.0, 2.0-2.5, 2.5-3.0
2.0			
2.5			
3.0		SAND , Medium grained sand, orange-white, wet.	
3.5			
4.0			
4.5			

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Borehole: BHA30
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3
Logged by: 6) Personal information
Drilled by: Cardno Bowler
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
0.0			
0.5			
1.0			
1.5		SAND , Medium grained sand, orange-white, moist	BH30/0.0-0.2, 0.2-1.0, 1.0-2.0, 2.0-2.5, 2.5-3.0
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

Borehole: BHA31
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Orange-white, medium grained, moist.	BH31/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA32
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
		SAND , Medium grained sand, dark brown, moist	BH32/0.0-0.15
		SAND , Medium grained sand, orange-white, moist.	
0.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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S.No	Date	Description
BH33/0.0-0.15		

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Borehole: BHA34
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6 Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained sand with minor clays, grey, moist	BH34/0.0-0.15
			SAND , Medium grained sand with increased clays, grey, moist.	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA35
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: [redacted] Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
		SAND , Medium grained sand, dark grey, moist	BH35/0.0-0.15
		SAND , Medium grained sand, orange with dark mottles, moist.	
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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Borehole: BHA36
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6 Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL (m)	Graphic log		
0.0		SAND , Grey, some dark orange-brown pieces.	BH36/0.0-0.15
0.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

Borehole: BHA37
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SANDY CLAY , Medium grained, grey-pale grey, moist	BH37/0.0-0.15, QC6/0.0-0.15, QC6A/0.0-0.15
			SANDY CLAY , Medium grained, grey-pale grey, moist	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA38
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained sand, orange-brown, no organic matter	BH38/0.0-0.15
			SAND , Medium grained sand, orange-brown, no organic matter, minor gravels (10-25mm).	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Drilling				
Depth NSL (m)	Depth NSL (m)	Graphic log	Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
			SAND , Medium grained sand, orange-brown, no organic matter	BH39/0.0-0.15
			SAND , Medium grained sand, orange-brown, no organic matter, minor gravels (10-25mm).	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA40
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained sand, orange-brown, no organic matter	BH40/0.0-0.15
			SAND , Medium grained sand, orange-brown, no organic matter, minor gravels (10-25mm).	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA41
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logbook: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , Medium grained sand, orange-brown, no organic matter	BH41/0.0-0.15
			SAND , Medium grained sand, orange-brown, no organic matter, minor gravels (10-25mm).	
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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A vertical scale is shown on the left side of the page, ranging from 0.5 to 3.0. The scale is marked with major ticks at 0.5, 1.0, 1.5, 2.0, 2.5, and 3.0. The area above the 0.5 mark is shaded with a stippled pattern and labeled "SAND, Minor load".

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[illegible]

Borehole: BHA44
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (b) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			SAND , medium grains sand, brown, roots present, moist	BH44/0.0-0.15, QC4/0.0-0.15, QC4A/0.0-0.15
			SAND , Medium grained sand, orange, moist.	
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA46
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			LOAMY SAND , Black, minor gravels (10-20mm), moist LOAMY SAND , Sand and gravel fill, sand at 0.3m below NSL.	BH46/0.0-0.15
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: BHA48
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL(m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			LOAMY SAND , Medium grained sand, dry, brown SAND , Medium grained sand, orange-brown, moist.	BH48/0.0-0.15
.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

Borehole: BHA49
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
		LOAMY SAND , Brown, moist	BH49/0.0-0.15
		SAND , Medium grained sand, brown, moist.	
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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Borehole: BHA50
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: (6) Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL (m)	Graphic log		
		LOAMY SAND , Medium grained sand, moist, brown SAND , Medium grained sand, moist, orange.	BH50/0.0-0.15, QC5/0.0-0.15, QC5A/0.0-0.15
.5			
1.0			
1.5			
2.0			
2.5			
3.0			
3.5			
4.0			
4.5			

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Borehole: BHA52
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 0.3
Logged by: 6 Personal information
Drilled by: Gilbert & Sutherland
Drill date: 19/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
			LOAMY SAND , Medium grained sand, moist, brown SAND , Medium grained sand, moist, orange.	BH52/0.0-0.15
0.5				
1.0				
1.5				
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

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Borehole: IB1
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3
Logged by: (6) Personal Information
Drilled by: Cardno Bowler
Drill date: 19/10/2010



Depth NSL (m)	Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
	Depth NSL (m)	Graphic log		
0.5				
1.0				
1.5			SAND , Medium grained sand, orange-white, cobbles at 1.5m	
2.0				
2.5				
3.0				
3.5				
4.0				
4.5				

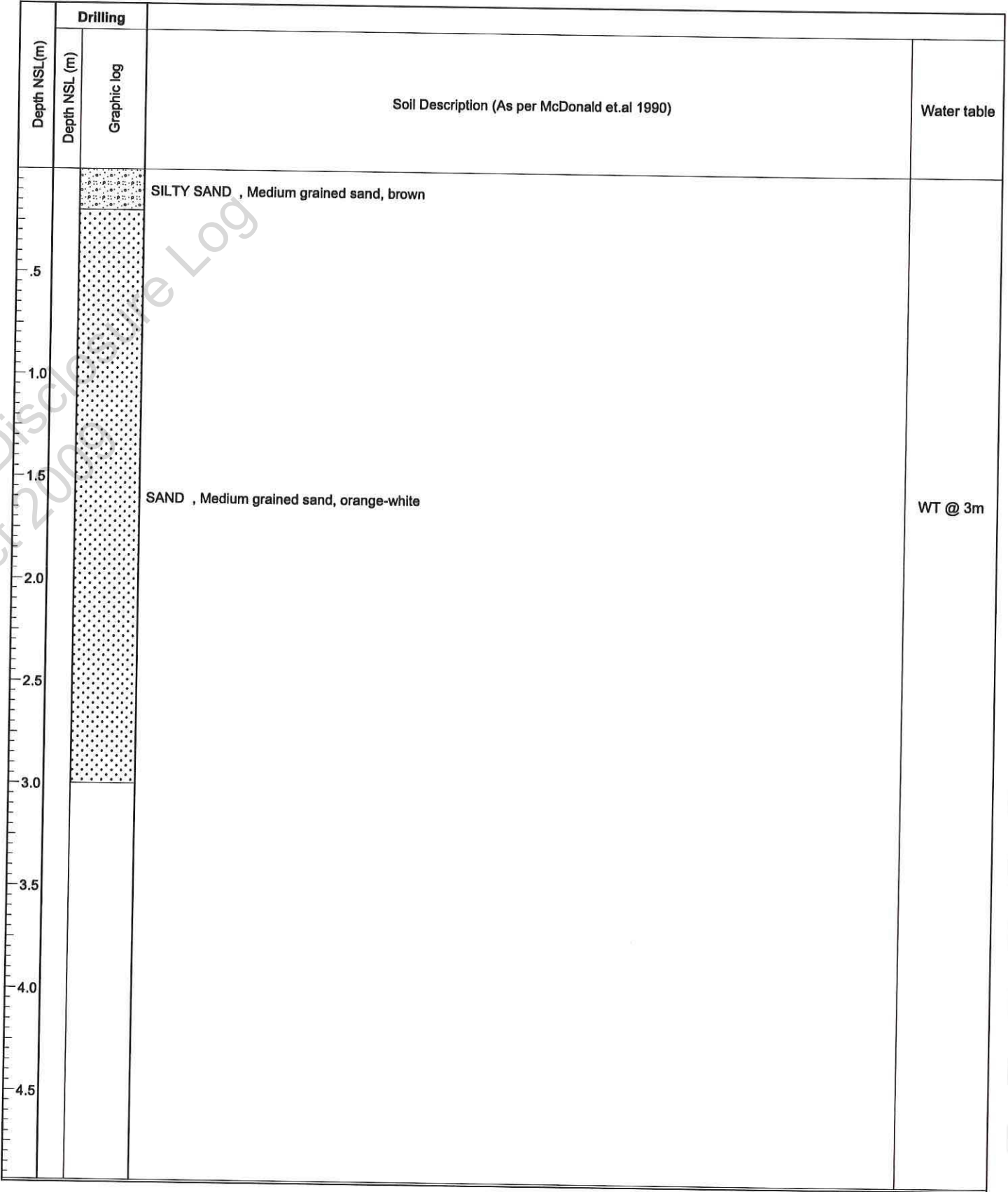
Borehole: IB2
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3
Logged by: Personal information
Drilled by: Cardno Bowler
Drill date: 19/10/2010



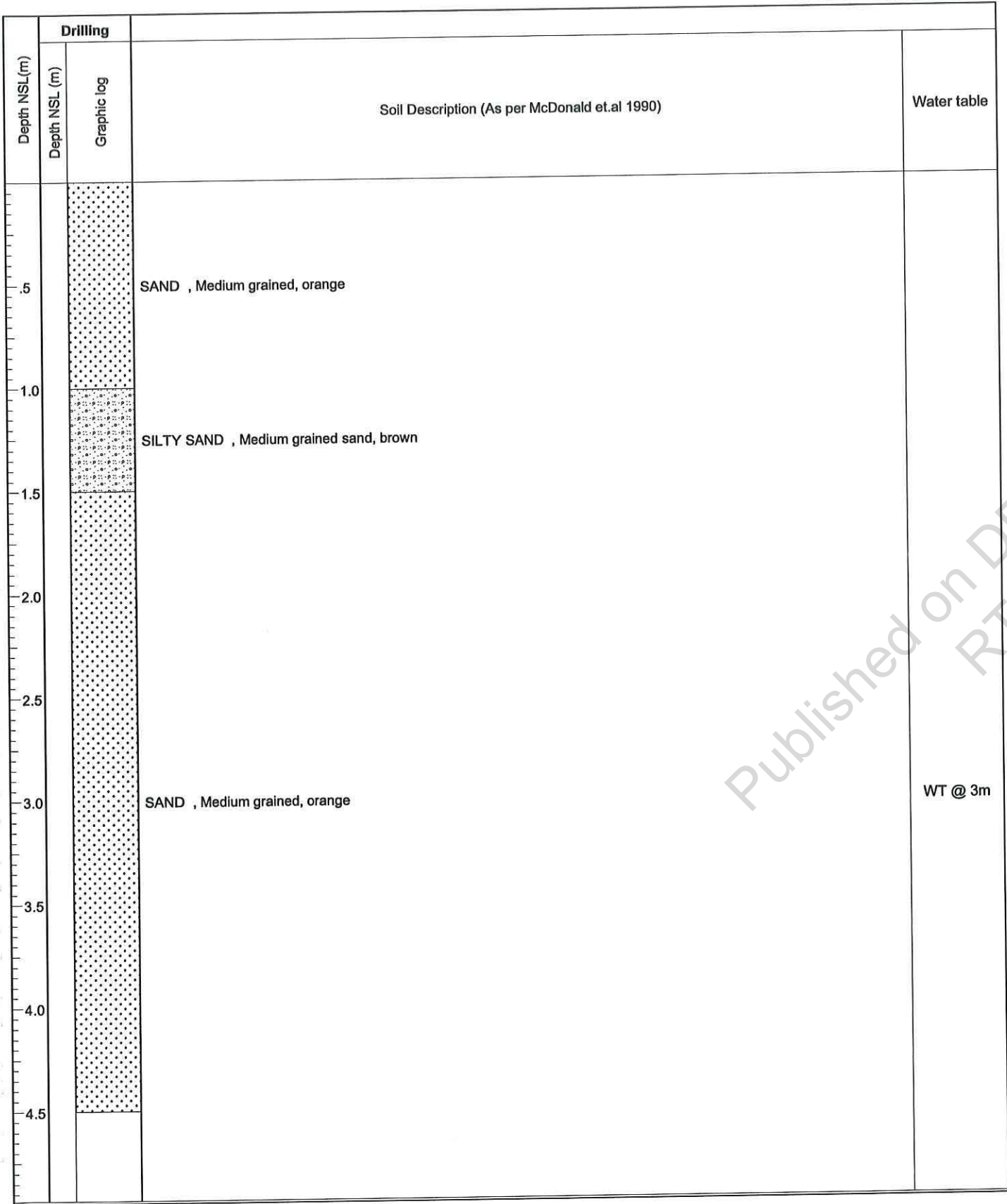
Drilling		Soil Description (As per McDonald et.al 1990)	Sample ID/Depth
Depth NSL(m)	Graphic log		
0.5		SAND , Medium grained sand, orange-white	
1.0			
1.5		SAND , Medium grained sand, orange-white	
2.0			
2.5		SAND , Medium grained sand, orange-white	
3.0			
3.0		SAND , Medium grained sand, grey, moist	
3.5			
4.0			
4.5			

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Borehole: GW1
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3.00
Logged by: 6 Personal information
Drilled by: Cardno Bowler Geotechnical
Drill date: 19/10/2010

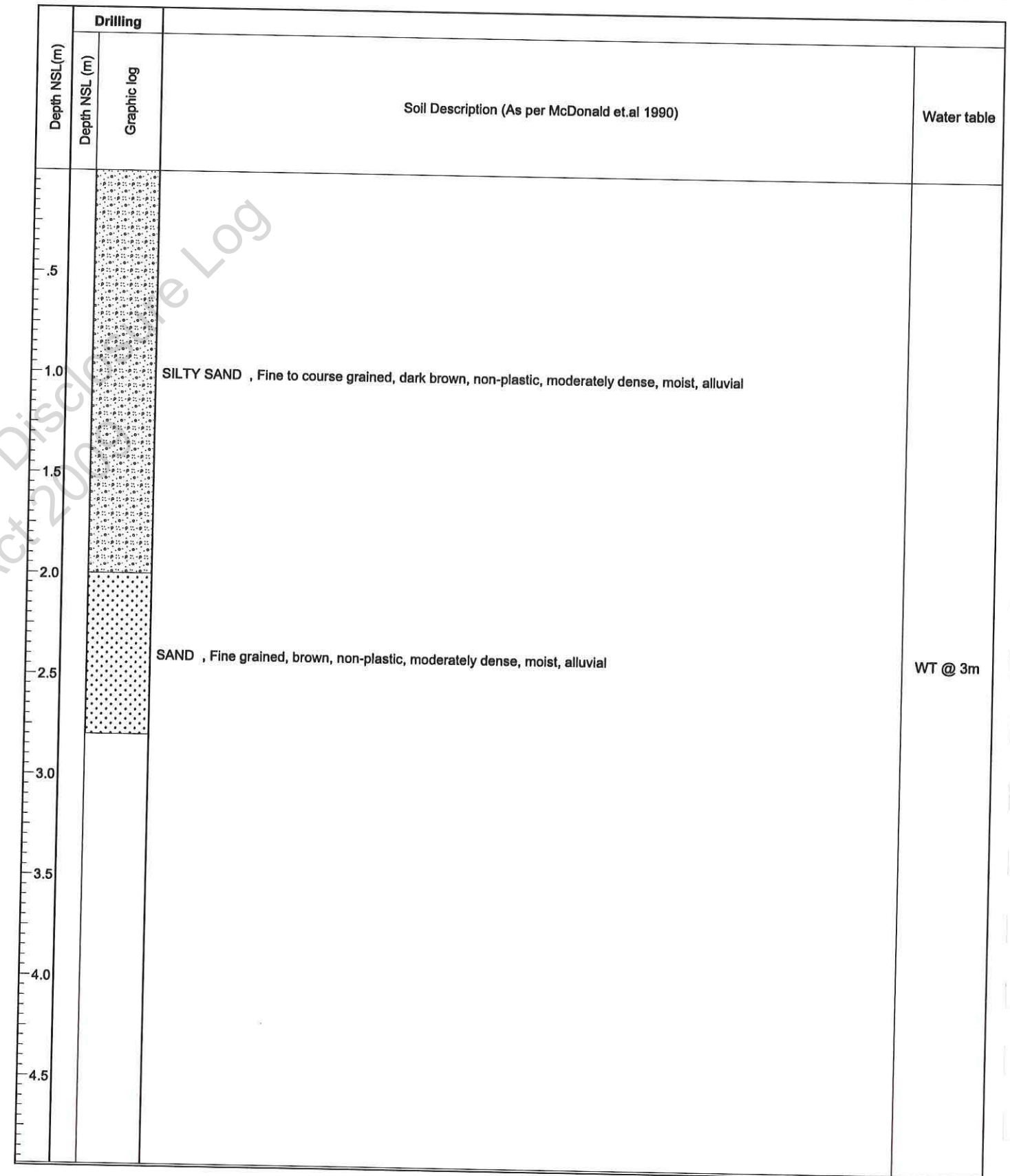


Borehole: GW2
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.50
Logged by: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 13/11/2010

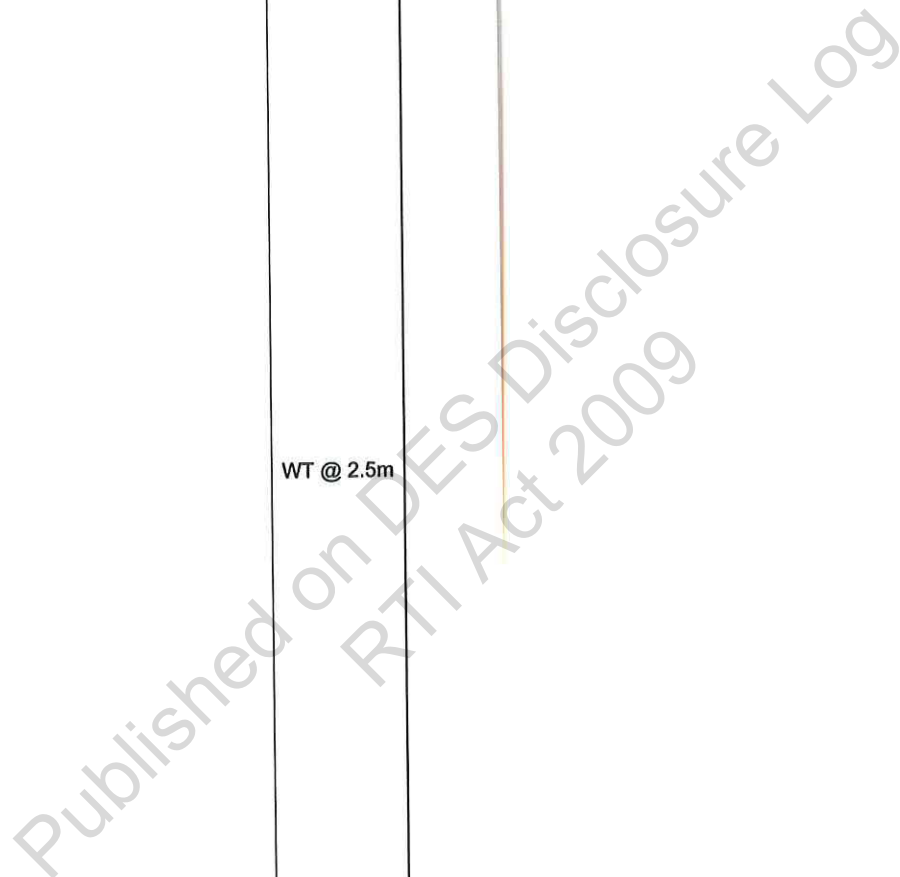


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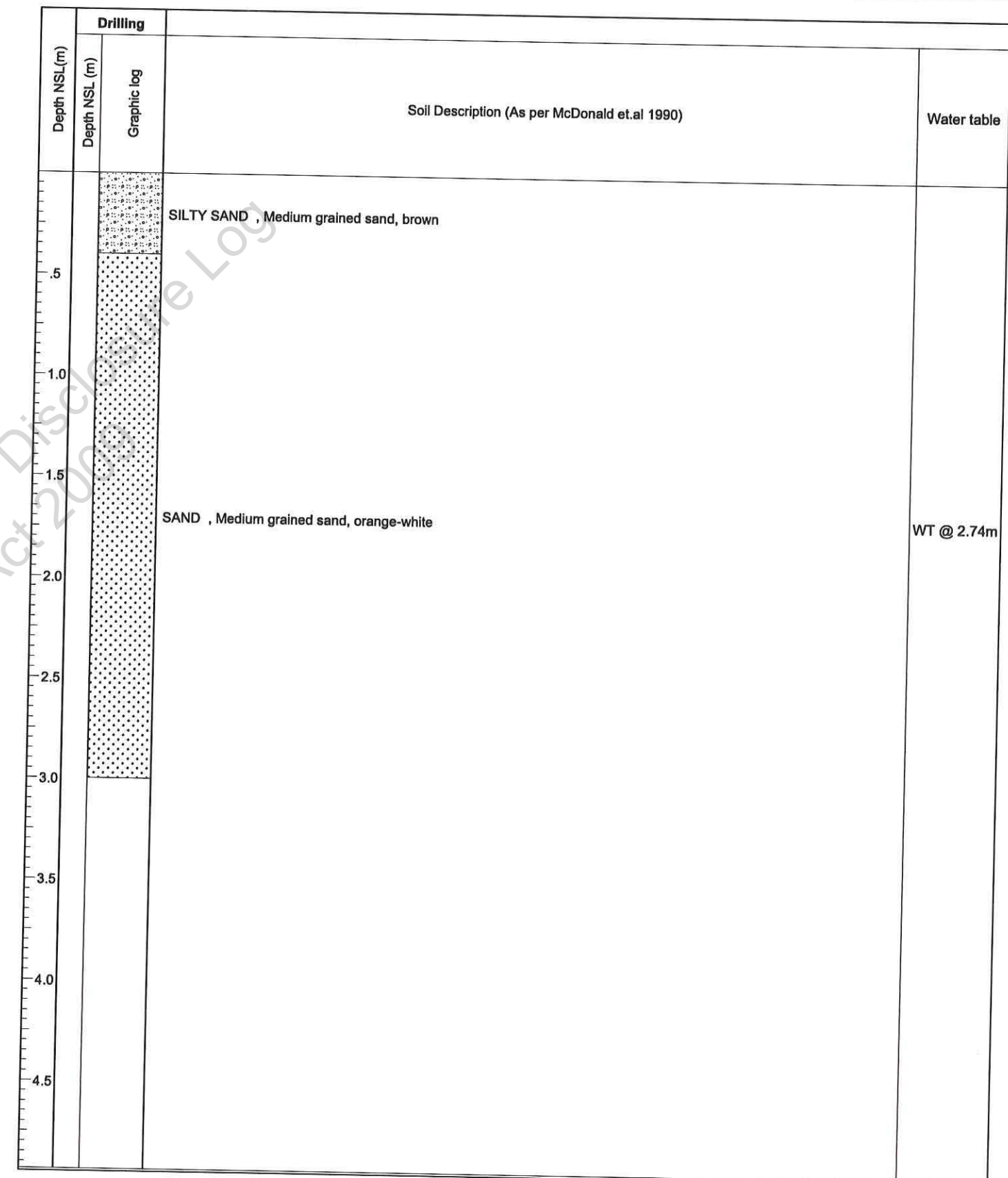
Borehole: GW3
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 2.8
Logged by: 6) Personal information
Drilled by: Cardno Bowler Geotechnical
Drill date: 19/10/2010



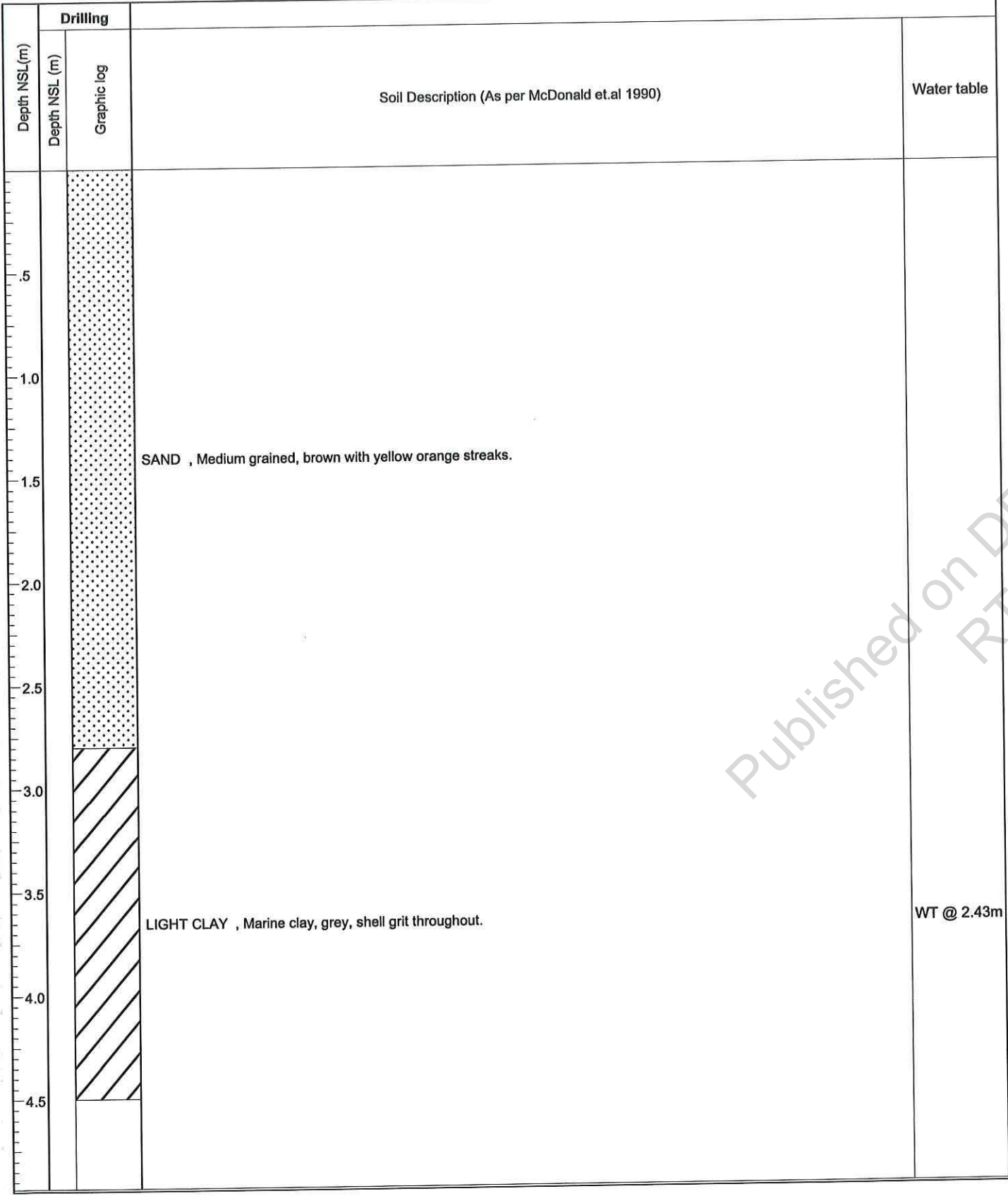
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Borehole: GW5
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 3
Logged by: 6 Personal information
Drilled by: Cardno Bowler Geotechnical
Drill date: 19/10/2010

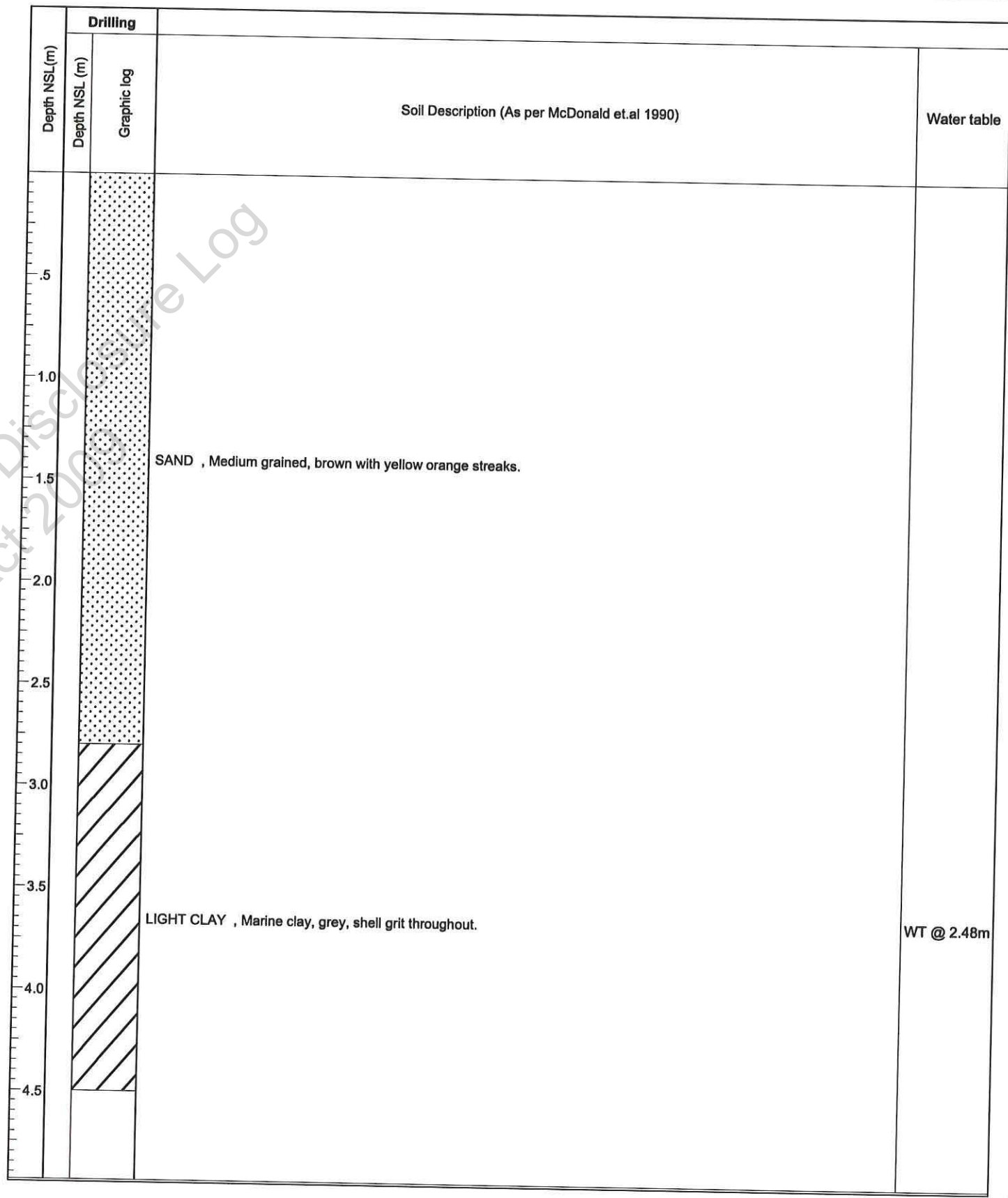


Borehole: GW6
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.5
Logged by: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 13/11/2010

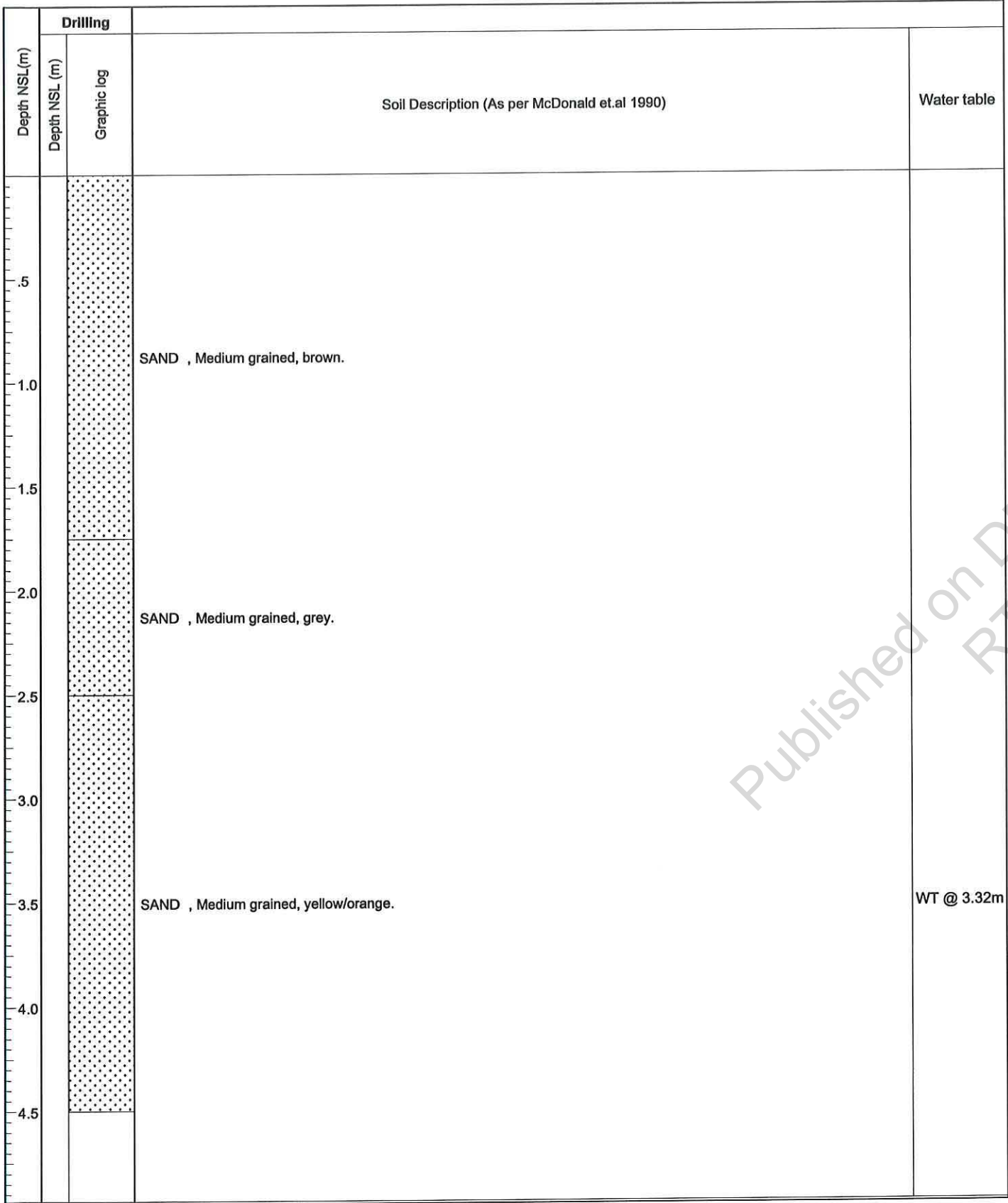


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Borehole: GW7
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.5
Logged by: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 13/11/2010

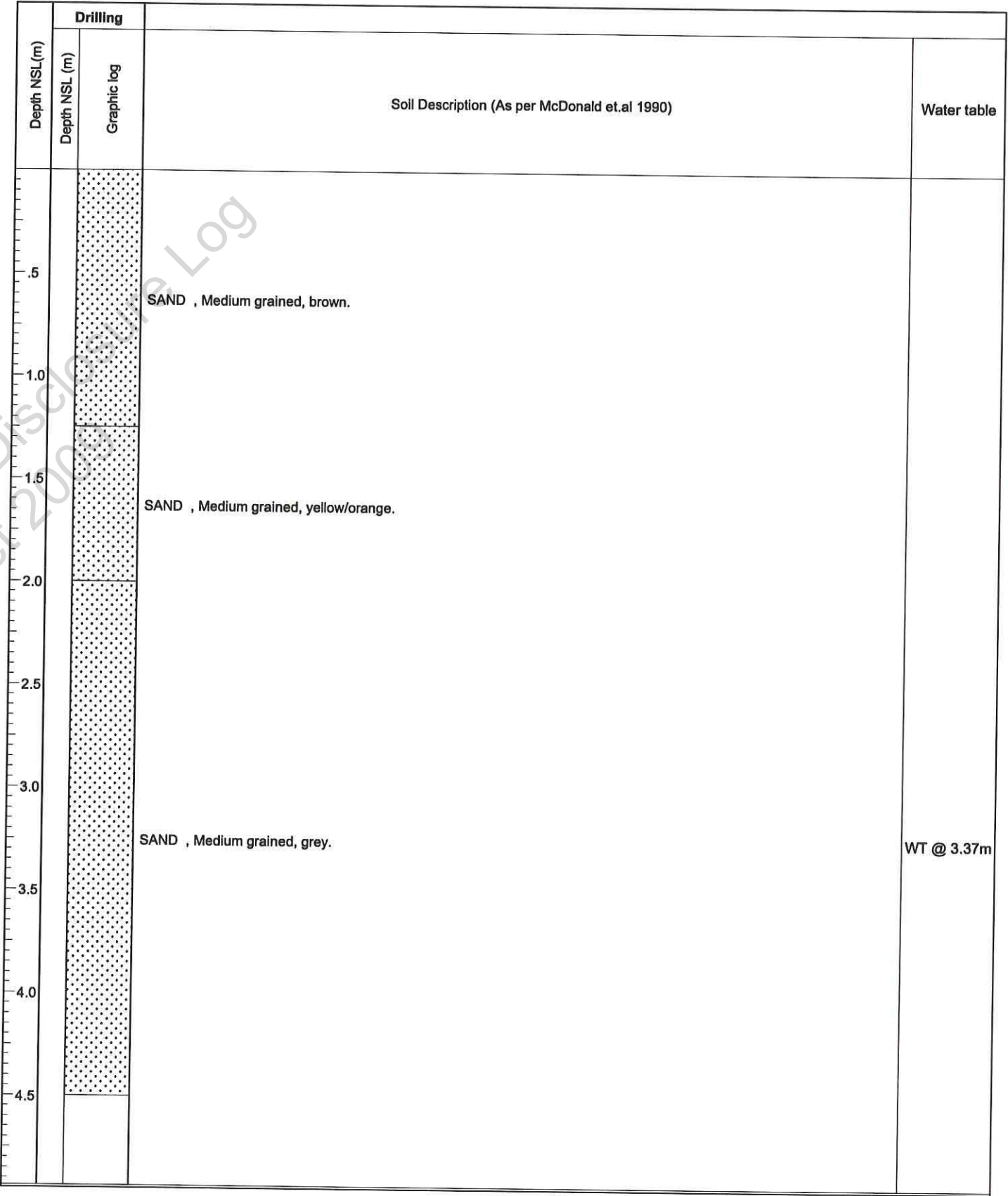


Borehole: GW8
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.5
Signed by: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 13/11/2010

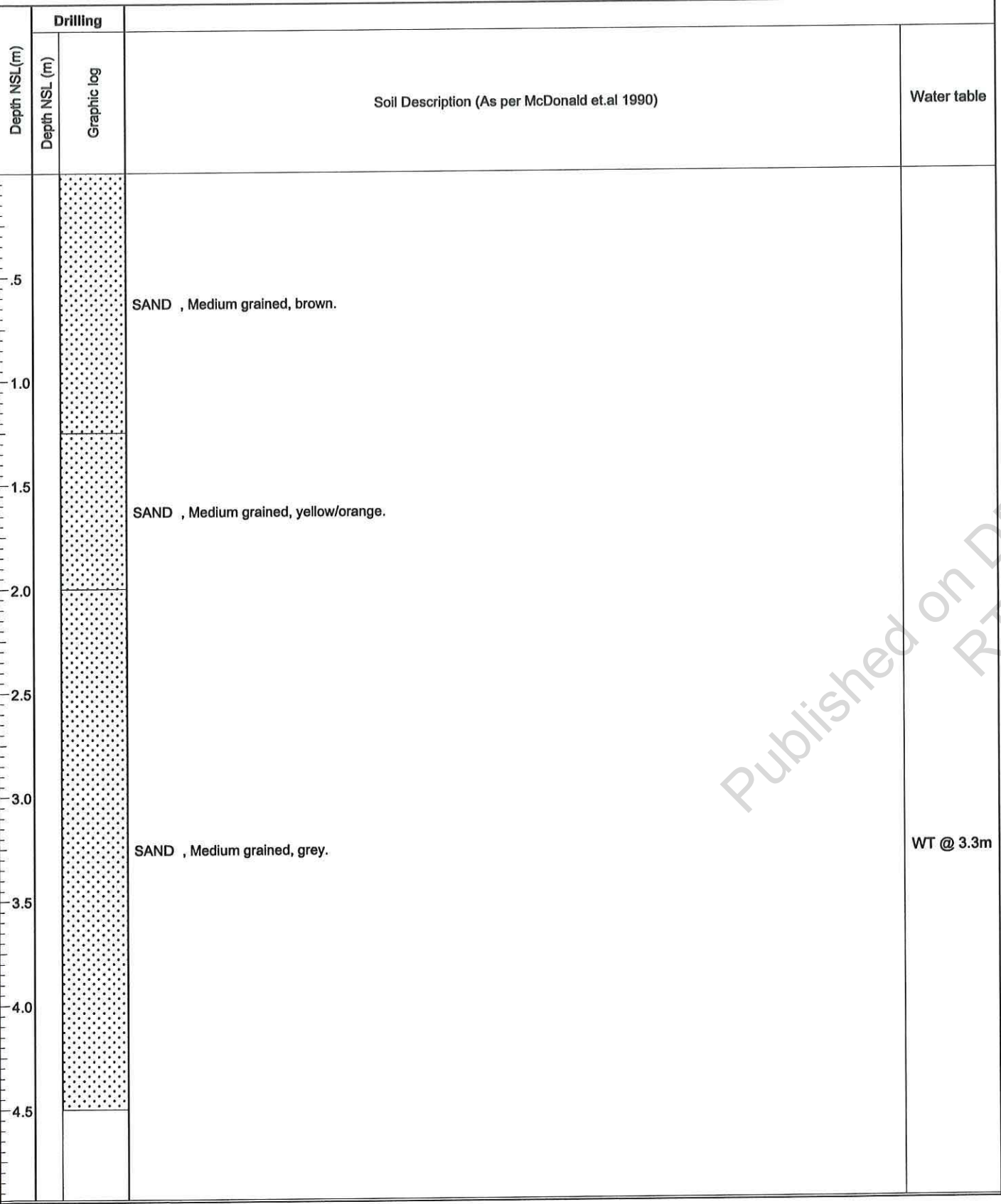


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Borehole: GW9
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.5
Logged by: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 13/11/2010



Borehole: GW10
Project: 10527
Client: Shoal Point Bay Development
Depth (m): 4.5
Log type: Personal information
Drilled by: Aqua Drilling Pty Ltd
Drill date: 12/11/2010



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14. Appendix 6 - Historical aerial photographs

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Release



Q503-86

MACKAY

RUN B

12.8.1953

152.21 M/M

13 000 FT

13000 FT. B. & D. LTD.

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RTI A 2000

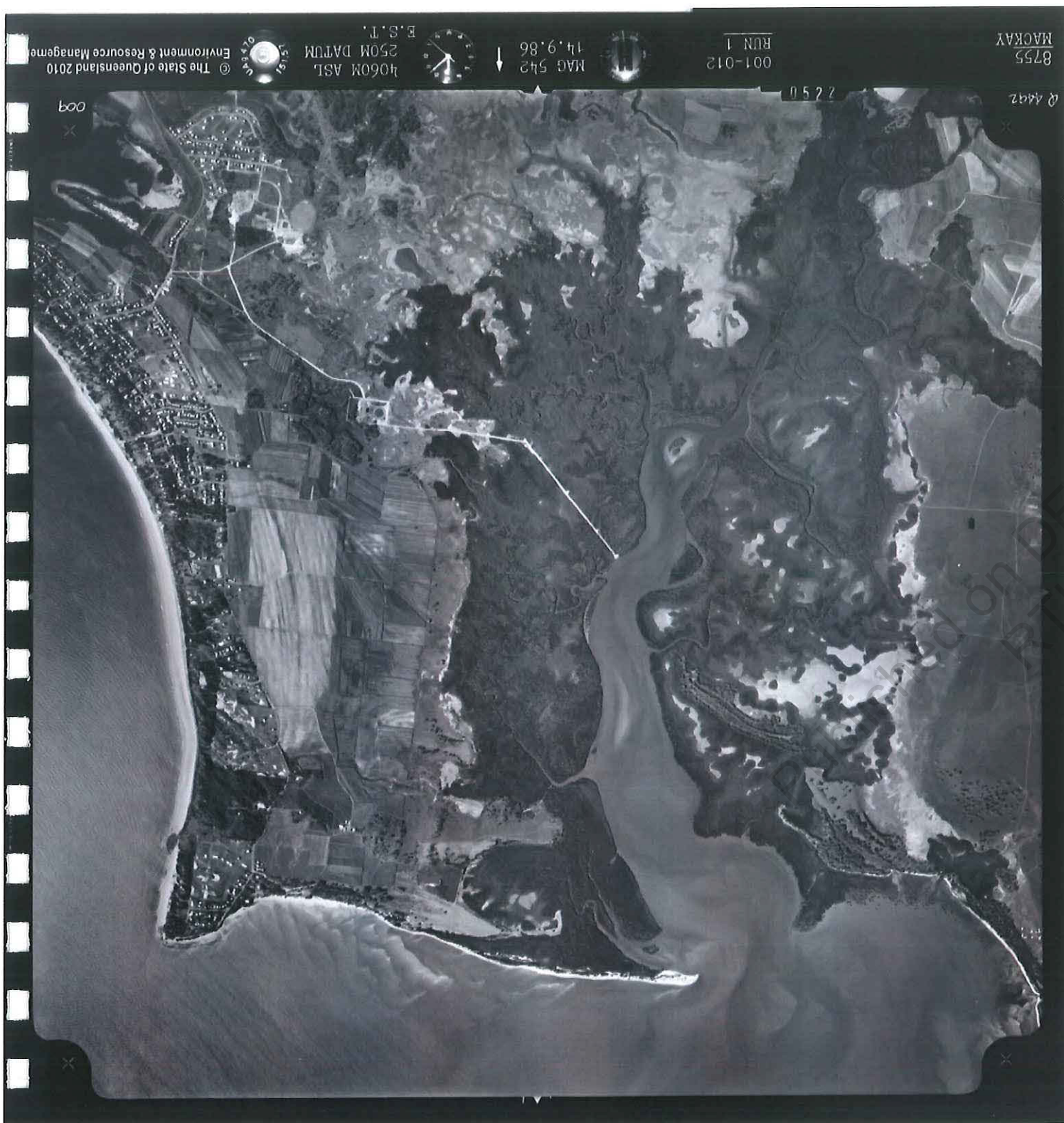


Q1270 -

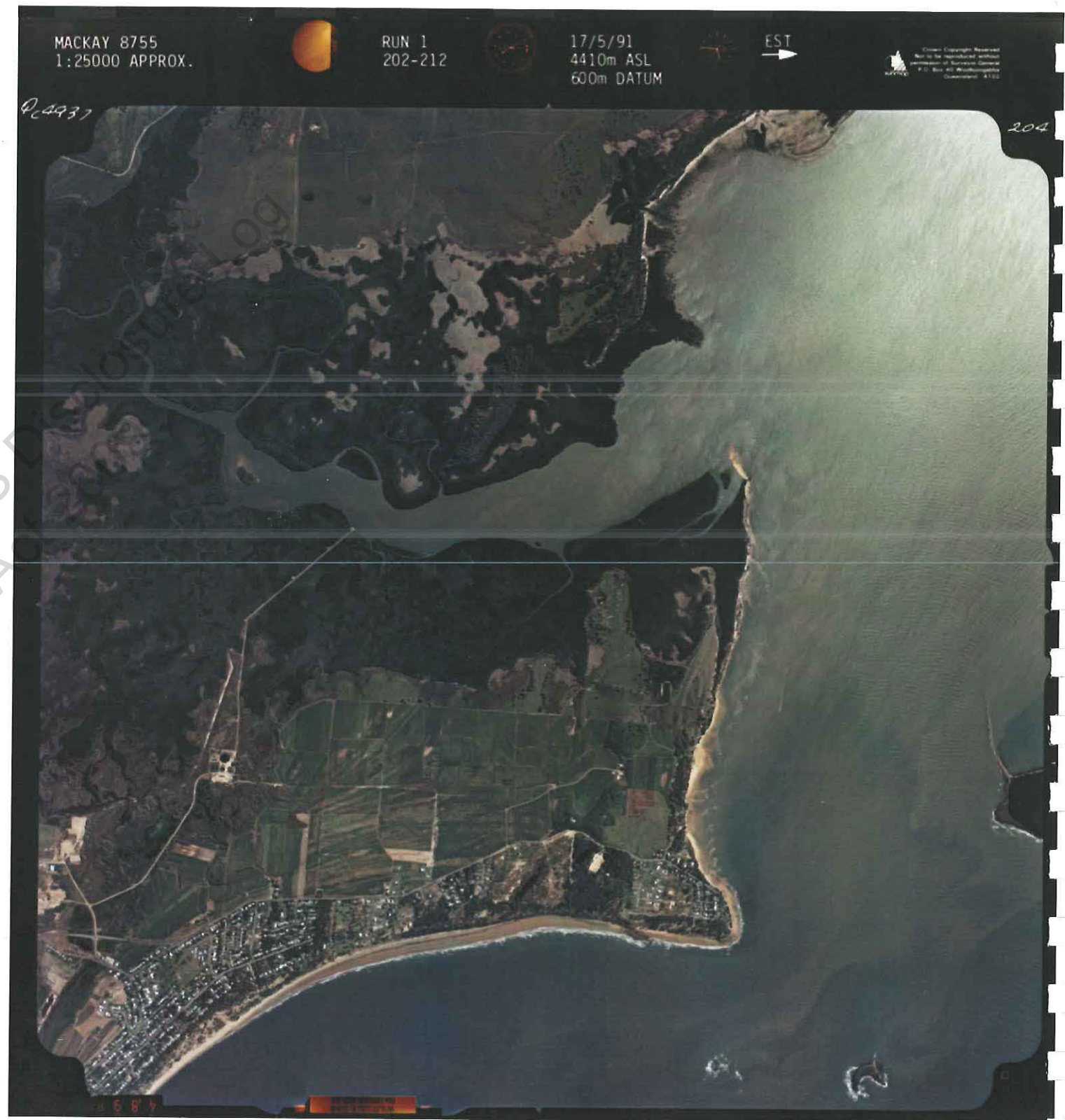
MACKAY COAST TIE 1 4.8.82 MAG. 295 LENS 120 152.09M/M 12.000

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107



Accessed on 08/08/2009
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Act 2009





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100 200 300 400 500 600
metres

SCALE
1:12 500

ORIENTATION
NORTH

SOURCES

Image supplied by DERM



**+GILBERT
SUTHERLAND**

CAIRNS
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PO Box 4116
Robina Q4230
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BRISBANE
Gilbert and Sutherland Pty Ltd
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AGRICULTURE WATER ENVIRONMENT

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
AERIAL PHOTOGRAPHY 2009
MACKAY RUN NO. 74
FRAME NO. 2433

DATE 19/11/2010	DRAWN KT
SCALE 1:12 500	CHECKED
PROJECT NO 10927	DRAWING NO REVISION

100 200 300 400 500 600
metres

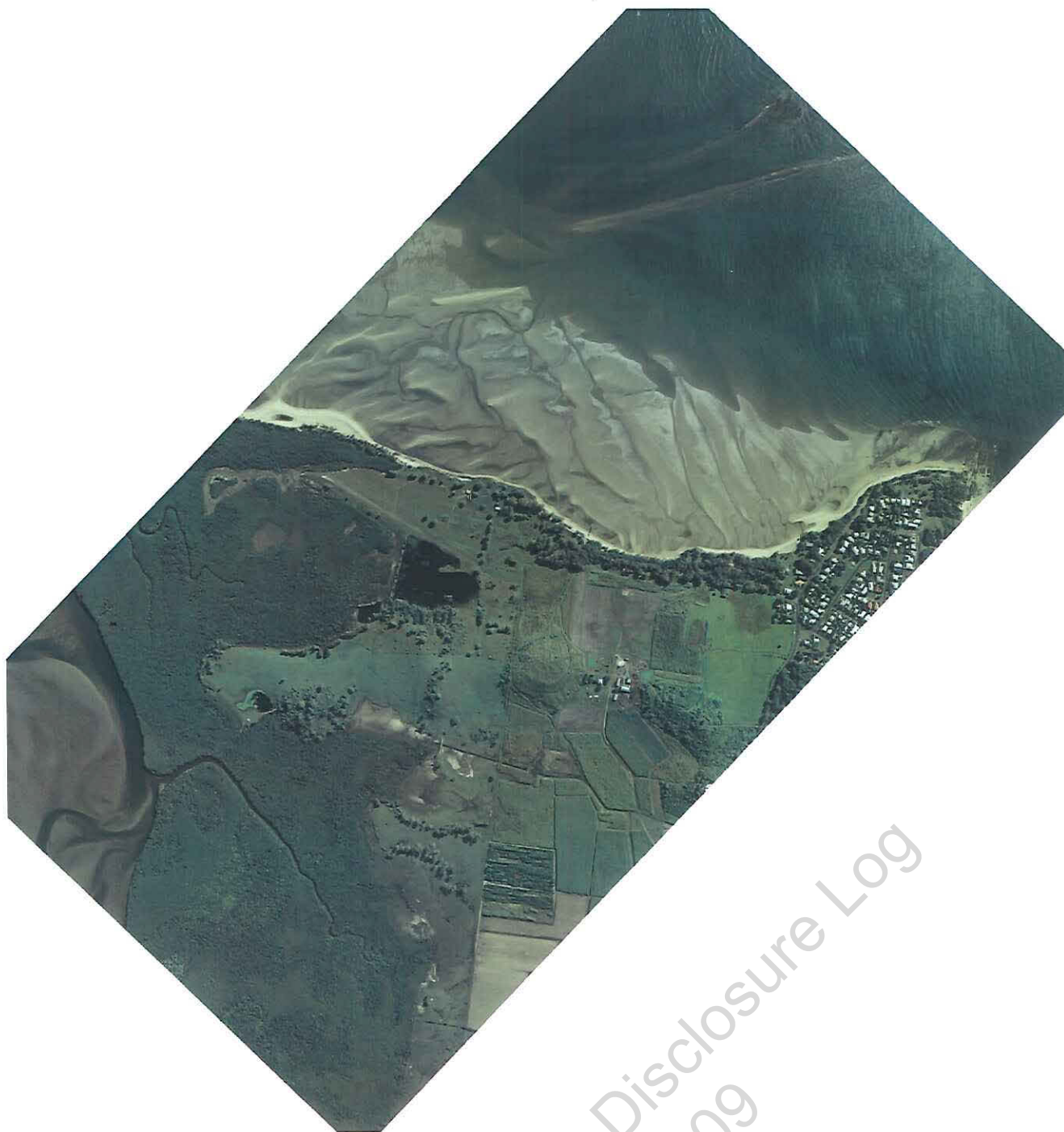
SCALE
1:12 500

ORIENTATION
NORTH

SOURCES

Image supplied by DERM

**+GILBERT
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AGRICULTURE WATER ENVIRONMENT

PROJECT
SHOAL POINT MACKAY
STAGE 2 INVESTIGATION

CLIENT
SHOAL POINT BAY
DEVELOPMENTS

DRAWING
AERIAL PHOTOGRAPHY 2009
MACKAY RUN NO. 74
FRAME NO. 2465

DATE 19/11/2010	DRAWN KT
SCALE 1:12 500	CHECKED -
PROJECT NO 10027	DRAWING NO -
	REVISION -

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RTI Act 2009

15. Appendix 7 - Statutory declaration

(INVESTIGATOR AND REPORT PREPARER)

Address of Site Investigated:	Hodges Road, Shoal Point Mackay
Real Property Description:	Lot 4 on RP817122
Title of Report:	Stage 1 & Stage 2 Investigation Lot 4 on RP817122, Hodges Road, Shoal Point.

sch4p4(6) Personal information of Gilbert & Sutherland Pty Ltd, PO Box 4115 Robina Queensland 4230, do solemnly and sincerely declare that;

- I was the investigator and author of the report described above;
- I am a member of the Environment Institute of Australia and my qualifications and experience as previously presented to the Department of Environment and Resource Management are relevant to this investigation;
- I have not knowingly included any false, misleading or incomplete information in the report;
- I have not knowingly failed to reveal any relevant information or document to any administering authority; and

I certify that:

- The report addresses the relevant matters for the investigation and is factually correct; and
- The opinions expressed in it are honestly and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true and by the virtue of the provisions of the *Oaths Act 1867*.

Signature

sch4p4(6) Personal information

Name:

sch4p4(6) Personal information

Declared at Robina the 27th day of November 2010 .

Before me

sch4p4(6) Personal information

sch4p4(6) Personal information

sch4p4(6) Personal information

Witness (Solicitor/Commissioner for Declarations)

Note:
Stamped original
received 2/12/10
(at front of file).

sch4p4(6) Personal information

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16. Appendix 8 - Correspondence from Mackay Regional Council

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RTI Act 2009

Published on DES Disclosure Log
RTI Act 2009

Release

YOUR REF 12116SUN
OUR REF DA-2009-462

RECEIVED
11 OCT 2010
BY: 12116SUN

FAXED
07/10/10

6 October 2010

sch4p4(6) Personal information

Planning Officer
WS Group
PO Box 158
Mackay, QLD 4740

**DA-2010-462 TRANSFER OF FORESHORE PARK – LOT 4 ON RP817122,
HODGES ROAD, SHOAL POINT**

sch4p4(6) Personal information

Thank you for your correspondence dated 1 October 2010 requesting confirmation of Mackay Regional Council's acceptance as Trustee of a portion of Lot 4 on RP817122 titled 'Foreshore Park' as shown on plan of development (Drawing 12116P05) for DA-2010-462 prior to its removal from the Environmental Management Register (EMR).

It is noted that DERM requires voluntary contribution of proposed Lot 901, 902, 903, 904, 905 as shown on Drawing 12116P05 to the State as a Reserve for Beach Protection and Coastal Management Purposes, under the trusteeship of Mackay Regional Council.

As you know it is Council's policy position that land set aside for Council's control is transferred as a freehold lot. If the land was coming to Council in freehold, Council may be flexible in regard to whether it remains on the EMR.

Council is however not interested in being the Trustee of the land in question regardless of whether it is on the EMR.

If you have any further questions, please do not hesitate to contact Sarah Elding Principal Planner on (07) 4961 9105.

Yours sincerely,

sch4p4(6) Personal information

Peter Cardin
Director Development Services

17. Appendix 9 - Site Management Plan

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RTI Act 2009

DRAFT SITE MANAGEMENT PLAN

LOT: 4 on RP817122

DERM FILE REF:

PRINTED:

DATE OF EFFECT:

RPD: Part of Lot 4 on RP817122, inclusive of metes and bounds commencing at the north east corner of the allotment and traversing clockwise:

Bearing	Distance (m)
187° 27',	90.63
319° 47'	47.04
302° 22'	19.26
288° 36' 30"	90.83
275° 01' 30"	47.32
280° 15' 30"	90.73
293° 30'	98.10
291° 05' 30"	10.09
295° 34'	15.32
286° 29' 30"	26.15
261° 42'	32.22
358° 21' 30"	25.67
89° 00'	271.03
116° 00'	201.15

Closing at the point of commencement and containing an area of 3.119ha. The defined area is shown in Figure 1.

1.0 SUMMARY OF CONTAMINATION

This SMP affects the area of the allotment defined by the metes and bounds, hereafter referred to as 'the site'. Historical records show the site has been used for livestock grazing since the mid 1960's. A livestock dip was constructed in 1978 in the north of the site and was used until the early 1990's and demolished in 2009.

The site is to be redeveloped as a foreshore park and used for recreational and coastal buffer purposes.

Groundwater contamination has been identified within a single monitoring well (GW4) installed to the south east of the former dip location.

The maximum level of groundwater contamination identified on the site was as follows:

Analyte	Maximum Concentration (µg/L)
Arsenic (As)	330 (in GW4)

Groundwater monitoring well locations in relation to the former livestock dip location are shown on Figure 1.

No soil contamination in excess of the Health based Investigation Levels for Standard Residential or Park was identified on the site.

2.0 OBJECTIVES OF THE SMP

The purpose of this Site Management Plan (SMP) is to manage the existing contamination on the site in a manner that protects human health and the environment.

3.0 ACHIEVEMENT AND MAINTENANCE OF OBJECTIVES

3.1 Responsibility. The owner and occupier of the land (as defined under the *Environmental Protection Act 1994*) is to ensure that this SMP and any variations to the plan approved or required by the Administering Authority are complied with. The obligations and conditions set out in this SMP bind the owner, from time to time, of the land.

3.2 Third Party Reviewer (TPR) A Third Party Reviewer (TPR) approved by DERM and operating in accordance with DERM's Terms of Reference for TPR (February 2008) must be appointed for any future site assessment and remediation activities.

3.3 Site Use. Providing the conditions of this approved SMP are complied with, the subject land is suitable for park and outdoor recreational use. Groundwater extraction wells or use of the groundwater within the managed area for irrigation or drinking purposes is not permitted.

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

3.5 Soil Excavation and Removal. Any soil to be removed from the site must be assessed for contaminants of concern to determine if the material is contaminated and to identify appropriate management and disposal/re-use options. Representative sampling and analysis of soils from site excavations must be managed by a suitably qualified and experienced person in accordance with Section 381 of the *Environmental Protection Act 1994* (EP Act). Contaminated soil must not be removed off-site without a disposal permit in accordance with Section 424 of the EP Act.

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

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

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

3.8 Workplace Health and Safety. A Workplace Health and Safety Plan (WH&S plan), which conforms to the requirements of the *Workplace Health and Safety Act 1995*, is to be developed for any site excavation works at depths greater than 3.0 metres. The WH&S plan must address the site-specific contaminants of concern identified in Section 1.0 of this SMP.

3.9 Underground Services. New underground services in the area defined by the metes and bounds must only be constructed in either uncontaminated material or in trenches in which the services are surrounded by a minimum of 0.3m of uncontaminated fill for minor services (<100mm in diameter), and 0.5m of uncontaminated fill for services greater than 100mm in diameter.

3.10 Monitoring Wells. The existing network of monitoring wells, shown on the attached figure 1, shall be maintained in a good operating condition at all times. In the event of damage to the monitoring wells, the monitoring well will be reinstated. Decommissioning of monitoring wells must be approved by the TPR.

4.0 MONITORING AND REPORTING

Annual monitoring of groundwater quality for arsenic is to be undertaken for a two-year period from the commencement of operational works on the site. A groundwater monitoring report is to be prepared at the conclusion of the two-year monitoring program and is to be submitted to the Third Party Reviewer and Queensland Department of Environment and Resource Management (DERM) for review and consideration. At the conclusion of two-year period, the monitoring program will be reviewed and may be altered in consultation with DERM.

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

This SMP makes reference to a plan attachment that is available from the Administering Authority if required.



LEGEND

- ◆ GW# Groundwater piezometer locations
- - - Inferred extent of arsenic contamination in groundwater
- Site boundary
- Managed area (metes and bounds)
- Managed area boundary

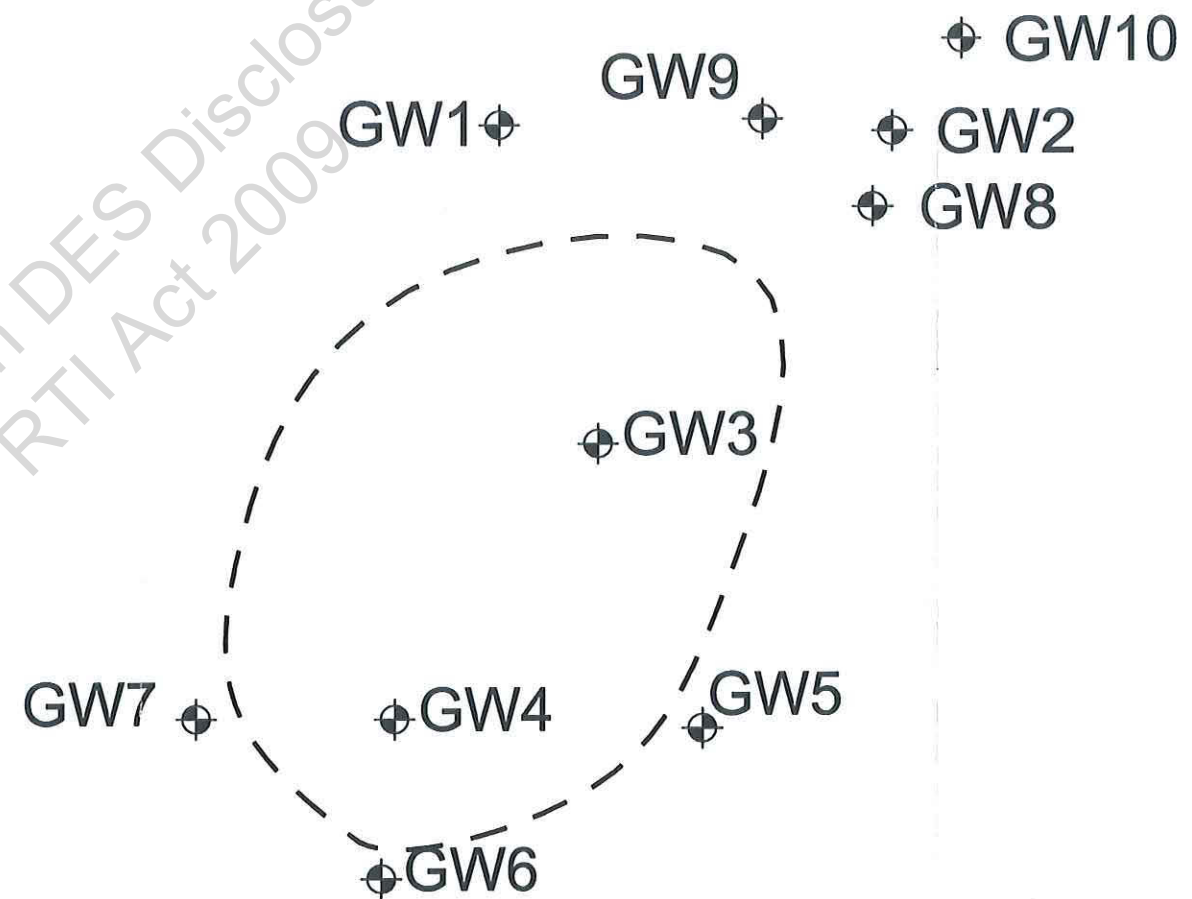
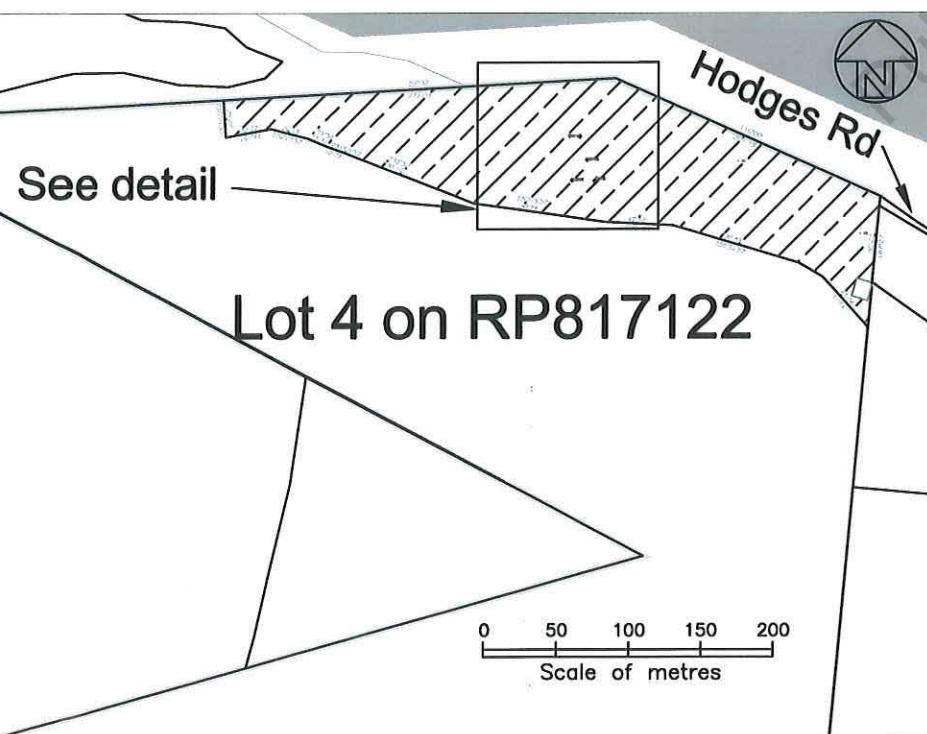


FIGURE 1
SITE MANAGEMENT PLAN FOR
ARSENIC CONTAMINATION
IN GROUNDWATER
ON LOT 4 ON RP817122
SHOAL POINT MACKAY

