EPA Con. Land

BNE2006/4948 JOINT SITES
IPA 927 PT2
BNE3112

Decision Notice Details
(Section 3.5.15 of the Integrated Planning Act 1997)

INTRODUCTION:
The decision to approve the application subject to conditions was made by the Senior Town Planner as the delegate appointed by the Council to determine the application.

APPLICANT DETAILS:
Jensen Bowers Group Consultants Pty Ltd
Attn: 73(2)Irrelevant
P O Box 799
SPRING HILL QLD 4004

ENVIRONMENTAL PROTECTION AGENCY
23 MAR 2006
BNE 2006/3791

SITE:
Address of Site:
45 Paringa Road, Murarrie
Real Property Description:
Lot 294 on SP135357, Parish of Bulimba (Proposed Lot 1)
Area Classification:
General Industry Area
Name of Owner:
Gale Developments Pty Ltd & Snowday Pty Ltd
Name of Ward:
Doboy

CONTAMINATED LAND SECTION
23 MAR 2006

73(2)Irrelevant

73(2)

18/4/06

APPLICATION:
Aspects of development and development approvals sought:
Carrying out Building Work - Preliminary Approval
Material Change of Use - Development Permit
Description of Proposal:
Industry/Warehouse
Council File Reference:
DRS/USE/H05-920933
Lodgement Date:
23 May 2005

TYPE OF APPROVAL:
Carrying out Building Work - Preliminary Approval
Material Change of Use - Development Permit

THE CURRENCY PERIOD:
The standard currency periods stated in section 3.5.21 of the *Integrated Planning Act 1997* apply to each aspect of development in this approval.

FURTHER DEVELOPMENT PERMITS:
Development permits(s) for the following are required before the development can be carried out:

- Carrying Out Building Work- Development Permit

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- Please note that this Preliminary Approval for Carrying Out Building Work does not include assessment against the Building Code of Australia.

REFERRAL AGENCIES:
The following were Advice Agencies for this application:

Department of Natural Resources and Mines
PO Box 864
Ipswich QLD 4305

The following were Concurrence Agencies for this application:

Environmental Protection Agency
Contaminated Land Unit
GPO Box 2771
Brisbane QLD 4001

Energex Limited
GPO Box 1461
Brisbane QLD 4001

The Council did not refer this application to any other State Agency.

CONDITIONS:
This approval is subject to conditions that are included in the attached approval package.

SUBMISSIONS
There were no submitters for this application.

WHEN THIS DEVELOPMENT TAKES EFFECT:
This development approval takes effect –

- From the time the decision notice is given, if there is no submitter and the applicant does not appeal the decision to the Court.

OR

- Subject to the decision of the Court, when the appeal is finally decided, if an appeal is made to the Court.

This approval will lapse unless substantially started within the above stated currency periods (refer to sections 3.5.19 and 3.5.20 of the *Integrated Planning Act 1997* for further details).

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BRISBANE CITY COUNCIL'S APPROVAL PACKAGE

APPLICATION DETAILS

This package relates to the application detailed below:

Address of site:	45 PARINGA ROAD, MURARRIE
Real property description of site:	SP135357/L294 BULIMBA
Aspects of development and type of approval:	1. Material Change of Use and Carrying Out Building Work (Development Permit and Preliminary Approval) - Industry/Warehouse (Proposed Lot1)
Description of proposal:	Industry/Warehouse (Proposed Lot 1)
Purpose:	Industry/Warehouse (Proposed Lot 1)
Council File Reference:	DRS/USE/H05-920933
Package status:	APPROVED - Version 1 (21st of March, 2006 03:51:04 PM)
Package generated on:	21st of March, 2006

PROJECT TEAM

The assessment of this application has been undertaken by:

ANDREW DAVIS
ASSESSMENT MANAGER
Development Assessment Team
EAST BRISBANE
ADMINISTRATION CENTRE
Development and Regulatory Services
Phone: (07) 340 35590

KHANH DINH
Engineering Officer
Development Assessment Team
EAST BRISBANE
ADMINISTRATION CENTRE
Development and Regulatory Services
Phone: (07) 3403 5519

DAVID WARD
Pollution Officer
Development Assessment Team
EAST BRISBANE
ADMINISTRATION CENTRE
Development and Regulatory Services
Phone: (07) 3403 6771

DRAWINGS AND DOCUMENTS

The term 'drawings and documents', or similar expressions, means:

Drawing or Document	Number	Plan Date
Site Plan	MCU-01C	01-MAR-2006 (Received)
Mezzanine Plan	MCU-02	23-MAY-2005 (Received)
Roof Plan	MCU-03	23-MAY-2005 (Received)
North West & North Elevations	MCU-04	23-MAY-2005 (Received)
East Elevation & Section	MCU-05	23-MAY-2005 (Received)
Elevations (Unit 1)	MCU-06	28-FEB-2005 (Received)
Energex Letter	DOCUMENT 1	14-MAR-2006 (Received)
Environmental Protection Agency Letter	DOCUMENT 2	14-MAR-2006 (Received)

HIGHLIGHTS

Due to their importance, the following conditions have been highlighted in **bold** in this document: **5,6**

ADVICE

Please see the attached document for any advices.

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Section to Which These Conditions Relate: **1. Material Change of Use and Carrying Out Building Work (Development Permit and Preliminary Approval)**

Section Name: **Industry/Warehouse (Proposed Lot1)**

GENERAL/PLANNING REQUIREMENTS

	TIMING
1) Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s). *GUIDELINE* *This condition refers to the approved plans, drawings and documents to which the approval relates and is the primary means of defining the extent of the approval. Approved plans, drawings and documents are stamped PLANS and DOCUMENTS referred to in the APPROVAL and are dated to reflect the date of approval of the application by Council's Delegate.*	While development is occurring on site and then to be maintained
2) Complete all building work associated with this development approval, including work required by any of the following conditions. Such building work is to be carried out generally in accordance with the approved plans, drawing(s), and/or documents and, where the building work is assessable development, in accordance with a current development permit. *GUIDELINE* *This condition is imposed to ensure all building work associated with the use are in place before the use commences. It is not appropriate that the site be used without such work being completed. Please note that the work referred to in this condition involves operational work and may therefore constitute 'assessable development'. The Council informs you there fore that this condition does not authorise assessable development to occur and a development permit may therefore be necessary. Please refer to the Council's information sheets. For any enquiries about this condition, please contact the Assessment Manager.*	Prior to the commencement of the use
3) A legible copy of the approved drawings and documents bearing "Council Approval" and the Development Approval Conditions package is to be available on site at all times during construction and earthworks. *GUIDELINE* *This condition is imposed to ensure compliance with the development conditions of approval. The copy of the conditions and plans should be located in any site management office or with the site foreman. Any copies of conditions or plans that are illegible shall be deemed to be non compliance with this condition of approval.*	As indicated

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4) Provide a staff recreational area on the site which is adequately protected from the weather, contain seating, tables and rubbish bins. *GUIDELINE* *This condition is imposed so as to ensure that appropriate on-site recreation areas are provided for staff in accordance with Acceptable Solution 5.1 of the Industrial Design Code of City Plan 2000.*	Prior to the commencement of the use & then to be maintained
5) No goods are to be sold, displayed or offered for sale from the site to the general public. *GUIDELINE* *This condition is imposed when the use of the site does not involve approval for the purpose of a Shop. For any enquiries about this condition, please contact the Assessment Manager. Non-compliance with this condition is likely to mean that there has been a 'material change of use' on the site. Such development is likely to be assessable development.*	**To be maintained**
6) Limit the area of any office and show room to the area shown on the approved plan(s) of layout. These areas are to remain at all times ancillary and subordinate to the use of the building/tenancies for Industry. *GUIDELINE* *This condition is imposed to ensure that any office and show room provided as part of the approved plans use remains ancillary to that purpose. For any enquiries about this condition, please contact the Assessment Manager. Non-compliance with this condition is likely to mean that there has been a 'Material Change of Use' on the site. Such development is likely to be assessable development.*	**To be maintained**

MONETARY CONTRIBUTIONS & SECURITIES

	TIMING
7) Pay to Council any outstanding charges or expenses levied by the Council over the subject land. *GUIDELINE* *This condition is imposed to ensure that there are no outstanding charges existing over the subject site, including outstanding rates. If there are out standing monies, they must be paid prior to commencement of the use.*	Prior to the commencement of the use
8) Pay to Council a monetary contribution towards the provision of parkland at the rate applicable at the time of payment. The amount is currently calculated at $1.08 per square metre of gross floor area. The required contribution currently totals $1421.30. This park contribution is the current rate for the 2005/2006 financial year. *GUIDELINE* *This condition is imposed when a monetary contribution for parkland is required. The contribution is calculated in accordance with Planning Scheme Policy 1 - Development Contributions for Parks and Recreational Facilities Arising from Subdivision of Land and from Material Change of Use or Development of Land.*	Prior to the commencement of the use or prior to endorsement of a community management statement, whichever is sooner

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LANDSCAPE & OPEN SPACE

	TIMING
9) Design and implement landscaping in accordance with the relevant City Plan Codes and best trade practice. (a) Design and implement landscaping in accordance with the relevant City Plan Codes and best trade practice. (b) Construct landscaping in accordance with the approved plan(s); the relevant City Plan Codes; and best trade practice. On completion provide written certification from: • A qualified and experienced Landscape Architect/Designer that the landscaping complies with the design requirements of the Codes; and • A licensed and experienced Landscape Contractor that the completed landscaping complies with the design specifications, Council Standards and best trade practice.	Prior to the commencement of the use & then to be maintained
(c) Submit a copy of the as-constructed design drawings together the completed Compliance Certificate-Landscaping. *GUIDELINE* *This condition is imposed to ensure the external areas of the proposed development make a positive contribution to the local character of the area, streetscape and on-site amenity. Compliance Certificate (Form # CC2057) is available from any of the Regional Business Centres or the Brisbane Administration Centre, or contact the Landscape Architect, Development Assessment.*	Prior to the commencement of the use

POLLUTION

	TIMING
10) i) Stormwater runoff from the operational phase of the development must be treated by a stormwater quality improvement device before discharge to the stormwater system. The Stormwater Quality Improvement Device (SQID) must remove potential pollutants such as silt, sediment, hydrocarbons and litter. This device must be capable of treating flows during at least a Q3 month storm event and have a resultant water quality meeting the criteria of Brisbane City Councils Water Quality Guidelines. ii) Submit certification from an appropriately qualified person to the Team Leader Licensing and Compliance - East that a stormwater quality improvement device/s has been provided on site. iii) The stormwater quality improvement device must be maintained and inspected in accordance with the manufactures specifications and timeframes or when required by site specific circumstances which ever is the sooner. *GUIDELINE* *This condition is imposed where stormwater quality may me affected as a result of the development.*	Prior to the commencement of the use & then to be maintained

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	TIMING
11) Minimise on-site erosion and the release of sediment or sediment-laden stormwater from the site at all times. (a) Prepare an Erosion and Sediment Control (ESC) Management Plan for the site in accordance with Council's *Best Practice Guidelines for the Control of Stormwater Pollution from Building Sites* and accompanying fact sheets, Brisbane City Council and Gold Coast City Council, 2000 (or later version); (b) Implement and maintain on-site The ESC Management Plan for the duration of the operational or building works, and until exposed soil areas are permanently stabilised (e.g. turfed, concreted). The documented ESC Management Plan must be available on-site for inspection by Council Officers during these works. *GUIDELINE* *This condition is utilised where the potential for soil erosion, sediment loss from the site, and environmental impact on waterways is considered to be medium to low. Whilst not requiring submission of detailed information as defined in Council's "Erosion and Sediment Control Standard (Version 8 or later)", the ESC Management Plan must still satisfy the general requirements of this Standard (ie. minimise soil erosion and sediment loss from the site at all times during the works). No formal ESC Program is to be submitted for Council assessment however a copy of the ESC Management Plan is required on-site. Non-compliance may result in prosecution under Environmental Legislation. For any enquiries regarding this condition please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to site works commencing (ie. any land-disturbing development) While site works (eg. operational works, building works) are occurring and until exposed soil areas are permanently stabilised (eg. turfed, concreted)
12) Undertake the works on the site in accordance with an earthworks plan. (a) The plans are to include:- • Maintenance of access roads to and from the site such that they remain free of all fill material and are cleaned as necessary; • Preservation of all drainage structures from the effects of structural loading generated by the earthworks; and • Protection of adjoining properties and roads from ponding or nuisance from stormwater. (b) All fill material placed on the site comprising only natural earth and rock and is to be free of contaminants (as defined by section 11 of the Environmental Protection Act 1994), noxious, hazardous, deleterious and organic materials. No demolition material is to be used. Suitable fill material is deemed to comply with the requirements of clause 4.3, AS 3798, Guidelines on Earthworks for Commerial and Residential Developments. *GUIDELINE* *This condition is imposed for applications when minor earthworks are proposed in conjunction with a development proposal. For any enquiries about this condition, please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to site works/building works commencing

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13) Any retaining walls greater than 1.0 metre in height are required to be structurally certified for design and construction by a Registered Professional Engineer Queensland (RPEQ). The certification is to include the stormwater drainage (surface and seepage water) associated with the wall ensuring that the water is directed to an acceptable lawful and legal point of discharge and does not cause any ponding, nuisance or disturbance to adjacent property owners. All retaining walls are to comply with the City Plan Filling and Excavation Code. *GUIDELINE* *This condition is intended to ensure that retaining walls associated with the development that are higher than 1 metre, are designed and constructed to industry standards and also, to ensure that no adverse impact is created by the structures on the surrounding properties. The retaining wall designer should note that timber retaining walls facing onto Council property (including the road reserve) will not be permitted. Retaining walls facing onto road reserve or parkland are to be contained entirely within the proposed development site, including the retaining wall's footings. Where retaining walls are proposed to be constructed between adjoining properties, it is also suggested that the use of timber sleeper retaining walls be restricted due to their limited life and the potential problems they may cause to future property owners. Where the combined height of the retaining wall and fence exceeds 2.0 metres, a Development Permit for Building Work will need to be granted. For any enquires about this condition please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to the commencement of the use

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14) Access, Internal Roadways, Parking & Servicing Areas. Design, construct, and thereafter maintain, rehabilitate or replace the following facilities in accordance with the approved plan(s) of layout. (a) The works are to be designed, constructed, maintained, rehabilitate or replaced in accordance with good engineering practices and the following documents: 1.0 *The Transport, Access, Parking, and Servicing Planning Scheme Policy (Appendix 2 of the City Plan)*; 2.0 *The Transport and Traffic Facilities Planning Scheme Policy (Appendix 2 of the City Plan)*; 3.0 *The Subdivision and Development Guidelines*; 4.0 *The Manual of Uniform Traffic Control Devices (MUTCD)*; 5.0 *Austroads*. (b) A Certificate of Completion (as per Appendix B of Part E of the *"Subdivision and Development Guidelines"*) certified by a Registered Professional Engineer of Queensland (RPEQ) is required as proof of compliance with this condition. A copy of the Certificate of Completion is to be forwarded to the Engineering Delegate, Development and Regulatory Services. NOTE: The design, design documentation, (including the laboratory test results) and the Certificate of Completion are to be forwarded to and retained by the current and future owner(s) as proof of initial compliance with this Condition of Development and to assist in the on-going compliance with this Condition of Development and any future auditing. (c) Access Driveway. • A 8.5 metre wide Type B2 permanent vehicular crossover to the Paringa frontage of the site; • ARMCO rail to be constructed minimum of 1m from the concrete encased water main. (d) Internal Paving. Construct an appropriate pavement of minimum Type A standard and surface (including associated drainage) to the area on which motor vehicles will be driven and/or parked; (e) Gradients. The grades of the driveways and paved areas are to conform to the requirements of the City Plan; (f) Manoeuvring. Paved areas, on site for the manoeuvring of a LRV and for the loading and unloading of the vehicle(s); (g) Parking. On site parking for 24 cars and for the loading and unloading of vehicles within the site. (h) Disability Parking. 1 of the above parking spaces are to be provided for people with disabilities; (i) Refuse storage/collection. An appropriate area for the storage and collection of refuse, including recyclables, in a position which is accessible to service vehicles on the site; (j) Signs and Lines. The internal paved areas are to be signed and delineated, in accordance with the approved layout and the MUTCD and Austroads; *GUIDELINE* *The Transport, Access, Parking and Servicing Planning Scheme Policy requires adequate on-site provision of parking, servicing and manoeuvring areas. This condition specifies the detailed design requirements to which development approval relates.*	Prior to the commencement of the use & then to be maintained

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15) Adjoining properties and roads are to be protected from ponding or nuisance from stormwater runoff. (a) Adjoining properties and roads are to be protected from ponding or nuisance from stormwater as a result of the proposed works; (b) Rectify all damage resulting from the ponding of stormwater or nuisance from discharge of stormwater from the site to adjacent properties. *GUIDELINE* *This condition is imposed to ensure that the developer is aware that they are responsible for all remedial works required as a result of any site works and, that they must protect neighbouring properties and roads from ponding and nuisance water from the proposed development. Where this rectification work involved drainage, plans are to be lodged showing the manner in which it is intended to rectify the site drainage. These plans must be approved by the Engineering Delegate. For any enquiries about this condition, please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to the commencement of the use While site/operational works/building works is occurring
16) Manage on-site drainage, ponding and discharge: (a) Design, construct, and thereafter maintain, rehabilitate or replace the following facilities in accordance with the approved plan(s) of layout. These works are to be designed, constructed and maintained in accordance with the following documents: 1.0 Stormwater Management Code of the City Plan; 2.0 Services Works and Infrustructure Code of the City Plan; 3.0 The Subdivision and Development Guidelines; 4.0 QUDM. (b) A Certificate of Completion (as per Chapter 3, Appendix B of Part E of the Subdivision and Development Guidelines) certified by a Registered Professional Engineer of Queensland (RPEQ) is required as proof of compliance with this condition. A copy of the Certificate of Completion is to be forwarded to the Engineering Delegate. NOTE: The design, design documentation, (including test results) and the Certificate of Completion are to be forwarded to and retained by the current and future owner(s) as proof of initial compliance with this Condition of Development and to assist in the on-going compliance with this Condition of Development and any future auditing. *GUIDELINE* *The purpose of this condition is to ensure that stormwater run off from the site and adjacent properties will be handled adequately. Disposal by gravity pipeline is required if practical. Use of pumps for disposal of stormwater may be approved, however details and plans would need to be approved by the Engineering Delegate. The applicant would need to show evidence to Council of having taken all reasonable steps to obtain written permission from adjacent property owners for construction of a gravity pipeline, and of this being unobtainable. For any enquiries about this condition, please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to the commencement of the use & then to be maintained

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17) Supply and install all service conduits and meet the cost of any alterations to public utility mains, existing mains, services or installations required in connection with the approved development. This includes the relocation of any fire hydrants and valves from within the limits of the development's vehicular footway crossings if applicable. (a) Complete the works required by this condition; (b) Submit "As Constructed" plans including an asset register (if required), approved by a registered Professional Engineer Queensland (RPEQ) (in accordance with Council's *"Subdivision and Development Guidelines"* and "Water and Sewerage Reticulation Standards") showing the works required by this condition. *GUIDELINE* *This condition is imposed when additions, alterations or extensions to service conduits, mains and other services are required as a result of the approved development. Applicants should liaise with the appropriate service authorities. For any enquiries about this condition, please contact the Engineering Delegate, Development and Regulatory Services (regarding advise on traffic signal conduits, stormwater, water supply and sewerage mains etc.) or the relevant public utility authorities (for advice on other services).*	Prior to the commencement of the use
18) Repair any damage to existing kerb and channel, footpath or roadway (including removal of concrete slurry from footways, roads, kerb and channel and stormwater gullies and drainlines) that may occur during any works carried in association with the approved development. *GUIDELINE* *The intention of this condition is to ensure that any works undertaken as part of the approved development do not damage Council assets or leave Council assets in an unacceptable and unsightly manner. For enquiries regarding this condition, please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to the commencement of the use
19) Obtain approval for an on-site private pump station and raising main from the Principal Officer, Plumbing Services. *GUIDELINE* *For enquiries regarding this condition, please contact the Engineering Delegate, Development and Regulatory Services.*	Prior to the commencement of the use

STANDARD ADVICE

	TIMING
20) All development involving an Environmentally Relevant Activity as defined by the Environmental Protection Regulation 1998 requires that an application for a material change of use for an environmentally relevant activity be submitted to the administering authority (Environmental Protection Agency or Brisbane City Council), in accordance with the Environment Protection Act 1994 and the Integrated Planning Act 1997. **Please note: The above information has been provided to the applicant as an advice only, and does not form part of the development approval conditions. This advice has been provided to the applicant to inform them of other obligations they may have to comply with (under state legislation or local laws) prior to their activity commencing.**	As indicated

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21) All development involving an Environmentally Relevant Activity as defined by the Environmental Protection Regulation 1998, requires that an application for registration for the environmentally relevant activity be submitted to the administering authority, Brisbane City Council, in accordance with the Environment Protection Act 1994. If the applicantion for registration is submitted to Brisbane City Council within 10 business days of the development approval, then no fee will be required for the registration. **Please note: The above information has been provided to the applicant as an advice only, and does not form part of the development approval conditions. This advice has been provided to the applicant to inform them of other obligations they may have to comply with (under state legislation or local laws) prior to their activity commencing.**	As indicated
22) The *Dangerous Goods Safety Management Regulation 2001* requires that occupiers of premises storing flammable and combustible liquids hold a licence. Licences are required for all storage greater than minor storage quantities. Minor storage limits are detailed in *Australian Standard AS1940 - The Storage and Handling of Flammable and Combustible Liquids.* It is the occupier's responsibility to obtain the required licence prior to commencement of the activity. Occupiers can be fined up to $1500 for failing to hold a current licence. Licences can be obtained from Brisbane City Council-Licensing & Compliance. To obtain a *Licence Information Kit* contact the call centre on 3403 8888. Plans and specifications must be lodged for approval by Council's Licensing & Compliance Section prior to building works commencing. Please note that building approvals do not include approval for storing flammable and combustible liquids. Council recommends that occupiers submit licence applications prior to obtaining building approvals. Otherwise, subsequent building modifications may be required to satisfy licence requirements. These can be expensive and will cause delays. **Please note: The above information has been provided to the applicant as an advice only, and does not form part of the development approval conditions. This advice has been provided to the applicant to inform them of other obligations they may have to comply with (under state legislation or local laws) prior to their activity commencing.**	As indicated
23) Brisbane City Council advise that the following concurrence agencies have imposed conditions contained in the following documents: • Energex Limited dated 29 August 2005 Reference: 710/52/67-02 L0774 (Document 1 Received 14 March 2006); and • Enivronmental Protection Agency dated 27 February 2006 Reference: App'n:927 Part 2 File No.:BNE3112 (Document 2 Received 28 February 2006)	As indicated

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24) The discharge of waste liquids to the sewerage system must be conducted in accordance with the conditions of a Trade Waste Approval. Permits can be obtained from Brisbane City Council's Trade Waste Section. For further information on permits please contact the call centre on 3403 8888. **Please note: The above information has been provided to the applicant as an advice only, and does not form part of the development approval conditions. This advice has been provided to the applicant to inform them of other obligations they may have to comply with (under state legislation or local laws) prior to their activity commencing.**	As indicated

**** End of Package ****

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RECEIVED
31 AUG 2005
BY:

29 August 2005

RECEIVED
14 MAR 2006

DOCUMENT 1

energex

Jensen Bowers
PO Box 799
SPRING HILL QLD 4004

PLANS AND DOCUMENTS
referred to in the
APPROVAL dated 21 / 3 / 06

Attention: 73(2)Irrelevant

Dear 73(2)Irrelevar

Proposed material change of use for industry warehouse situated at 45 Paringa Road, Murarrie. Lot 294 on SP135357.
Your Ref: 5458

We refer to your letter dated 5 July 2005 regarding the proposed material change of use situated at 45 Paringa Road, Murarrie and advise that ENERGEX holds no objection in principle to the proposal subject to the existing cable tunnel being maintained in accordance with the following conditions:

In regard to the proposed construction works within the ENERGEX easement the following is to be noted:

- No civil works are to occur within 3 metres of the cable centre line unless otherwise approved by Senior Project Engineer – Underground. Trenches in excess of 5 metres in depth must have a minimum horizontal separation, from the trench to cable centre line, at least equal to the trench depth. Natural ground levels on the easement should not be disturbed without ENERGEX approval.

- Where large excavations are taking place in the vicinity of our cables, there must be no more than a 45 degree batter to the cables (ie if excavating to 5m depth – need to maintain a 5m horizontal clearance to the edge of cable trench).

- Final ground levels should slope gently to the edge of the easement, surrounding area or kerb such that pooling of water on the easement is avoided and levels over the cables are not significantly increased/decreased from the nominal 900mm cover.

- Stockpiling of spoil on the easement is prohibited.

INTERNATIONAL QUALITY MANAGEMENT SYSTEM

Enquiries
73(2)Irrelev
Telephone
(07) 3407 4815
Facsimile
(07) 3407 4144
Email
73(2)Irrel@energex.com.au

Corporate Office
150 Charlotte Street
Brisbane Qld 4000
GPO Box 1461
Brisbane Qld 4001
Telephone (07) 3407 4000
Facsimile (07) 3407 4609
www.energex.com.au

ENERGEX Limited
ABN 40 078 849 055

Reference 710/52/67-02 L0774

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- Any proposed underground services are to be kept out of the easement and are to only traverse the easement as near as possible and at right angles to the cables.

- Any excavation for services across ENERGEX transmission cables should be no deeper than the barrier boards protecting these cables. Under no circumstances should barrier boards be removed and the backfill around the cables disturbed. However in this instance the existing cables are enclosed in a concrete type culvert tunnel, approximately 2 metres high and 3.5 metres wide, with occasional air vents to ground level to allow air circulation within the tunnel.

- Any excavation under ENERGEX cables/tunnel should be referred to Senior Project Engineer - Underground to determine if cables need to be supported during excavation. ENERGEX will be required to fill back around the cables on completion of the works.

- When directional drilling across ENERGEX cables/tunnel, a trench should be dug beside the cable to sight the location of the drilling head as it passes over/under the cables and or tunnel. There should be a minimum 500mm separation between the drilling head and cables, and/or tunnel.

- The applicant is to determine if the construction (and current condition) of the existing cable tunnel is suitable to support the passage of heavy vehicles. Any modification considered necessary by the applicant to allow heavy vehicle access should be verified by an RPEQ and forwarded to the Senior Project Engineer – Underground for his acceptance prior to construction. Attention may also be required relating to the relocation of existing air vents. Please note that any modifications should not cause flooding of the tunnel.

In addition could you please be aware of the following conditions relating to works undertaken on ENERGEX feeder easements.

- Any further proposal for works or development on the easement including those involving changes in ground level and retaining wall designs around cables must have prior approval from ENERGEX. Please submit the relevant civil design to Senior Project Engineer - Underground for approval.

- Access to the easement and access along the easement is available to ENERGEX personnel and heavy equipment at all times. ENERGEX will require the developer/owner to supply and install gates where fencing prohibits access to and along the easement area. To enable travel along the easement at anytime the gates must be series locked with an ENERGEX padlock. Both the padlock and a design drawing of an acceptable gate will be provided by ENERGEX.

- ENERGEX will not assume any responsibility for inadvertent damage that may occur to any installation while undertaking our normal activities on the easement.

- Any costs or damages incurred by ENERGEX as a result of the works on the easement are to be met by the property developer/owner.

- Landscaping on the easement is generally not permitted.

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Reference 710/52/67-02 L0774

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Please note that Easement L on CP898181 is a joint easement with Powerlink Queensland. Please contact 73(2)Irrelevant of Powerlink on (07) 3860 2804 to discuss Powerlink's requirements.

Should you require any further information on the above matter, please telephone our 73(2)Irrelevant on (07) 3407 4815.

Yours faithfully

73(2)Irrelevant

for Network Strategic Investment Manager

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Reference 710/52/67-02 L0774

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Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Level 16, 288 Edward St • Brisbane, Queensland • GPO Box 2771 • QLD 4001 •AUSTRALIA
Telephone (07) 32251827 • Facsimile (07) 3247 3278 • www.env.qld.gov.au/environment/business/contaminated

ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 1 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

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- underground fuel storage;
- abrasive blasting;
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- on-site disposal of ash and coke

- The contaminants of concern are as follows
- Copper (max 1830 mg/kg);
- Lead (max 2680 mg/kg); and
- Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

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3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

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Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

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Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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4.0 MONITORING AND REPORTING

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Environmental Protection Agency
Queensland Parks and Wildlife Service

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 2 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 3 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 4 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/0806

1.0 SUMMARY OF CONTAMINATION

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 5 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

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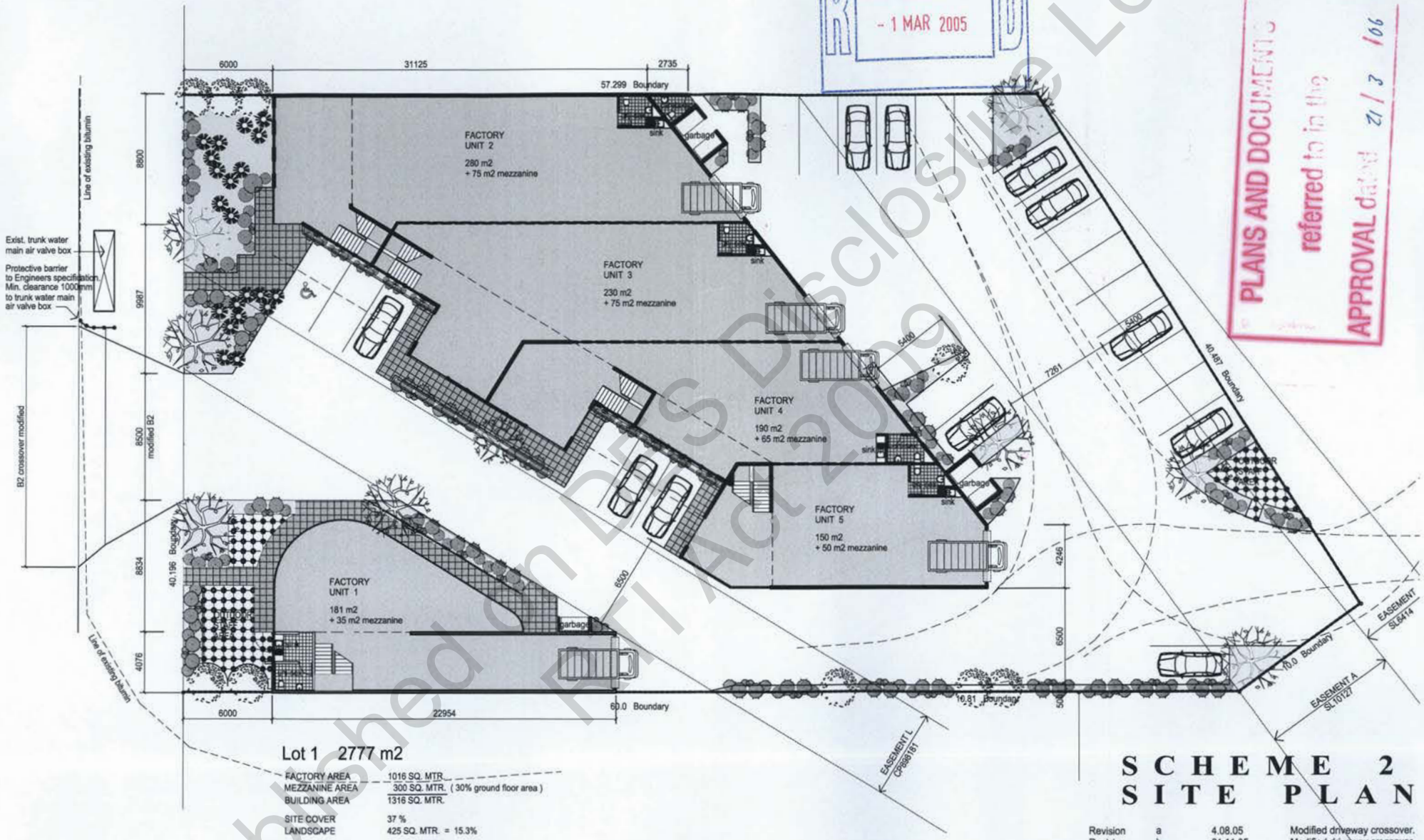
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Lot 1 2777 m2

FACTORY AREA	1016 SQ. MTR.	
MEZZANINE AREA	300 SQ. MTR.	(30% ground floor area)
BUILDING AREA	1316 SQ. MTR.	
SITE COVER	37 %	
LANDSCAPE	425 SQ. MTR. = 15.3%	
CARPARKING	2 PER TENANCY	10 CARS
	1 PER 100 SQ. MTR.	14 CARS
		24 CARS

SCHEME 2
SITE PLAN

Revision	a	4.08.05	Modified driveway crossover.
Revision	b	21.11.05	Modified driveway crossover.
Revision	c	28.02.06	Modified driveway crossover.

Scale	1:250
Date	16.05.05
Author	73(2)
Drawn	g.l.r.
Job. No.	2005
Dwg. No.	MCU-01c

NORTH

SNOWDAY PTY LTD AND GALE DEVELOPMENTS PTY LTD

PROPOSED DEVELOPMENT
LOT 1 PARINGA RD. - MURARRIE - QLD.

GAZZA DESIGN PTY. LTD
A.C.N. 079 731 329
68 Avanti Street, Mermaid Waters, Qld. 4218
PH: 07 55546612 FAX: 07 55743544
Email [redacted]@bigpond.com.au

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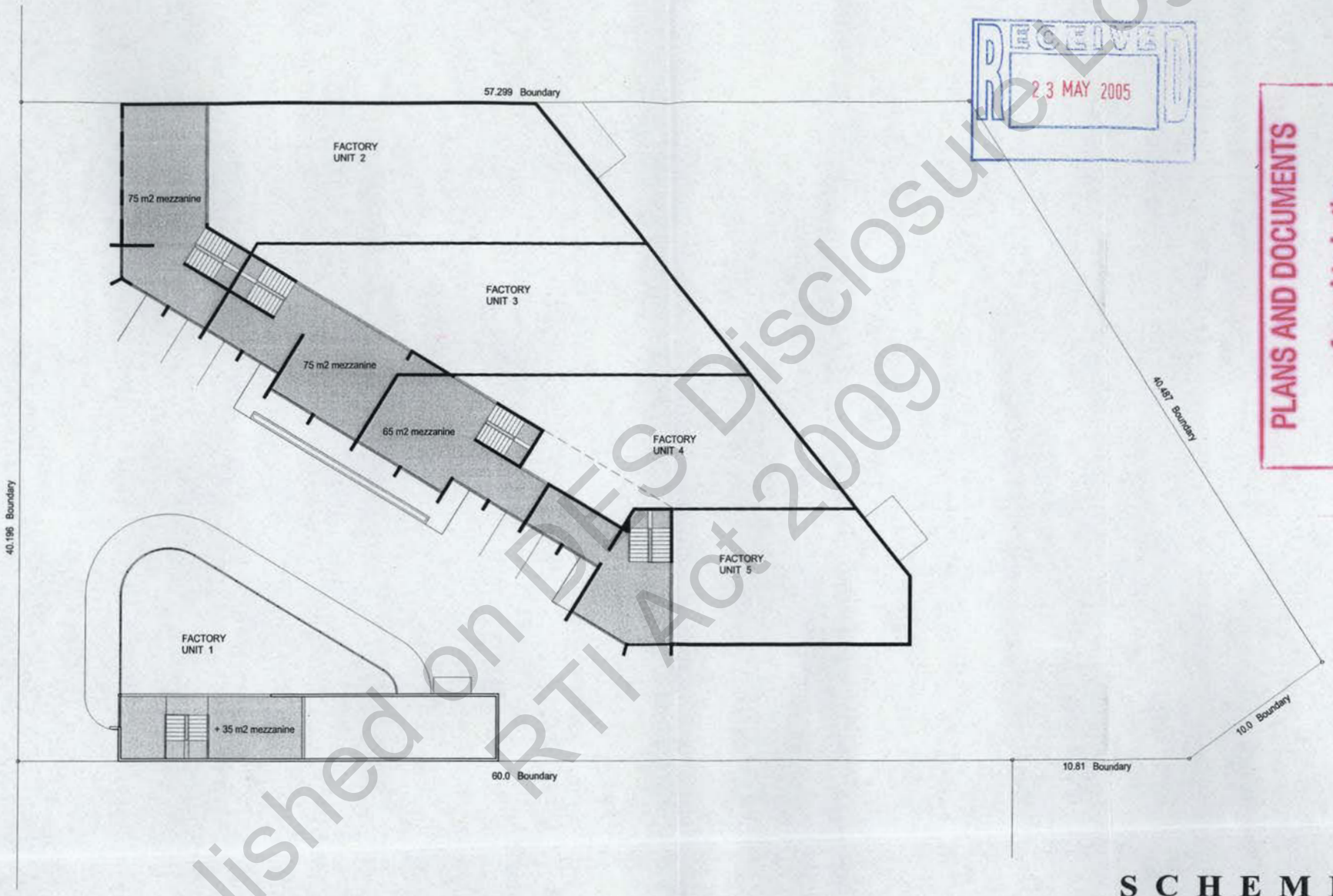
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- 1 MAR 2005

PLANS AND DOCUMENTS referred to in the APPROVAL dated 21/3/06

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23 MAY 2005

PLANS AND DOCUMENTS
referred to in the
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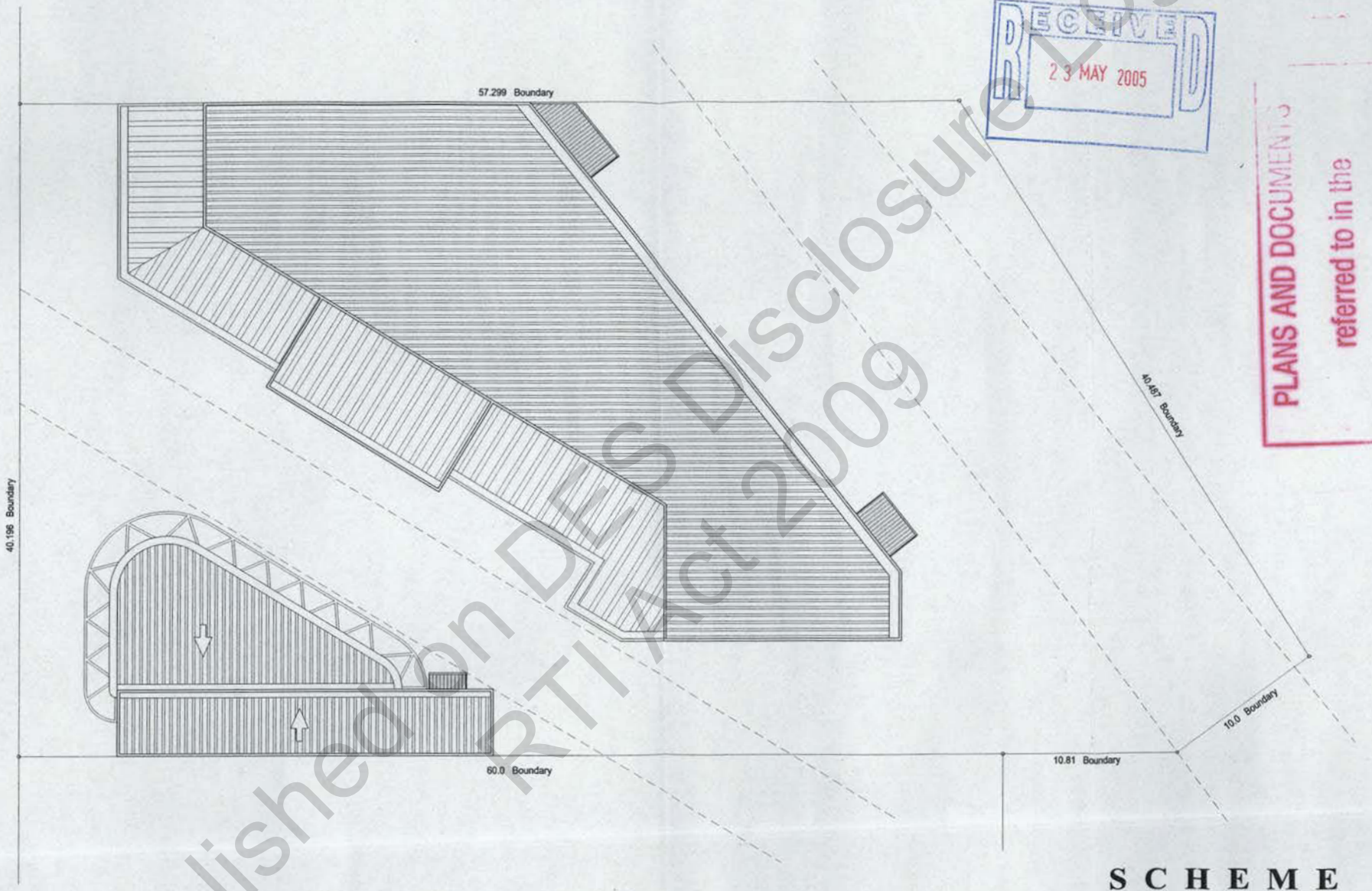
SCHEME 2
MEZZANINE

NORTH

Scale	1:250
Date	16.05.05
Author	[redacted]
Drawn	g.l.r.
Job. No.	2005
Dwg. No.	MCU-02

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A.C.N. 079 731 329
58 Avard Street, Mermaid Waters, Qld. 4218
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SCHEME 2
MEZZANINE

R

SNOWDAY PTY LTD AND GALE DEVELOPMENTS PTY LTD

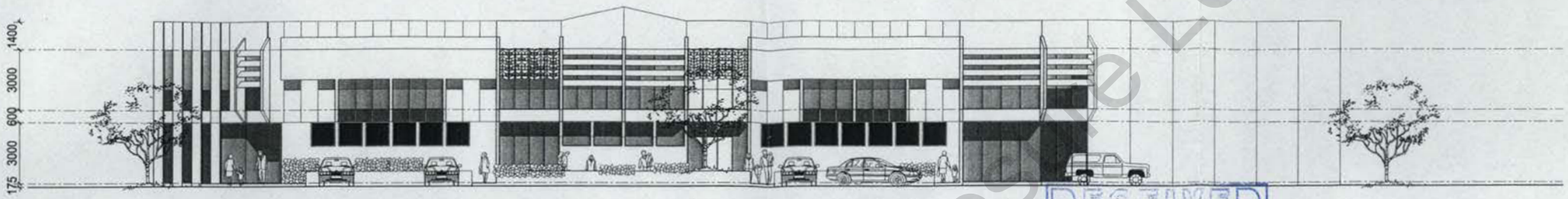
PROPOSED DEVELOPMENT
LOT 1 PARINGA RD. - MURARRIE - QLD.

NORTH

Scale	1:250
Date	16.05.05
Author	73(2)
Drawn	g.l.r.
Job. No.	2005
Dwg. No.	MCU-03

GAZZA DESIGN PTY. LTD.
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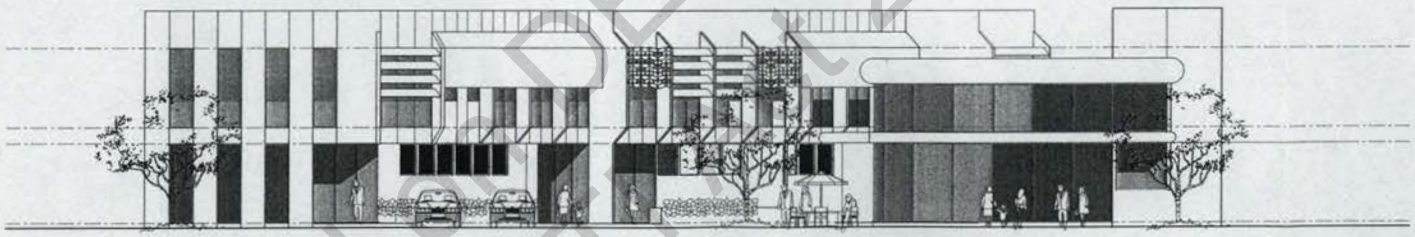
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NORTH WEST ELEVATION

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NORTH ELEVATION

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PROPOSED DEVELOPMENT
LOT 1 PARINGA RD. - MURARRIE - QLD.

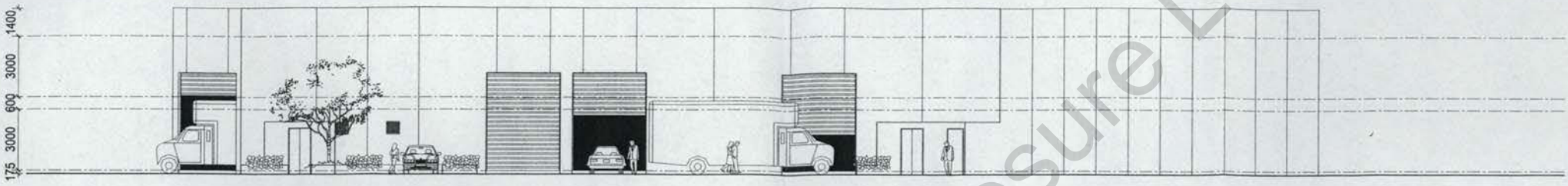
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NORTH

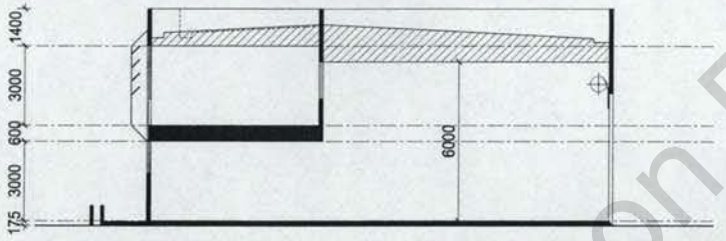
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Date	16.05.05
Author	TJ(2)1
Drawn	g.j.r.
Job. No.	2005
Dwg. No.	MCU-04

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EAST ELEVATION



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PROPOSED DEVELOPMENT
LOT 1 PARINGA RD. - MURARRIE - QLD.

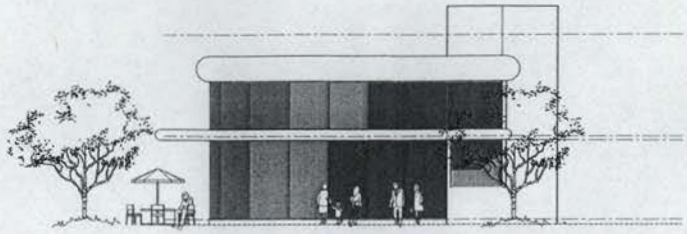
ELEVATION
SECTION

Scale	1:200
Date	16.05.05
Author	[illegible]
Drawn	g.l.r.
Job. No.	2005
Dwg. No.	MCU-05

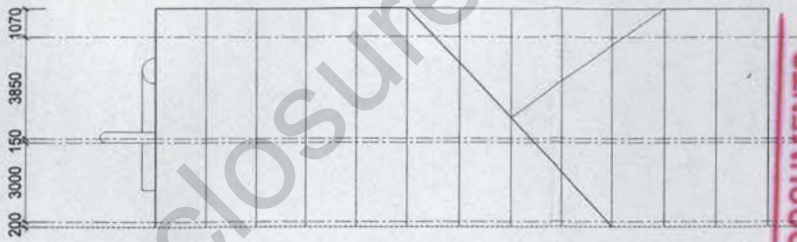
NORTH

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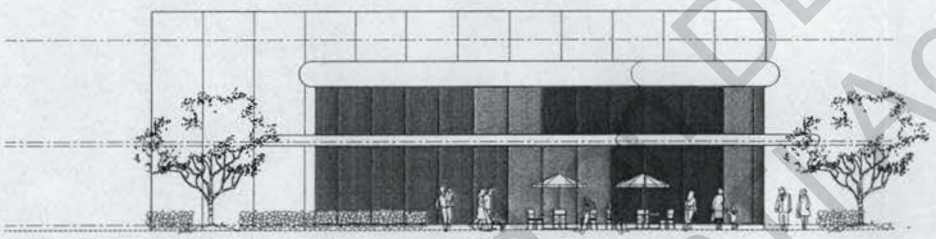
NORTH WEST ELEVATION



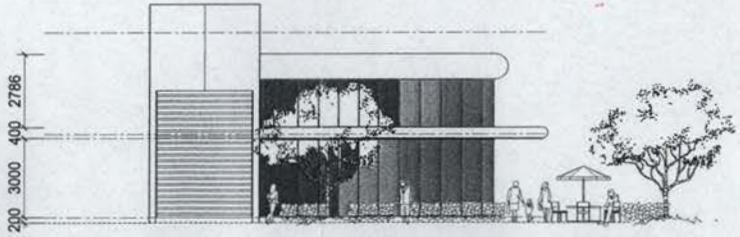
SOUTH WEST ELEVATION

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NORTH EAST ELEVATION



SOUTH EAST ELEVATION

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PROPOSED DEVELOPMENT
LOT 1 PARINGA RD. - MURARRIE - QLD.

ELEVATIONS UNIT 1

NORTH

Scale	1:200
Date	16.05.05
Author	73(2)
Drawn	g.l.r.
Job. No.	2005
Dwg. No.	MCU-06

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www.env.qld.gov.au ABN:87221158786

Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Notice of concurrence agency response
Sections 3.3.16 and 3.3.18 *Integrated Planning Act 1997*

This notice is issued by the administering authority pursuant to sections 3.3.16 and 3.3.18 of the *Integrated Planning Act 1997*, to advise you of a decision or action.

Enquiries to: Kim Barry
Telephone: (07) 3225 1086 kim.barry@epa.qld.gov.au
Your reference: DRS/USE/H05-920933
Our reference: App'n: 927 Part 2 File No.: BNE3112

CC: 73(2)Irrelevant
Jensen Bowers Group
PO Box 799
SPRING HILL QLD 4004

EMR updated 28/02/06 for This parcel & Base parcel L294 SL8781

Brisbane City Council
GPO Box 1434
BRISBANE QLD 4001

Attention: Mr Andrew Davis 73(2)Irrelevant

Re: Application (No. DRS/USE/H05-920933) for development approval for assessable development to be carried out at 45 Paringa Road, Murarrie (Lot 294 on SP135357).

Pursuant to the following items of Table 2 Schedule 2 of the *Integrated Planning Regulation 1998*, the Environmental Protection Agency – Contaminated Land Unit is a concurrence agency for the development application:

☐ Item 21, Table 2 of Schedule 2 of the *Integrated Planning Regulation 1998*
☑ Item 22, Table 2 of Schedule 2 of the *Integrated Planning Regulation 1998*

The Environmental Protection Agency – Contaminated Land Unit (EPA-CLU), acting as a concurrence agency under the *Integrated Planning Act 1997*, provides its response to the application detailed above as attached.

It would be appreciated if Council could provide a signed hard copy of the final development approval issued by Council (which includes the Agency's concurrence conditions).

The EPA has not provided a notification to native title parties for this application. The State's Native Title Work Procedures indicate that responsibility for assessment of native title issues for an IDAS application rest with the Assessment Manager. It is recommended that you undertake an assessment using your own guidelines to determine if a native title notification is required for this application.

Should you require any further information please do not hesitate to contact the above officer on the telephone number or e-mail address provided .

73(2)Irrelevant

Signed

27/2/2006
Date

Delegate of Administering Authority
Environmental Protection Act 1994.

R

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Concurrence agency response
Sections 3.3.16 and 3.5.18 *Integrated Planning Act 1997*

Applicant:	Jensen Bowers Group
Council Application Number:	DRS/USE/H05-920933
EPA Application Number:	927 Part 2
Date application received by EPA:	20/07/2005
Relevant Laws and Policies:	*Environmental Protection Act 1994*
Jurisdiction:	Chapter 7, Part 8 *Environmental Protection Act 1994*

Development Description:

Material Change of Use - Industry/Warehouse

where:

- ☐ the existing use of the land is, or if the land is vacant land with no existing use the most recent use of the land was, for a notifiable activity under the *Environmental Protection Act 1994*.
- ☐ the proposed use of the land is for child care, educational, recreational, residential or similar purposes and the existing use of the land is, or if the land is vacant land with no existing use the most recent use of the land was, for an industrial activity.
- ☑ the land is on the Environmental Management Register or Contaminated Land Register under the *Environmental Protection Act 1994*.
- ☐ the land is wholly or partly within an area for which an Area Management Advice for industrial activity or natural mineralisation has been issued and the proposed use of the land is for child care, educational, recreational, residential or similar purposes.
- ☐ the land is wholly or partly in an area for which an Area Management Advice for unexploded ordnance has been issued.

at the following place(s):

45 Paringa Road, Murarrie
(Lot 294 on SP135357)

Response to Development Application

The Environmental Protection Agency, acting as a concurrence agency under the *Integrated Planning Act 1997*, provides its response to the application detailed above.

The concurrence agency response is that

- ☑ conditions must attach to any development approval
- ☐ any approval must be for part only of the development
- ☐ any approval must be a preliminary approval only
- ☐ there are no concurrence agency requirements
- ☐ the application must be refused

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Conditions of the development approval

At all times while the use continues and the subject land is on the Environmental Management Register (EMR) the applicant must comply with the approved Site Management Plans (SMP) for Lots 1 to 5 on SP179372 (child parcels of Lot 294 on SP135357) issued under the *Environmental Protection Act 1994* by the Environmental Protection Agency (Contaminated Land Unit).

Additional comments or advice about the application

A copy of the current SMPs, with an effective date of 25/02/2006, are attached. The SMP has specific requirements which apply to excavation during site construction works and for the removal of soil from the site.

Reasons for inclusion of development conditions or refusal

In accordance with section 3.3.18 of *the Integrated Planning Act 1997* and section 27B of the *Acts Interpretation Act 1954*, a concurrence response must include reasons for a refusal or for the inclusion of development conditions.

The Environmental Protection Agency is recognised as a concurrence agency under the *Integrated Planning Regulation 1998* for the protection of the environment by the management of contaminated land. The Environmental Protection Agency concurrence agency conditions for this proposed development that are contained within this response are required to prevent or mitigate any potential risk to human health or the environment from possible hazardous contaminants present on the site.

Additional information for applicants

This concurrence response pursuant to Chapter 7, Part 8 of the *Environmental Protection Act 1994* applies only to contaminated land issues and does not remove the need to obtain any further approval for this development which may be required by this or other legislation, State and/or Commonwealth. Applicants are advised to check with all relevant statutory authorities for such approvals as may be required.

~ End Of Concurrence Agency Response ~

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Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 1 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
- plant maintenance and overhaul workshops;
- chemical and materials testing laboratories;
- small metal-melting furnace;
- underground fuel storage;
- abrasive blasting;
- on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
- on-site disposal of ash and coke

- The contaminants of concern are as follows
- Copper (max 1830 mg/kg);
- Lead (max 2680 mg/kg); and
- Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage 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 of the land (as defined in the *Environmental Protection Act 1994)* is to ensure that this SMP and any variations 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 *Site Use.* The site may be used for industrial/commercial use, as described in the National Environment Protection (Assessment of Site Contamination) Measure, December 1999, Table 5-A Health Investigation Levels Setting F.

3.3 *Provision of SMP to appropriate persons.* The owner 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 commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

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3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

3.5 *Soil excavation & Removal.* Any soil excavated on the site must be assessed for contaminants of concern to determine if the material is contaminated thereby allowing for the development and implementation of appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from excavations in contaminated areas 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 site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected is observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within 2 business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

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.

Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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 in contaminated areas. The WH&S plan must specifically address contaminants of concern.

4.0 MONITORING AND REPORTING

A site inspection is to be undertaken at biennial intervals to ensure that capping and protective barriers including vegetative covers remain in sound condition at all times in accordance with section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, disposal permits and site management plan compliance for review by the administering authority from time to time.

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

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

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Queensland Government
Environmental Protection Agency
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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 2 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
- plant maintenance and overhaul workshops;
- chemical and materials testing laboratories;
- small metal-melting furnace;
- underground fuel storage;
- abrasive blasting;
- on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
- on-site disposal of ash and coke

- The contaminants of concern are as follows
- Copper (max 1830 mg/kg);
- Lead (max 2680 mg/kg); and
- Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage 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 of the land (as defined in the *Environmental Protection Act 1994)* is to ensure that this SMP and any variations 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 *Site Use.* The site may be used for industrial/commercial use, as described in the National Environment Protection (Assessment of Site Contamination) Measure, December 1999, Table 5-A Health Investigation Levels Setting F.

3.3 *Provision of SMP to appropriate persons.* The owner 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 commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

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3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 3 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

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Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

Level 16, 288 Edward St • Brisbane, Queensland • GPO Box 2771 • QLD 4001 •AUSTRALIA
Telephone (07) 32251827 • Facsimile (07) 3247 3278 • www.env.qld.gov.au/environment/business/contaminated

ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 4 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/0806

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
- plant maintenance and overhaul workshops;
- chemical and materials testing laboratories;
- small metal-melting furnace;
- underground fuel storage;
- abrasive blasting;
- on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
- on-site disposal of ash and coke

- The contaminants of concern are as follows
- Copper (max 1830 mg/kg);
- Lead (max 2680 mg/kg); and
- Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage contamination on the site in a manner that protects human health and the environment.

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3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

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3.6 *Unexpected Contamination.* If during any site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected is observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within 2 business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

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.

Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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4.0 MONITORING AND REPORTING

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ANNEXURE 1 - SITE MANAGEMENT PLAN

LOT : 5 PLAN : SP179372 FILE REF : BNE3112 PRINTED: 27/02/2006

DATE OF EFFECT : 25/02/2006

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
- plant maintenance and overhaul workshops;
- chemical and materials testing laboratories;
- small metal-melting furnace;
- underground fuel storage;
- abrasive blasting;
- on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
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- The contaminants of concern are as follows
- Copper (max 1830 mg/kg);
- Lead (max 2680 mg/kg); and
- Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

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3.0 ACHIEVEMENT AND MAINTENANCE OF OBJECTIVES

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R

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3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

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Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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 in contaminated areas. The WH&S plan must specifically address contaminants of concern.

4.0 MONITORING AND REPORTING

A site inspection is to be undertaken at biennial intervals to ensure that capping and protective barriers including vegetative covers remain in sound condition at all times in accordance with section 3.4.

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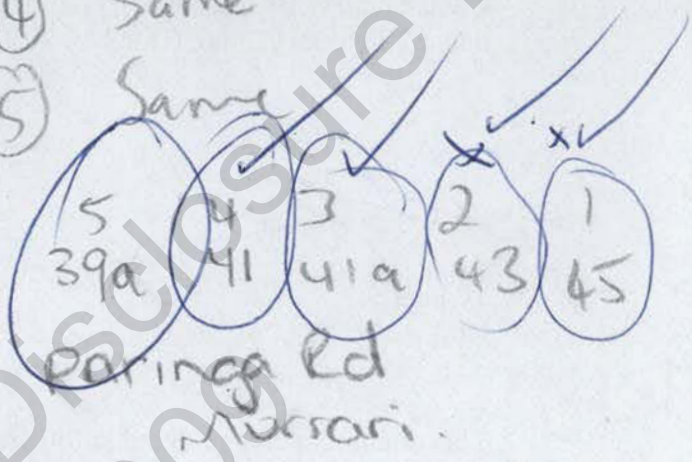
Only put these lots on for ↓ Waste Storage Treatment & Disposal ↓ Land fill

Annemarie,

Please manage 1-5 SP179372.

① Gailes Developments
73(2)Irrelevant

② Same
③ Same
④ Same
⑤ Same



Owner:
Pl check rates – sale pending

Applicant:
73(2)Irrelevant
Waste Solutions
PO Box 514
ASHGROVE QLD 4060

TPR
73(2)Irrelevant
Environmental & Earth Sciences
PO Box 174
TAIGUM QLD 4018

Studies:
\line
Preliminary Contamination Assessment Bulimba 'A' Power Station Site Murarrie, Queensland prepared, prepared by Geo-Eng Australia Pty Ltd, dated March 2000, (Doc No. 3586/71522_20).
\line\line
Bulimba 'A' Power Station Site Murarrie, Queensland prepared, prepared by Geo-Eng Australia Pty Ltd, dated November 2001, (Doc No. 3682/56253/15).
\line\line
Preliminary Groundwater Contamination Assessment Bulimba 'A' Power Station Site Murarrie, Queensland prepared, prepared by Geo-Eng Australia Pty Ltd, dated August 2000, (Doc No. 3582/71528_19).
\line\line
Monitoring Results for Bulimba 'A' Power Station site, Murarrie, prepared by PPK Environment & Infrastructure, dated 10 April 2002, (Doc 213805A-LT001jwb).
\line\line
Soil Gas Assessment of Methane Generation at Former Bulimba 'A' Power Station, Murarrie, Queensland, prepared by PPK Environment & Infrastructure, dated 28 November 2002, (Doc No. 2136218A-LT002Apd:rmg).
\line\line
Methane Assessment – Bulimba A Power Station, Murarrie, Queensland, prepared by PPK Environment & Infrastructure, dated 30 August 2002, (Doc No. 2136218A-LT001Csjh:rmg).
\line\line
Soil Gas Assessment of Methane Generation at Former Bulimba 'A' Power Station,

Task	Tick	Initial & Date
Check owner	✓	24/1/06
Check site address (QVAS)	✓	24/1
Check applicant	✓	24/1
Queue officer signed off on Stat dec.	✓	
Update blue sheet	✓	25/1
Fill out SMP audit Folders	✓	25/1
Make green/blue copies		
Sign blue sheet	✓	25/1

73(2)Irrelev

R

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Murarrie, Queensland, prepared by Parsons Brinckerhoff International (Australia) Pty Limited, dated 28/November 2002, (Doc No. 2136218A-LT002Apd:rmg).
\line\line
Stage 2 Environment Site Assessment, 55 Paringa Road, Murarrie, Queensland, prepared by Waste Solutions Australia Pty Ltd, dated January 2006, (Doc No. RN 05/A399-1).
\line\line
Third Party Review of the Stage 2 Environmental Site Assessment Report and Draft Site Management Plan for Proposed Lots 1 to 5, 55 Paringa Road, Murarrie, Queensland (EPARef. 3112), prepared by Environmental & Earth Sciences QLD, dated 2 February 2006, (Doc No. 705029TPRLetter3.doc).

73(2)Irrelevant

24/02/06

Thanks
Kim Barry

This document can be found at F:\Licensing\Contaminated Land\Studies\BNE3112\bne3112.doc.

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DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 20 February 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
  - on-site disposal of ash and coke
- The contaminants of concern are as follows
  - Copper (max 1830 mg/kg);
  - Lead (max 2680 mg/kg); and
  - Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.
Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage contamination on the site in a manner that protects human health and the environment.

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Queensland Government

Enquires Kim Barry
Telephone 3225 1045
Your reference
Our reference BNE3112

Environmental Protection Agency
Incorporating the
Queensland Parks and Wildlife Service

20 February 2006

73(2)Irrelevant
Gale Developments Pty Ltd
73(2)Irrelevant

8 pages

Dear 73(2)Irrelevant

Lot 5 on SP179372

Attached is the proposed draft Site Management Plan (SMP) for the above referenced lot. This will form part the Environmental Protection Agency Contaminated Land Unit's Concurrence Agency Response under *The Integrated Planning Act 1997*. Pursuant to s403(2) of *The Environmental Protection Act 1994*, please give consent to the SMP and initial all pages. Please return the document by fax (3247 3278).

Yours faithfully

73(2)Irrelevant
Kim Barry
Principal Scientific Advisor
Environmental Operations
Southern Region

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R

288 Edward Street Brisbane
Queensland 4000 Australia
PO Box 288 Brisbane
Queensland 4001 Australia
Telephone
Facsimile
Website www.env.qld.gov.au
ABN 87 221 158 786

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DATE: 20 February 2006

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P.01

TRANSACTION REPORT

20-FEB-2006 MON 12:18

FOR: CONTAM LAND - EPA 0732473278

SEND

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	MNO.	DP
20-FEB	12:17	73(2)Irrelevant	**'**	0	FAX TX	BUSY	943	

TOTAL : 0S PAGES: 0

Queensland Government

Environmental Protection Agency

Incorporating the Queensland Parks and Wildlife Service

Enquires Kim Barry
Telephone 3225 1045
Your reference
Our reference BNE3112

20 February 2006

73(2)Irrelevant

Gale Developments Pty Ltd

73(2)Irrelevant

5 pages

Dear 73(2)Irrelevant

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Your reference
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Environmental Protection Agency
Incorporating the
Queensland Parks and Wildlife Service

20 February 2006

73(2)Irrelevant
Snowday Pty Ltd
PO Box 533
SANCTURY COVE QLD 4212

5 pages

Dear 73(2)Irrelevant

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73(2)Irrelevant

Kim Barry
Principal Scientific Advisor
Environmental Operations
Southern Region

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Website www.env.qld.gov.au
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Queensland Government

Enquires Kim Barry
Telephone 3225 1045
Your reference
Our reference BNE3112

Environmental Protection Agency
Incorporating the
Queensland **Parks and Wildlife Service**

20 February 2006

73(2)Irrelevant

Moran Management Pty Ltd & Racey Management Pty Ltd
Suite 8, 53 Monash Rd
Tarragindi QLD 4121

5 pages

Dear 73(2)Irrelevant

Lots 2, 3 & 4 on SP179372

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Environmental Operations
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SNOWDAY P/L

A.B.N. 66 003 895 341
P.O. Box 533 Sanctuary Cove 4212

Phone: 07 55778010. Mob: 73(2)Irrelevant
Fax: 07 55778313

FAX SHEET

CONTAMINATED LAND SECTION
20 FEB 2006

Fax No. 32 47 3278

Date: 20th February 2006

Attention: Kim Barry

Message: Lot 1 SP 179372 Paringa Road Murarrie.

Dear Kim,

Enclosed herewith as requested SMP signed.

Yours Faithfully

73(2)Irrelevant

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CONTAMINATED LAND SECTION
20 FEB 2006

DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 20 February 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
  - on-site disposal of ash and coke
- The contaminants of concern are as follows
  - Copper (max 1830 mg/kg);
  - Lead (max 2680 mg/kg); and
  - Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.
Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage 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 of the land (as defined in the *Environmental Protection Act 1994*) is to ensure that this SMP and any variations 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 Site Use. The site may be used for industrial/commercial use, as described in the *National Environment Protection (Assessment of Site Contamination) Measure, December 1999, Table 5-A Health Investigation Levels Setting F.*

3.3 *Provision of SMP to appropriate persons.* The owner must provide all persons involved in building design and planning and all contractors and lessees conducting

R 73(2)Irreleva

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building and/or excavation works with a copy of the SMP prior to commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

3.5 *Soil excavation & Removal.* Any soil excavated on the site must be assessed for contaminants of concern to determine if the material is contaminated thereby allowing for the development and implementation of appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from excavations in contaminated areas 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 site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected is observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within 2 business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

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.

Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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 in contaminated areas. The WH&S plan must specifically address contaminants of concern.

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4.0 MONITORING AND REPORTING

A site inspection is to be undertaken at biennial intervals to ensure that capping and protective barriers including vegetative covers remain in sound condition at all times in accordance with section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, disposal permits and site management plan compliance for review by the administering authority from time to time.

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

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RTI Act 2009

R 73(2)Irrelevant

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.

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RTI Act 2009

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CONTAMINATED LAND SECTION
21 FEB 2006

Queensland Government

Enquires Kim Barry
Telephone 3225 1045
Your reference
Our reference BNE3112

Environmental Protection Agency
Incorporating the
Queensland Parks and Wildlife Service

20 February 2006

73(2)Irrelevant
Moran Management Pty Ltd & Raggy Management Pty Ltd
Suite 8, 53 Monash Rd
Tarragindi QLD 4121

5 pages

Dear 73(2)Irrelevant

Lots 2, 3 & 4 on SP179372

Attached is the proposed draft Site Management Plan (SMP) for the above referenced lots. This will form part the Environmental Protection Agency Contaminated Land Unit's Concurrence Agency Response under *The Integrated Planning Act 1997*. Pursuant to s403(2) of *The Environmental Protection Act 1994*, please give consent to the SMP and initial all pages. Please return the document by fax (3247 3278).

Yours faithfully

73(2)Irrelevant
Kim Barry
Principal Scientific Advisor
Environmental Operations
Southern Region

yes we give consent as requested. above initialed all pages. we will advise once title is issued. Thank you
73(2)Irrelevant
73(2)Irrelevant

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Queensland 4001 Australia
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Facsimile
Website www.env.qld.gov.au
ABN 87 221 158 786

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DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 20 February 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
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Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.
Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

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3.3 *Provision of SMP to appropriate persons.* The owner must provide all persons involved in building design and planning and all contractors and lessees conducting

73(2)Irrel

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building and/or excavation works with a copy of the SMP prior to commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

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R

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4.0 MONITORING AND REPORTING

A site inspection is to be undertaken at biennial intervals to ensure that capping and protective barriers including vegetative covers remain in sound condition at all times in accordance with section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, disposal permits and site management plan compliance for review by the administering authority from time to time.

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

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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.

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RTI Act 2009

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R

Queensland Government

Enquiries Kim Barry
Telephone 3225 1045
Your reference
Our reference BNE3112

Environmental Protection Agency
Incorporating the
Queensland Parks and Wildlife Service

20 February 2006

73(2)Irrelevant
Gale Developments Pty Ltd
73(2)Irrelevant

Attn Kim Barry 5 pages

Dear 73(2)Irrelevant

Lot 5 on SP179372

Attached is the proposed draft Site Management Plan (SMP) for the above referenced lot. This will form part the Environmental Protection Agency Contaminated Land Unit's Concurrence Agency Response under *The Integrated Planning Act 1997*. Pursuant to s403(2) of *The Environmental Protection Act 1994*, please give consent to the SMP and initial all pages. Please return the document by fax (3247 3278).

Yours faithfully

73(2)Irrelevant

Kim Barry
Principal Scientific Advisor
Environmental Operations
Southern Region

CONTAMINATED SECTION
20 FEB 2006

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ABN 87 221 158 786

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DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 20 February 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
  - on-site disposal of ash and coke
- The contaminants of concern are as follows
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  - Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.
Note: Groundwater was identified at a minimum depth of 3m below ground level.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage contamination on the site in a manner that protects human health and the environment.

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On behalf of [redacted] Developments
we hereby consent

73(2)Irrelevant

73(2)Irrelevant

Director

20/02/06

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Published on DES Disclosure Log
PTI Act 2009

building and/or excavation works with a copy of the SMP prior to commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

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Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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[redacted] 73(2)Irrelevant

20/02/06

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Published on DES Disclosure Log
Part A cm 2009

4.0 MONITORING AND REPORTING

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

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20/02/06.

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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.

73(2)Irrelevant

20/02/06

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Memorandum

To File

File reference BAE 3112

From ~~BAE 3112~~ Kim B

Subject 55 Paringa Rd / 1098 Lytton Rd Murarrie

Date 13/02/96

Notes

* Fee overpaid need to refund $980.

Refer to ~~file~~ previous filenotes - TPR appointed after that time.

This stage ONLY deals with L294 SP 135357.

Sufficient investigations have been undertaken re site to justify SMP. - Site to be reconfig.

- Discussed c 73(2)Irrelevant (TPR)
- Report is approved 20/02/96 - Send SMP to new owners for Grant.

Full Note:

TPR has reviewed work by Waste Solutions & appears to have followed an adequate audit + QA/QC procedures. Work is audited according to TOR per TPR. Agree change status of Lots 1-5 to managed as per agreed SMP.

73(2)Irrelevant

73(21/2/96

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THIS DRAFT MANAGEMENT PLAN IS SUBJECT TO TPR APPROVAL

DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 25 January 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
  - on-site disposal of ash and coke
- The contaminants of concern exceeding nominated Investigation Criteria are:
  - Soil (Qld EPA Environmental Investigation Levels (EILs)):
    - Heavy Metals:
      - Copper (max 1830 mg/kg);
      - Lead (max 2680 mg/kg); and
      - Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

  - Groundwater (ANZECC 2000 trigger values for the protection of aquatic ecosystems):
    - Copper max 24µg/L
    - Nickel max 13µg/L
    - Lead max 12µg/L
    - Zinc max 415µg/L
    - Molybdenum max 19µg/L
    - Vanadium max 35µg/L
    - Total Nitrogen max 23 000µg/L
    - NO_X max 960µg/L
    - Ammonia max 16 000µg/L
    - Total Phosphorus max 5 140µg/L

Note: Groundwater was identified at a minimum depth of 3m below ground level.

- Other contaminants of concern that were either not detected in the soil, below Qld EPA EILs or for which guidelines have not been established were:
  - Heavy Metals: Aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, molybdenum, nickel, selenium, silver, strontium, thallium, tin, vanadium, mercury and iron;
  - Total Petroleum Hydrocarbons (TPH) (max 210 mg/kg (C_{10} – C_{36} fraction)).
  - Polynuclear Aromatic Hydrocarbons (PAH);

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- Polychlorinated Biphenyls (PCBs); and
- Organochlorine Pesticides (OCPs).

- Other contaminants of concern in the groundwater that were either not detected or below ANZECC 2000 trigger values for the protection of aquatic ecosystems or Dutch Intervention values were:
  - Heavy Metals: arsenic, cadmium, chromium, selenium and mercury;
  - TPH/BTEX;
  - PAH;
  - PCBs; and
  - OCPs.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

~~Figure 1 (attached) shows the locations and depths of the impacted material.~~

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage 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 of the land (as defined in the *Environmental Protection Act 1994*) is to ensure that this SMP and any variations 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.

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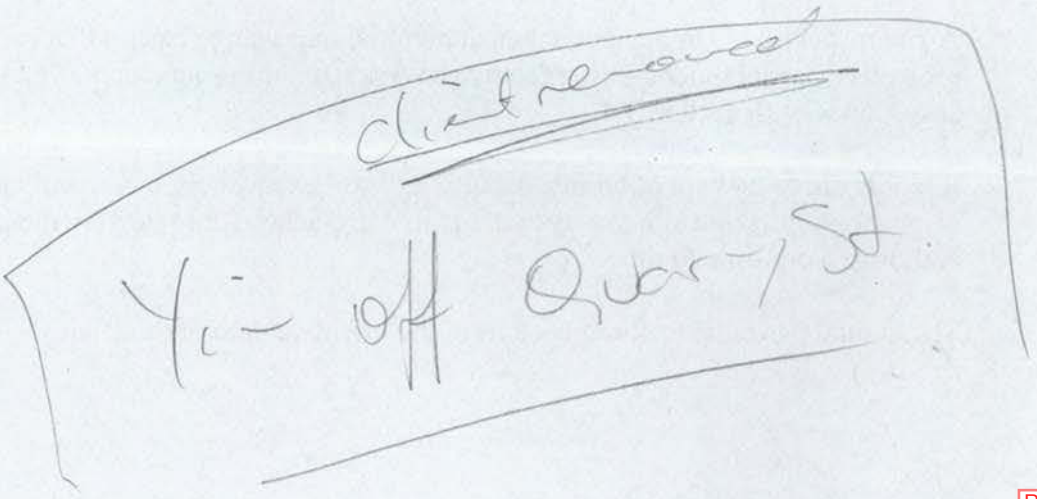
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This Site Management Plan (SMP) has been developed to manage site contamination risks present at the issue date. Subsequent uses of the site may result in the need to review the plan.

~~This SMP makes reference to a plan attachment that is available from the Administering Authority if required.~~

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for the development and implementation of appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from excavations in contaminated areas 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.

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

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APPLICATION FOR ASSESSMENT OF A SITE INVESTIGATION REPORT

BNE3112

1. PRE-CHECK (Administration Officer)

		NOTES
a. Current application form and statutory fee included	✓	Overpaid by $950
b. Check Access database to ensure there is no existing file for the site, Development Application (IPA) or Disposal Permit	✓	
c. Check QVAS for current owner details	✓	
d. Check EMR to see whether the site is listed. (If not, need Notification form).	✓	
e. Check Certificate of Titles (CoT) for all lots are included	✓	
f. Check that the owner listed on the application form matches that on CoT	✓	
g. Check current Registered Plans for all lots are included	✓	
h. Check Statutory declarations: -Investigator / report preparer has required qualifications and experience -Correct format -Applicant if required	✓	
i. Firm Recommendations wrt EMR/CLR	X	No EMR mentions SMP.

More information required? Yes / No If yes, what is required?

1) No mention of EMR in conclusions - mentions SMP.

Requested from: on:

S385(1) or S398(1) Notice issued (ie.require additional reports) Date of Notice:

Comments:

Cheque sent to finance: _____

Date received all required information 02/02/06

2. MAKE UP FILE (Administration Officer)

a. Assign file number	✓
b. Write up file cover & attach blue	✓
c. Enter details into ACCESS	✓
d. Enter details into CARMS, attach barcode	✓

3. CHECK FILE (Scientific Advisor)

a. Details on file cover are correct	✓
b. All required information has been provided	✓
c. Details on Access trackers are correct	✓
d. Lots in report, on CoT, RP & application form all match	✓

TPR ☐

Details added to queue sheet ☑

OK for rounds? ☑ **Due date:** 22/3/06

4. FILE SENT ON ROUNDS Date: _____ **Details updated on Access Tracker** ☐

5. FILE HAS COMPLETED ROUNDS AND IS READY FOR QUEUE ☐

R

F:\Licensing\Contaminated Land\ADMINISTRATION\AdminTemplates\CSI CHECK-LIST.docAmended 7/09/2005

Released on DES Disclosure Log RTI Act 2009

BNE 2006/1450

ACN 109 442 284 Glaeba (07) Pty Ltd trading as
Environmental & Earth Sciences
QLD
Contaminant Soil Science & Hydrogeology

2 February 2006

Contaminated Land Unit
Queensland Environmental Protection Agency
PO Box 2771
Brisbane QLD 4001



Attention: **Ms Angelina Smolkova-Bismark**
Scientific Adviser

Dear Angelina

Re: Third Party Review of the Stage 2 Environmental Site Assessment Report and Draft Site Management Plan for Proposed Lots 1 to 5, 55 Paringa Road, Murarrie, Queensland (EPA Ref. 3112)

I have now completed the third party review of the following documents prepared by Waste Solutions Australia Pty Ltd (Waste Solutions) on behalf of Gale Developments Pty Ltd and Snowday Pty Ltd:

— *Stage 2 Environmental Site Assessment, 55 Paringa Road, Murarrie*;

— *Draft Site Management Plan, Lots 1 – 5, 55 Paringa Road, Murarrie;*

and hereby recommend that the Contaminated Land Unit of the Environmental Protection Agency (EPA) accept the site assessment report recommendation that Proposed Lots 1 to 5 are suitable for industrial use, subject to the Site Management Plan (SMP) conditions.

The site assessment report and attached documentation satisfies EPA administrative requirements for the assessment of a site investigation report. Copies of the Stage 2 site assessment report and draft site management plan are attached.

In accordance with the EPA terms of reference for undertaking a third party review, a summary of the review process for this project, including a discussion of issues critical to the report recommendations, is presented below.

The review process involved the following:

— an inspection of the site with Waste Solutions personnel on 5 October 2005, prior to drilling being undertaken on 10 and 11 October 2005;

— a review of the preliminary soil and groundwater results and draft SMP received on 26 October 2005; and

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— a review of draft versions of the site assessment report received on 23 November 2005, 21 December 2005, 18 January 2006 and 24 January 2006.

Correspondence with Waste Solutions regarding issues identified upon review of the preliminary laboratory results and draft SMP and the 23 November and 21 December 2005 draft reports are included as Attachment A. The draft SMP is included as Attachment B.

During the third party review process, the following issues were identified as being critical to the report recommendations:

— the sampling density and the extent to which the ash fill present beneath Proposed Lots 1 to 5 is homogenous;

— the presence or absence of potential contaminant sources identified during previous investigations, including a former UST, beneath Proposed Lots 1 to 5; and

— the presence of elevated heavy metals, ammonium, nitrate and phosphorus concentrations in groundwater beneath Proposed Lots 1 to 5.

Based on the depositional history and uniform nature of the ash fill present beneath Proposed Lots 1 to 5, Waste Solutions reduced the sampling density from five sampling locations to four sampling locations per proposed lot. A sampling density of five locations per proposed lot had previously been agreed to with the EPA at a meeting regarding the site on 31 August 2005. The 20 boreholes drilled across the five proposed lots was therefore marginally less than the 23 sampling points recommended for a 1.25 hectare site in AS 4482.1 – 1997.

The ash observed in a services excavation on 5 October 2005 comprised a uniform mixture of clinker clasts up to 3 – 4 cm in diameter in an ash (i.e. fine powdery material) matrix. Given that the majority of the fill beneath Proposed Lots 1 to 5 is ash, the majority of the ash is known to originate from one source and the uniformity of the ash observed on 5 October 2005 is consistent with Waste Solutions' observations, the 20 points sampled and the 57 samples analysed, including duplicates, are considered sufficient to characterise the fill/soil. Thus, the laboratory results can be considered to be representative of the range of potential contaminant concentrations likely to be encountered in the fill/soil present beneath Proposed Lots 1 to 5. It is also noted that the Waste Solutions' investigation results are consistent with the results of previous investigations.

The suitability of the fill for the proposed industrial use is supported by the 95% upper confidence limit of the mean concentration for lead. The lead concentration recorded in sample BH11 0.5 – 1.0 (2 680 mg/kg) was the only result to exceed the health based investigation level for commercial/industrial use.

Waste Solutions calculated the 95% upper confidence limit for lead to be 253.7 mg/kg, assuming a normal distribution. Given that the coefficient of variation for the lead results was calculated to be 2.35, the calculation of the 95% upper confidence limit using a log normal

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distribution is considered to be more appropriate. Assuming a log normal distribution, the 95% upper confidence limit for lead is calculated to be 269.6 mg/kg. Both estimates of the 95% upper confidence limit are below the health based investigation level for commercial/industrial use. Consequently, it is agreed that the lead concentration of 2 680 mg/kg recorded in sample BH11 0.5 – 1.0 does not preclude future use of the site for commercial/industrial purposes.

A former underground (fuel) storage tank (UST) is reported to have been located in the vicinity of Waste Solutions' borehole BH19. Evidence of the UST, associated fittings and hydrocarbon impacted soil and ash was not encountered by Waste Solutions personnel. Whilst the reliance that can be placed on one borehole is limited, the following evidence (Geo-Eng, March 2000) indicates that the UST is likely to have either been removed or water abandoned:

— Geo-Eng personnel manually excavated the soil present in the vicinity of the reported location of the UST and did not encounter UST fittings;

— a historical photograph showed safety barricades present in the vicinity of the UST indicating that it may have been removed or modified; and

— a former government employee involved with decommissioning government owned fuel facilities stated that UST is likely to have been water abandoned.

If the UST was water abandoned, it is likely that upper tank infrastructure such as the dip point and fill point would be present because it was standard practice to cut the vent line and fill the tank with water via the dip point. It would be unusual to expose the top of the UST and remove the upper tank infrastructure when water abandoning a UST.

The likelihood of the upper tank infrastructure on a single UST being modified is considered to be low because this generally only occurs when changes to the filling and delivery sequencing of multiple USTs is required. Thus, the photograph referred to above points to the UST having been removed, rather than being modified.

A search for underground services is reported to have been undertaken in the vicinity of each borehole. If a metal object the size of a UST was present in the vicinity of borehole BH19 it is considered likely that the underground services locater would have picked it up. Thus, the above lines of evidence indicate that the UST has been removed.

Zinc, copper and lead concentrations exceeding ANZECC 2000 trigger values for the protection of 95% of species in aquatic ecosystems and ammonium, nitrate and phosphorus concentrations exceeding the ANZECC 2000 default trigger values for physical and chemical stressors for slightly disturbed south east Australian estuaries were recorded in groundwater beneath Proposed Lots 1 to 5.

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Given that a substantial component of the elevated nutrient (nitrogen compounds and phosphorus) concentrations recorded in groundwater is likely to include point sources, such as septic system soakage trenches and former waste disposal areas (e.g. acetic acid/ammonium solutions), that will no longer impact on groundwater, it is expected that nutrient concentrations in groundwater will reduce progressively with time.

The elevated heavy metals concentrations recorded in groundwater, particularly zinc, are considered likely to be a result of leaching from the ash. It is expected that capping Proposed Lots 1 to 5, as is proposed, will contribute to a decrease in heavy metals concentrations in groundwater because it will minimise the site rainfall infiltration contribution to groundwater recharge.

It is agreed that there is likely to be little net discharge to Aquarium Passage due to the flat groundwater gradient and the tidal influence from Aquarium Passage. In addition, the dilution factor of 300 estimated by Waste Solutions indicates that the heavy metals and nutrients present in groundwater are unlikely to contribute to an increase in the concentrations of the respective compounds and elements in Aquarium Passage water.

It is noted that the three samples of imported fill (road base) analysed by Waste Solutions were not analysed for organochlorine pesticides (OCPs). Given that sandy gravel road base is likely to have been sourced from a quarry, the potential for OCP impact is considered to be low. In addition, the site is to be capped so there will be minimal opportunities for individuals to come into direct contact with the soil. Analysis of the sandy gravel road base for OCPs is therefore not considered to be necessary.

If you have any queries or wish to discuss any aspect of the third party review, please do not hesitate to contact the undersigned on 3865 6666.

Yours faithfully
Environmental & Earth Sciences QLD
73(2)Irrelevant

73(2)Irrelevant
Third Part Reviewer
705029TPRLetter3.doc

References

1. Geo-Eng Australia Pty Ltd, March 2000. *Preliminary Contamination Assessment, Bulimba A Power Station, Murarrie, Queensland.* Report prepared for Austa Energy.

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ATTACHMENT A

CORRESPONDENCE WITH WASTE SOLUTIONS AUSTRALIA

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ACN 109 442 284 Glaeba (07) Pty Ltd trading as
Environmental & Earth Sciences
QLD
Contaminant Soil Science & Hydrogeology

COPY

13 January 2006

Waste Solutions Australia Pty Ltd
PO Box 514
Ashgrove QLD 4060

Attention: 73(2)Irrelevant
Senior Environmental Engineer

Dear 73(2)Ir

Re: Third Party Review of the Stage 2 Environmental Site Assessment of Proposed Lots 1 – 5, 55 Paringa Road, Murarrie, Queensland

I have now completed my review of the amended version of the Waste Solutions Australia Pty Ltd (Waste Solutions) draft report entitled - *Stage 2 Environmental Site Assessment, 55 Paringa Road, Murarrie* e-mailed to me on 21 December 2005.

In order to finalise the third party review report to the Contaminated Land Unit of the Environmental Protection Agency (EPA), the information listed below is required. Issues relating to the information requested in the letter dated 9 December 2005 (Our ref. 705029-1.doc) have been given the same number.

1. Whilst a figure showing the relationship between existing Lot 294 on SP 135357 and Proposed Lots 1 – 5 has been provided in Appendix A, details of the approximate location of activities with the potential to contaminate soil, surface water and groundwater have not. As previously advised in the letter dated 9 December 2005 (Our ref. 705029-1.doc), *Section 2.3.1 Review of Previous Investigations* is confusing because it is not clear in your report whether the potentially contaminating activities identified occurred on Proposed Lots 1 – 5, the remainder of Lot 294 on SP 135357 and/or Lot 2 on RP 813014. Given that much of this information is available in the previous investigation reports, please comment on why details of the approximate location of potentially contaminating activities have not been provided.

2. Bullet Point 4 of *Section 1.3 Scope of Work* (page 2) has been amended. However, the current statement indicates that a meeting to agree on the required scope of work was attended by Waste Solutions and EPA personnel and the third party reviewer (TPR). The TPR has not attended a meeting with the EPA. The scope of work was discussed with the TPR subsequent

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to the initial meeting between the EPA and Waste Solutions regarding this matter on 31 August 2005. Please amend Bullet Point 4 to reflect this.

3. The original request to comment on whether the differences in the colour of the various imported top soil stockpiles are a function of physical differences in soil composition or the time the stockpiles had been exposed to the elements has not been addressed. Please comment.

4. Whilst comment on the origin of the soil stockpiles referred to at Bullet Point 2 of *Section 2.1 Site Inspection* has been provided, comment on the need for analysis of representative soil stockpile samples to determine whether they are contaminated has not been provided. Please comment.

5. Refer to the comment at Point 1.

6. No further comment.

7. The final sentence of Bullet Point 3 of *Section 3 Methodology* (page 9) states that "*It could not be determined at the time of the investigation whether the UST was still present beneath the site*". Please comment on the need to investigate this area to determine whether the UST is still present.

8. The first sentence of Bullet Point 4 of *Section 3 Methodology* requires clarification as discussed at Point 2 (above). Comment on issues such as fill homogeneity, the volume of the various fill units present and an assessment of the adequacy of the number of data (sampling) points for characterising subsurface conditions has not been provided. Please provide. Refer also to the comments at Point 26 (below).

9. Bullet Point 12 of *Section 6.1 Soil* (page 13) states that "*The PID did not detect TVOVs in the soil samples collected* ---". However, PID readings are not presented in the body of the report or on the bore logs included in Appendix G. Please provide details of the PID readings recorded during the investigation.

10. The first sentence of *Section 5.2 Groundwater* (page 11) makes reference to the use of the ANZECC 2000 trigger values for the protection of 95% of species in aquatic ecosystems. However, heavy metals concentrations in groundwater are then subsequently only compared with Dutch Intervention Levels (paragraph 1, *Section 8.3.1 Contaminants of Concern*). Please comment.

11. Please check the nominated investigation criteria presented in Table 4 (page 11) because the Dutch Intervention value for $C_{10} - C_{36}$ fraction TPH (mineral oil) has not been amended.

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Table 4 still contains a number of inaccuracies including the ANZECC 2000 marine trigger values for silver and nitrate. The silver trigger value should be 1.4 µg/L and the nitrate trigger value is not established. Please note that Table 4 currently does not have a title identifying it as such. Please define the term NR used in the table.

12. The list of samples recording copper concentrations exceeding the environmental investigation level, but below the health based investigation level for "*Standard*" residential use, listed in *Section 6.1 Soil* (page 13) includes sample BH4 5.5-6.0. Sample BH4 5.5-6.0 was not analysed. Please amend.

13. Whilst phosphorus concentrations in groundwater are noted as exceeding ANZECC 2000 trigger values in *Section 6.2 Groundwater* (page 14), there is no discussion of the environmental significance of these results in the report. Please comment.

14. Please refer to the comment at Point 10 (above) regarding comparing heavy metals concentrations in groundwater with the ANZECC 2000 trigger values for the protection of 95% of species in aquatic ecosystems.

15. Bullet Point 13 of *Section 6.1 Soil* makes reference to statistical analysis of the soil heavy metals results being undertaken. However, statistical analysis details are not provided in either the body of the report or appendices. Please provide details of the statistical analysis undertaken, including any assumptions.

16. *Section 7.2 Groundwater* (page 16) makes reference to potential sources of the ammonium present in groundwater being on site septic tanks and atmospheric deposition of nitrogen compounds from nearby industrial sources. Please note that Section 4.3 of the *Preliminary Contamination Assessment, Bulimba A Power Station Site, Murarrie, Queensland* (Geo- Eng Australia, March 2000) states that "*up to 10 000 L of chem-clean residues (acetic acid/ammonium solutions with possibly some minor quantities of iron and copper) was disposed of on the grass area between the workshop building and Aquarium Passage* ---".

17. No further comment.

18. No further comment.

19. No further comment.

20. No further comment.

21. Whilst a copy of Figure 5 has been provided, the left hand side of the figure is not shown. Please provide a complete copy of Figure 5.

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22. The first two sentences of paragraph 2 of *Section 8.3.4 Conceptual Risk Model* (page 20) discuss the potential for contaminants to reach identified receptors. The two sentences appear to contradict one another. Please clarify.

    The first paragraph also refers to the exposure pathways having limited effectiveness. Surely exposure pathways are either complete or incomplete? Please comment.

23. No further comment.

24. No further comment.

25. No further comment.

26. Bullet Point 12 of *Section 6.1 Soil* makes reference to the composition of the ash present beneath Proposed Lots 1 – 5 varying "*from black sandy ash to grey as (sic) with gravel and cobbles*". It is stated in *Section 7.1 Soil* that the ash "*was likely to have been imported from the power station operations over a period of years and a variable type of material would have been imported during this time*". With the exception of a small amount of ash imported from Bulimba B power station, the source of the ash is reported to have been Bulimba A power station. Given that coal burnt in power stations typically produces clinker, siliceous slag and ash (i.e. fine powdery combustion residue), it is expected that the ash fill beneath Proposed Lots 1 – 5 would be fairly homogeneous. Based on the statement that "*The ash material is heterogeneous in nature*" (Bullet Point 6 of *Section 9.1 Soil*), please comment on the variation expected in the ash imported to fill Proposed Lots 1 – 5. Please comment on whether the gravel and cobbles observed in the ash are clinker and/or siliceous slag derived from burning coal, or rock derived from natural lithologic units.

27. The lead TCLP result for sample BH19 0.5-1.0 has not been entered in Table 1.

28. No further comment.

29. Please refer to the comments at Point 26.

30. It is not clear what the point of the final sentence of paragraph 3 of *Section 7.1 Soil* is. Please clarify.

31. The final sentence of paragraph 3 of *Section 7.2 Groundwater* (page 17) makes reference to reducing conditions beneath Proposed Lots 1 – 5 have significance for the fate of other contaminants. Please specify which other contaminants this statement relates to.

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Reference is also made to reducing conditions decreasing the attenuation of hydrocarbons. Given that environmentally significant hydrocarbon compound concentrations were not detected in groundwater, please comment whether this is relevant.

32. Paragraph 4 of *Section 8.4 Groundwater* makes reference to an assumed aquifer thickness of 4 m and a hydraulic conductivity estimate of 100 m/day. Please provide details of the basis for these assumptions.

33. Please provide a copy of the draft Site Management Plan referred to in the final paragraph of *Section 9.2 Groundwater*.

In order to expedite the review process, please provide the information requested as either tracked changes in an amended version of the draft report or respond to each of the points raised above.

If you have any queries or require clarification of any of the issues raised above, please do not hesitate to call the undersigned on 3865 6666.

Yours faithfully
Environmental & Earth Sciences QLD

73(2)Irrelevant

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9 December 2005

Waste Solutions Australia Pty Ltd
PO Box 514
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Attention: 73(2)Irrelevant
Senior Environmental Engineer

Dear 73(2)I

Re: Third Party Review of the Stage 2 Environmental Site Assessment of Proposed Lots 1 – 5, 55 Paringa Road, Murarrie, Queensland

I have now completed my review of the following report prepared by Waste Solutions Australia Pty Ltd (Waste Solutions) - *Stage 2 Environmental Site Assessment, 55 Paringa Road, Murarrie*.

In addition, the following reports relating to (current) Lot 294 on SP 135357 and Lot 2 on RP 813014 have been reviewed:

— Geo-Eng Australia Pty Ltd, March 2000. *Preliminary Contamination Assessment, Bulimba A Power Station Site, Murarrie, Queensland.* Report prepared for Austa Energy;
— Geo-Eng Australia Pty Ltd, August 2000. *Preliminary Groundwater Contamination Assessment, Bulimba A Power Station Site, Murarrie, Queensland.* Report prepared for Queensland Power Trading Corporation;
— Geo-Eng Australia Pty Ltd, November 2001. *Bulimba A Power Station Site Contamination Assessment, Murarrie, Queensland.* Report prepared for Enertrade;
— PPK Environment & Infrastructure, August 2002. *Methane Assessment – Bulimba A Power Station, Murarrie, Queensland.* Report prepared for Enertrade;
— PPK Environment & Infrastructure, November 2002. *Soil Gas Assessment of Methane Generation at Former Bulimba A Power Station, Murarrie, Queensland.* Report prepared for Enertrade; and
— Parsons Brinckerhoff Australia Pty Ltd, February 2004. *Former Bulimba A Power Station, Murarrie – Desktop Geotechnical Study Review*. Report prepared for Enertrade.

In order to finalise the third party review report to the Contaminated Land Unit of the Environmental Protection Agency (EPA), the information listed below is required.

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1. Please provide a figure showing the relationship between existing Lot 294 on SP 135357 and Proposed Lots 1 – 5. It will assist the review process if the location of former infrastructure and previous sampling locations are shown on the figure.

2. Bullet point 4 of *Section 1.3 Scope of Work* (page 1) makes reference to confirmation of the scope of work with the third party reviewer (TPR) during a site visit on 5 October 2005. It should be noted that the agreed scope of work involved drilling five boreholes on each of the five proposed lots, as had been previously agreed with the Contaminated Land Unit of the Environmental Protection Agency (EPA) during a meeting on 31 August 2005.

3. Bullet point 2 of *Section 2.1 Site Inspection* makes reference to various stockpiles of light brown, brown and dark brown stockpiles of top soil. Please comment on whether the differences in colour are a function of physical differences in soil composition or the time the stockpiles had been exposed to the elements.

4. Please comment on the origin of the soil stockpiles referred to at Bullet point 2 of Section 2.1 and the need for analysis of representative soil samples to determine whether they are contaminated.

5. Section 2.3.1 is confusing because it is not clear whether the activities identified as having the potential to contaminate soil, surface water and groundwater occurred on Proposed Lots 1 – 5, the remainder of Lot 294 on SP 135357 and/or Lot 2 on RP 813014. Please identify the approximate location of each of the potentially contaminating activities referred to in Section 2.3.1. This information may be able to be easily presented on a figure.

6. The final sentence of *Section 2.4 Regional Geology* (page 8) states that "*The site has reportedly been filled with a variety of power station wastes from the demolition of the Bulimba A Power Station and ash from the boiler furnaces*". Please provide details of the demolition waste used to fill Proposed Lots 1 - 5.

7. The first sentence of Bullet Point 3 of *Section 3 Methodology* (page 9) makes reference to borehole BH19 being drilled in the vicinity of a former underground (fuel) storage tank (UST). Please comment on the likelihood of the UST still being present.

8. The third sentence of Bullet Point 3 of *Section 3 Methodology* (page 9) states that "*Further to discussions with the TPR, Waste Solutions determined that four sample locations per lot to a maximum depth of 7.5 m would be sufficient, as the combined five lots could be treated as one site*". In a facsimile to 73(2)Irrelevant of Waste Solutions dated 1 November 2005, the TPR advised that justification for reducing the sampling density from five sampling points to four per proposed lot would be required in the final report. During a subsequent telephone conversation between 73(2)Irrelevant of Waste Solutions and the TPR, the TPR

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advised that based on the investigation findings there appeared to be no reason why four sampling points per proposed lot would not be sufficient. However, the TPR also advised that the reason for reducing the sampling density should be stated, including justification as to why the reduced sampling density is considered to be sufficient. This included consideration of issues such as fill homogeneity, consideration of the volume of the various fill units present and an assessment of the need for additional analysis, if it was considered that increasing the number of data (sampling) points was necessary to adequately characterise subsurface conditions. Please justify the investigation sampling density.

Given the history of Lot 294 on SP 135357, treating the area encompassing the five proposed lots as one site is considered to be a sensible approach. However, this should be justified by relating the sampling density to AS 4482.1 – 1997.

9. Bullet point 6 of *Section 3 Methodology* makes reference to the use of a photoionisation detector (PID) to determine relative concentrations of volatile organic compounds. There is no further comment regarding PID readings in the body of the report and PID readings are not presented in a table or on each borehole log. Please provide details of the PID readings recorded during the investigation.

10. The first sentence of *Section 5.2 Groundwater* (page 11) makes reference to the use of the ANZECC 2000 trigger values for the protection of 90% of species in aquatic ecosystems. Given that the water present in Aquarium Passage is connected to Moreton Bay, an ecologically sensitive area, via the Brisbane River, please justify the use of guidelines recommended for use for highly disturbed ecosystems in situations where there is stakeholder acceptance.

11. Please check the nominated investigation criteria presented in Table 4 (page 11) because the table seems to contain a number of inaccuracies; e.g. the Dutch intervention value is for $C_{10} - C_{36}$ fraction TPH (mineral oil), not total TPH as stated. The ANZECC 2000 marine trigger values appear to be a mixture of fresh and marine waters values.

    Is there any reason why the ANZECC 2000 trigger value for chromium (VI) has been quoted in preference to that for chromium (III)?

12. It is noted that the list of samples recording copper concentrations exceeding the environmental investigation level, but below the health based investigation level for *"Standard"* residential use, listed in *Section 6.1 Soil* (page 13) does not include samples BH4 0.5–1.0 and BH18 0.5–1.0 which recorded copper concentrations of 90 mg/kg and 230 mg/kg, respectively.

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13. Bullet point 8 of *Section 6.2 Groundwater* (page 14) makes no reference to guidelines for ammonia and phosphate in groundwater. Please comment.

14. Bullet point 9 of *Section 6.2 Groundwater* (page 14) makes no reference to guidelines for heavy metals concentrations in groundwater. *Table 3 Summary of Groundwater Results* nominates Dutch Intervention trigger values as guideline levels. Given the proximity of Aquarium Passage and the comment at Point 10, please comment on why ANZECC 2000 trigger values for the protection of 95% of species in slightly – moderately disturbed ecosystems have not been used.

15. The significance of heavy metal concentrations exceeding the health based investigation level for commercial/industrial use referred to in *Section 7.1 Soil* (page 15) is not discussed. Please comment.

16. *Section 7.2 Groundwater* (page 15) makes reference to the ammonium present in groundwater being derived from atmospheric deposition of nitrogen compounds from the nearby fertiliser manufacturing facility. If that were the case, would it not be expected that ammonium concentrations in groundwater would be similar at the three locations sampled?

    Further comment regarding the significance of the ammonium concentrations recorded in groundwater at the three monitoring bore locations is required. This should include a realistic assessment of the likely nature of the source, taking into account the ammonium concentration recorded at each monitoring bore location, the implications of the TKN and NO_X results and the proximity to Aquarium Passage.

17. *Section 7.2 Groundwater* (page 15) makes reference to the elevated zinc concentrations in groundwater being associated with industrial activities at the site. It is noted that ash typically contains elevated zinc concentrations. Please comment on the industrial activities that are considered likely to have contributed to the zinc concentrations recorded in groundwater.

18. Like many other heavy metals, zinc is increasingly mobile under acidic conditions, hence, please comment on the statement (bottom of page 15) that "*Generally most metals will be subject to reduced mobility in a neutral to alkaline environment with the exception of zinc*".

    Please comment on the presence or absence of factors that are likely to retard the migration of zinc in groundwater beneath proposed Lots 1 - 5.

19. *Section 8.3.1 Contaminants of Concern* (page 17) makes reference to the use of TCLP results to assess heavy metals mobility in the environment. Given that the groundwater pH results indicate neutral to slightly alkaline conditions at the site, please comment on the relevance of using TCLP test results for this purpose.

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20. *Section 8.3.3.2 Ecological Receptors* (page 18) states that "*Ammonia may be considered more of a risk in particular with regards to aquatic fauna such as fish*". Please comment on the ecological risk associated with heavy metal concentrations in groundwater, particularly zinc.

21. *Section 8.3.4 Conceptual Risk Model* refers to a conceptual risk model being shown in Figure 5. However, Figure 5 was not included. Please provide a copy of Figure 5.

22. The first two sentences of paragraph 3 of *Section 8.3.4 Conceptual Risk Model* (page 19) discuss the potential for contaminants to reach identified receptors. The two sentences appear to contradict one another. Please clarify.

23. The last sentence of paragraph 5 of *Section 8.3.4 Conceptual Risk Model* (page 19) states that "*This isolated sample* (BH11 0.5 – 1.0) *is not considered to represent a high risk to site users*". Please elaborate on why this is considered to be the case.

24. Bullet point 3 of *Section 8.4 Groundwater* (page 19) refers to the down stream discharge point for *Bundamba* Creek. Surely this should be Bulimba Creek.

25. Bullet point 3 of *Section 8.4 Groundwater* (page 19) refers to Bulimba Creek having poor water quality, including high nutrient levels. This appears to be being used as a reason why the ammonium concentrations in groundwater are not considered to pose a risk to the ecological values of Aquarium Passage. Discharges to the creek should not contribute to the deterioration in Aquarium Passage water quality. Please comment.

26. Bullet point 6 of *Section 9 Conclusions* makes reference to the heterogeneous nature of the ash present beneath Proposed Lots 1 – 5. However, there is no discussion of the heterogeneity of the ash in the body of the report. Please comment.

27. The TCLP results for sample BH1 1.0-1.5 presented in *Table 1 – Summary of Laboratory Results* are presented in the column for sample BH1 0.5-1.0. The results for sample BH19 0.5-1.0 have not been included in Table 1. In addition, all lead and nickel TCLP results have been transposed.

28. *Table 1 – Summary of Laboratory Results* shows that sample BH5 0.2-0.5 recorded a manganese concentration of 1 501 mg/kg. The official laboratory results indicate that sample BH5 0.2-0.5 was not analysed for manganese. Please comment.

29. The presence of gravel is shown on the bore logs for boreholes BH10, BH13 and BH14. Please comment on whether the gravel is considered to be fill and provide details of the composition of the gravel clasts.

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If you have any queries or require clarification of any of the issues raised above, please do not hesitate to call the undersigned on 3865 6666.

Yours faithfully
Environmental & Earth Sciences QLD

73(2)Irrelevant

73(2)Irrelevant

Third Party Reviewer

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FAXED 1/11/05

ACN 109 442 284 Glaeba (07) Pty Ltd trading as
Environmental & Earth Sciences
QLD
Contaminant Soil Science & Hydrogeology

Facsimile Transmission Cover Sheet

DATE:	1 November 2005	**PHONE:**	3366 5778
TO:	Waste Solutions Australia Pty Ltd	**FAX:**	3366 7302
ATTENTION:	73(2)Irrelevant	**E-MAIL:**	
FROM:	73(2)Irrelevant	**JOB #:**	705029
RE:	Draft Site Management Plan & Other Issues – Former Bulimba A Power Station Site, 55 Paringa Road, Murarrie		

Number of pages for this transmission: Cover Sheet + 1 page(s)

Please check that you received correct number of pages and advise if otherwise

73(2)Irrele

I have now had an opportunity to review the draft site management plan (SMP) in conjunction with the laboratory results and details of borehole locations provided. I am comfortable with the majority of the draft SMP. However, it is requested that Section 3.4 be amended to read "*The site shall be covered with a minimum of a 300 mm thick layer of grass covered top soil, buildings or a low permeability layer such as bitumen or concrete to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water*".

In addition, please review the comment in Section 1.0 Summary of Contamination regarding aluminium, barium, iron, silver, strontium and vanadium concentrations in soil either not being detected or being below Queensland environmental investigation levels. "Contaminants" has been written twice on the final line of Section 3.8.

It is noted that the current sampling density of four locations per proposed lot is less than that agreed to in the meeting with the Environmental Protection Agency (EPA) on 31 August 2005. Please provide justification for the current sampling density.

The groundwater laboratory results provided on 26 October 2005 do not include polycyclic aromatic hydrocarbon (PAH) analysis results. In order to complete an assessment of the potential environmental risks associated with the site, PAH analysis of groundwater samples is required to be undertaken. PAH analysis of groundwater was included in the proposed groundwater analytical suite discussed with the EPA at the 31 August 2005 meeting.

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PO Box 174
Taigum QLD 4018

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Copper, nickel, lead and zinc concentrations in groundwater in at least one of the three groundwater bores at the site exceed the ANZECC 2000 trigger value for the protection of 95% of species in slightly – moderately disturbed ecosystems. In order to properly assess the potential environmental risk(s) associated with the above heavy metals, consideration of the effect of hardness is required.

The Kjeldahl nitrogen concentrations recorded in groundwater (11 to 23 mg/L) are sufficiently high that they are of potential concern if a substantial proportion of the nitrogen detected is present as ammonium. Consideration should therefore be given to analysing the groundwater samples for ammonium.

If you have any queries or wish to discuss any matter relating to the issues raised above, please do not hesitate to call me on 3865 6666.

Regards

73(2)Irrelevant

73(2)Irrelevant

Third Party Reviewer

705029fax2

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ATTACHMENT B

DRAFT SITE MANAGEMENT PLAN

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THIS DRAFT MANAGEMENT PLAN IS SUBJECT TO TPR APPROVAL

DRAFT SITE MANAGEMENT PLAN (SMP)–
***Environmental Protection Act 1994 (EP Act)*, Chapter 7 Part 8 Division 5**

DATE: 25 January 2006

RPD Lots 1-5, 55 Paringa Road, Murrarie EPA File: BNE3112

1.0 SUMMARY OF CONTAMINATION

- The site is the former Bulimba 'A' Power Station. Equipment/operations on the site that potentially cause contamination were:
  - plant maintenance and overhaul workshops;
  - chemical and materials testing laboratories;
  - small metal-melting furnace;
  - underground fuel storage;
  - abrasive blasting;
  - on-site disposal of chem-clean residues (acetic acid/ammonium solutions, with possibly some iron and copper;
  - on-site disposal of ash and coke
- The contaminants of concern exceeding nominated Investigation Criteria are:
  - Soil (Qld EPA Environmental Investigation Levels (EILs)):
    - Heavy Metals:
      - Copper (max 1830 mg/kg);
      - Lead (max 2680 mg/kg); and
      - Zinc (max 570 mg/kg).

Note: Contaminants were detected within the ash/coke fill layer beneath the site at depths ranging from near surface to 6.5 metres below ground level.

  - Groundwater (ANZECC 2000 trigger values for the protection of aquatic ecosystems):
    - Copper max 24µg/L
    - Nickel max 13µg/L
    - Lead max 12µg/L
    - Zinc max 415µg/L
    - Molybdenum max 19µg/L
    - Vanadium max 35µg/L
    - Total Nitrogen max 23 000µg/L
    - NO_X max 960µg/L
    - Ammonia max 16 000µg/L
    - Total Phosphorus max 5 140µg/L

Note: Groundwater was identified at a minimum depth of 3m below ground level.

- Other contaminants of concern that were either not detected in the soil, below Qld EPA EILs or for which guidelines have not been established were:
  - Heavy Metals: Aluminium, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, molybdenum, nickel, selenium, silver, strontium, thallium, tin, vanadium, mercury and iron;
  - Total Petroleum Hydrocarbons (TPH) (max 210 mg/kg ($C_{10} - C_{36}$ fraction)).
  - Polynuclear Aromatic Hydrocarbons (PAH);

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- Polychlorinated Biphenyls (PCBs); and
- Organochlorine Pesticides (OCPs).

- Other contaminants of concern in the groundwater that were either not detected or below ANZECC 2000 trigger values for the protection of aquatic ecosystems or Dutch Intervention values were:
  - Heavy Metals: arsenic, cadmium, chromium, selenium and mercury;
  - TPH/BTEX;
  - PAH;
  - PCBs; and
  - OCPs.

The entire subject site is underlain by the ash/coke fill. The surface of the site is partially grass-covered and some areas consist of a roadbase material cover, over the ash/coke fill.

Figure 1 (attached) shows the locations and depths of the impacted material.

2.0 OBJECTIVES OF THE SMP

The purpose of this SMP is to manage 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 of the land (as defined in the *Environmental Protection Act 1994*) is to ensure that this SMP and any variations 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 Site Use. The site may be used for industrial/commercial use, as described in the *National Environment Protection (Assessment of Site Contamination) Measure, December 1999, Table 5-A Health Investigation Levels Setting F.*

3.3 *Provision of SMP to appropriate persons.* The owner 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 commencement of site works. All persons occupying or working on the site must comply with the requirements of the SMP.

3.4 *Surface capping and protective barriers.* The site shall be covered with a minimum of a 300 mm thick layer of grass-covered topsoil, buildings, or a low-permeability layer such as bitumen or concrete, to maintain a barrier between site users and heavy metals contaminated ash and to minimise the potential for heavy metals contaminated ash to enter the environment due to remobilisation by wind and surface water and leaching by infiltrating surface water.

No excavation or penetration of the approved capping may be carried out without written authorisation from the EPA.

3.5 *Soil excavation & Removal.* Any soil excavated on the site must be assessed for contaminants of concern to determine if the material is contaminated thereby allowing

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for the development and implementation of appropriate management and disposal/re-use options.

Representative sampling and analysis of soil from excavations in contaminated areas 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 site earthworks or excavation, offensive or noxious odours and/or evidence of gross contamination not previously detected is observed, site works are to cease in that area and action taken to immediately abate the environmental harm. The administering authority is to be notified in writing within 2 business days of detection and advised of appropriate remedial action.

Any remedial action is to be developed by an appropriately qualified and experienced person in accordance with Section 381 of the EP Act.

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.

Groundwater beneath the site has been found to contain elevated heavy metals, including copper, lead and zinc, ammonium and total phosphorus concentrations. In the event that future development of the site necessitates dewatering and/or the extraction of groundwater, a water management plan shall be prepared, prior to the extraction of groundwater. The water management plan shall detail the treatment or disposal measures that will be implemented to ensure that any contaminated groundwater extracted does not cause environmental harm.

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 in contaminated areas. The WH&S plan must specifically address contaminants of concern.

4.0 MONITORING AND REPORTING

A site inspection is to be undertaken at biennial intervals to ensure that capping and protective barriers including vegetative covers remain in sound condition at all times in accordance with section 3.4.

Records are to be kept of all inspections, any soil excavation in contaminated areas, disposal permits and site management plan compliance for review by the administering authority from time to time.

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

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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.

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STATUTORY DECLARATION

Address of Site Investigated: Proposed Lots 1 – 5, 55 Paringa Road, Murarrie, QLD 4172.

Real Property Description: Lot 294 on SP 135357, Parish of Bulimba, County of Stanley.

Title of Report: *Third Party Review of the Stage 2 Environmental Site Assessment of Proposed Lots 1 – 5, 55 Paringa Road, Murarrie* and *Draft Site Management Plan.*

I 73(2)Irrelevant of Environmental & Earth Sciences QLD, 317 Handford Road, Taigum, QLD 4018 in the State of Queensland, do solemnly and sincerely declare that:

- I was the preparer of the above report.
- I am a member of the Australian Institute of Geoscientists and my qualifications and experience as outlined in Professional Competencies (Document CR – VQ9831/982710001 – 5 +) 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 the administering authority; and

I certify that:

- The report addresses the relevant matters for the investigation and is factually correct;
- The opinions expressed in it are honestly and reasonably held; and
- The site has been assessed to a standard such that contaminated soil and groundwater may be safely managed under the conditions of the attached draft site management plan and the site listed on the EMR as managed.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the *Oaths Act 1867.*

Signature 73(2)Irrelevant

Name 73(2)Irrelevant

Taken and Declared before me at Brisbane this 1st day of February 2006.

Witness Signature 73(2)Irrelevant

(Justice of the Peace)

JUSTICE OF THE PEACE
ATTORNEY-GENERAL'S DEPARTMENT
Reg. No. 2662
QUALIFIED

CONTAMINATED LAND SECTION
02 FEB 2006

Name 73(2)Irrelevant

R

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STATUTORY DECLARATION

Address of Site Investigated:	55 Paringa Rd Murrarie QLD 4172
Real Property Description:	Lots 1,2, 3, 4 and 5 on unregistered, but Brisbane City Council (BCC) approved reconfiguration plan, dated 28 February 2005, by KFM Partnership, Plan Number 3403-00-021c
Title of Report:	Stage 2 Environmental Site Assessment 55 Paringa Road, Murarrie

I, 73(2)Irrelevant of Waste Solutions Australia Pty Ltd (Level 1, 254 Waterworks Rd, Ashgrove) on behalf of Snowday Pty Ltd and Gale Developments Pty Ltd in the State of Queensland, do solemnly and sincerely declare that:

1. I was the investigator and report preparer for the Stage 2 Environmental Site Assessment report described above;
2. I am a member of the Institution of Engineers Australia and my qualifications and experience (submitted previously to the EPA) are relevant to this investigation;
3. I have not knowingly included any false, misleading or incomplete information in the report;
4. I have not knowingly failed to reveal any relevant information or document to the 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 honest and reasonably held.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1867.

Signature 73(2)Irrelevant .....

Name ..... 73(2)Irrelevant .....

Taken and declared before me at Brisbane this 27th day of January 2006

Witness (Justice of the Peace/Commissioner for Declarations/Solicitor)

Signature 73(2)Irrelevant .....

Name 73(2)Irrelevant .....

Solicitor

R

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Waste Solutions Australia Pty Ltd

27 January 2006

73(2)Irrelevant

Third-Party Reviewer
Environmental & Earth Sciences
PO Box 174
TAIGUM QLD 4018

Ref: A399

Dear 73(2)Irre

RE: 55 PARINGA ROAD, MURARRIE STAGE 2 ENVIRONMENTAL SITE ASSESSMENT REPORT

Please find attached a copy of the Stage 2 Environmental Site Assessment Report for 55 Paringa Road, Murarrie.

We trust this meets with your requirements.

If you have any questions, please contact 73(2)Irrelevan or myself on 07 3366 5778.

Yours Sincerely,

WASTE SOLUTIONS AUSTRALIA PTY LTD

73(2)Irrelevant

73(2)Irrelevant

Senior Environmental Engineer

Cc 73(2)Irrelevant (Concept Engineering)

73(2)Irrelevant (Gale Developments Pty Ltd)

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ecoaccess
environmental licences and permits

Application form

Contaminated Land – Part B

Application for assessment of a site investigation / validation report

This form asks for activity specific details in relation to an application under Sections 375 and 390 of the *Environmental Protection Act 1994* for an assessment of a site investigation/validation report. Please read the information sheets and any guidelines included with your application kit to understand the environmental management and conservation issues, policies and procedures that relate to the activities proposed.
Note: Your application must be accompanied by a General Details – Part A form.

1. Lodgement details

Complete this section only if form not lodged by applicant

NAME 73(2)Irrelevant	TELEPHONE 07 3366 5778
COMPANY/ORGANISATION WASTE SOLUTIONS AUSTRALIA P/L	
POSTAL ADDRESS PO Box 514, ASHGROVE QLD 4060	
EMAIL 73(2)Irr @wastesolutions.biz	FACSIMILE 07 3366 7302

2. Site owner's details

An Agent's address is not acceptable.

NAME SNOWDAY P/L 73(2)Irrelevant	TELEPHONE 73(2)Irrelevant
POSTAL ADDRESS 73(2)Irrelevant	FACSIMILE 07 55 77 8313

3. Site details

If you require additional space, attach the information on a separate sheet marked "Site Details."

STREET ADDRESS 55 Paringa Road, Murarrie	
LOT(S) Proposed Lots 1-5, within LOT 294	PLAN(S) SP135357
LOCAL GOVERNMENT AUTHORITY BRISBANE CITY COUNCIL	
NOTIFIABLE ACTIVITY/POSSIBLE CONTAMINATING ACTIVITY WASTE STORAGE TREATMENT OR DISPOSAL ABRASIVE BLASTING	

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Environmental Protection Agency
www.epa.qld.gov.au ABN 87 221 158 786

Queensland Government
Environmental Protection Agency
Queensland Parks and Wildlife Service

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Application for assessment of a site investigation / validation report

CURRENT LAND USE	PROPOSED LAND USE
VACANT	COMMERCIAL / INDUSTRIAL

STREET ADDRESS	
LOT(S)	PLAN(S)
LOCAL GOVERNMENT AUTHORITY	
NOTIFIABLE ACTIVITY/POSSIBLE CONTAMINATING ACTIVITY	
CURRENT LAND USE	PROPOSED LAND USE

4. Details of report

4.1 Is a development application pending under the *Integrated Planning Act 1997*?

☐ NO ☒ YES

4.2 The attached report contains (as per Guidelines for the Assessment and Management of Contaminated Land in Queensland)

☐ Stage 1 and Stage 2 investigation

☒ Stage 3 and Stage 4 remediation and validation report

If previous submissions have been made quote:
Ref no. BNE 312

4.3 Is a response required from the EPA at this time or is further information following?

☒ Response required ☐ Further information following

5. Applicant checklist

☒ Application form(s) completed and signed.

☒ Permit fees paid or enclosed (if applicable).

☒ Enclosed statutory declarations by investigators, preparers and owners as per Section 383 of the *EP Act*.

☒ Enclosed signed consultant's report (as per Guidelines for the Assessment and Management of Contaminated Land in Queensland).

☒ Enclosed legible copy/copies of proof of ownership of site/s clearly showing the full name(s) of the registered proprietor(s) e.g. current certificates of Title or Title Searches.

☒ Enclosed legible copy/copies of all relevant registered plans (available from the Titles Section, Department Natural Resources and Mines) clearly showing location of the site/s and current registered plan details.

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Application form – Part B

Application for assessment of a site investigation / validation report

☒ Enclosed copy of a street map/area map clearly showing location of property.

Please return your completed application kit to:

Licences and Permits Co-ordination Unit
Environmental Protection Agency

PO Box 155
Brisbane
Queensland 4002

Enquiries: **1300 368 326**
Facsimile: (07) 3115 9600
eco.access@epa.qld.gov.au

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Snowday Pty Ltd

&

Gale Developments Pty Ltd

STAGE 2 ENVIRONMENTAL SITE ASSESSMENT

55 PARINGA ROAD MURARRIE

Prepared By: WASTE SOLUTIONS AUSTRALIA PTY LTD

JANUARY 2006

RN 05/A399-1

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PROPERTY DESCRIPTION

SITE ADDRESS	55 Paringa Road, Murarrie, Qld 4172
LOT DESCRIPTION:	Lots 1,2, 3, 4 and 5 on unregistered, but Brisbane City Council (BCC) approved reconfiguration plan, dated 28 February 2005, by KFM Partnership, Plan Number 3403-00-021c County of Stanley, Parish of Bulimba (refer Registered Plan in *Appendix F*)
OWNER:	Gale Developments Pty Ltd and Snowday Pty Ltd (Tenants in Common) (Refer Title Search *Appendix D*)
LOCAL AUTHORITY AREA:	Brisbane City Council
CURRENT ZONING:	General Industry
CURRENT USE:	Vacant land
FUTURE ZONING:	General Industry
PROPOSED USE:	Industrial
LISTED ON THE EMR	Yes (search reproduced in *Appendix E*)
LISTED ON THE CLR:	No (search reproduced in *Appendix E*)

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STAGE 2 ENVIRONMENTAL SITE ASSESSMENT

OF PROPOSED LOTS 1-5, 55 PARINGA ROAD, MURARRIE

1 INTRODUCTION

1.1 Background

Waste Solutions Australia Pty Ltd (WSA) was commissioned by Snowday Pty Ltd (Snowday) and Gale Developments Pty Ltd (Gale) to undertake a Stage 2 environmental site assessment (ESA) of Proposed Lots 1-5 on an unregistered, but Brisbane City Council (BCC) approved, reconfiguration plan, dated 28 February 2005, by KFM Partnership, Plan Number 3403-00-021c (*Appendix A*). The current Lot description is Lot 294 on SP135357 and covers an area of 51,500 m^2.

The areas covered by each proposed Lot are detailed below.

Lot 1	2,700 m^2
Lot 2	2,000 m^2
Lot 3	2,000 m^2
Lot 4	2,000 m^2
Lot 5	3,800 m^2
TOTAL	12,500 m^2

Proposed Lots 1-5 are all within Lot 294 on SP135357.

The site is located at 55 Paringa Road, Murarrie, Brisbane (the site) and includes all five proposed Lots. The site formally contained workshops and other infrastructure associated with the original Bulimba "A" power station which was located to the south of proposed Lot 5, as shown in *Appendix A*. The site IS listed on the Queensland Environmental Protection Agency (EPA) Environmental Management Register (EMR) but NOT listed on the Contaminated Land Register (CLR). Copies of these are reproduced in *Appendix E*.

A Third Party Reviewer (TPR), 73(2)Irrelevant of Environmental & Earth Sciences (EES) has been appointed by the EPA. 73(2)Irrelevant has reviewed and approved this report.

1.2 Objectives

The objective of the work was to assess the concentration and extent of soil and groundwater contamination which may exist on the subject land in order to allow proposed future industrial development to proceed.

1.3 Scope of Work

The scope of works carried out for the project involved the following:

- Conduct an inspection of the site and identify areas of potential environmental concern;
- Review current historical titles and Department of Natural Resources, Mines and Energy (DNRME) records for the site;

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- Review site historical aerial photographs;
- A meeting was attended by WSA and the EPA Contaminated Land Unit on 31 August 2005 at which it was agreed that the sampling density would be five boreholes per proposed lot. This was subsequently confirmed with the TPR during a site meeting on 5 October 2005. Based on the depositional history and the uniform nature of fill at the site (i.e. the area was used for the exclusive disposal of power station ash for the life of the power station), the sampling density was reduced from five sampling locations to four sampling locations per proposed lot. Upon receiving the laboratory results, the investigation findings, including the reduced sampling density, was discussed with the TPR during which the TPR agreed that four sampling locations per proposed lot was acceptable, provided that consideration of issues such as fill homogeneity and the number of data (sampling) points could be shown to support it;
- Drilling of twenty (20) boreholes to a maximum depth of 7.5 metres below ground level (mbgl);
- Installation of three (3) groundwater monitoring wells;
- Collection of fifty-four (54) soil samples, plus three duplicates for selective laboratory analysis of:
  - total petroleum hydrocarbons (TPH);
  - benzene, ethylbenzene, toluene and xylenes (BTEX);
  - polycyclic aromatic hydrocarbons (PAH);
  - organochlorine and organophosphate pesticides (OCOP);
  - polychlorinated biphenyls (PCB);
  - a suite of 8 metals (arsenic [As], cadmium [Cd], chromium [Cr], copper [Cu], lead [Pb], nickel [Ni], zinc [Zn] and mercury [Hg]); and
  - a suite of 23 metals (aluminium [Al], antimony [Sb], As, barium [Ba], beryllium [Be], boron [Br], Cd, Cr, cobalt [Co], Cu, Pb, manganese [Mn], molybdenum [Mo], Ni, selenium [Se], silver [Ag], strontium [Sr], thallium [Tl], tin [Sn], vanadium [V], Zn, Hg and iron [Fe]).
- Collection of three (3) groundwater samples, plus one duplicate, plus one rinsate sample, plus one trip blank for selected laboratory analysis of:
  - TPH;
  - BTEX;
  - PAH;
  - OCP;
  - PCB;
  - a suite of 8 metals, plus Se, Mo and V;
  - pH;
  - Electrical Conductivity (EC);
  - Total Nitrogen (N); and
  - Total Phosphorus (P).
- Preparation of a report suitable for submission to the Third Party Reviewer (TPR) and the EPA, detailing the findings of the investigation.

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2 SITE DESCRIPTION

2.1 Site Inspection

The following observations were made during the site inspection conducted by WSA personnel on October 10 and 11, 2005:

- The site is vacant and has been cleared with the exception of an area of older trees remaining on the southeastern side of Lot 5. Some electrical power poles and a small corrugated iron substation (approximately 2.5m x 1.5m) are located between Lot 2 and 3. (refer *Photo 1, Appendix B*);
- Stockpiles of imported materials are stored on the site. Fifteen stockpiles of brown topsoil are stored on Lots 1 and 2, four stockpiles of light brown topsoil are located on Lot 2 and two stockpiles of dark brown topsoil are located on Lot 1. Each of the topsoil stockpiles is approximately 10 m^3. Anecdotal evidence indicates that these stockpiles were sourced from a surface scraping of the topsoil from the site. During site works, a sample of topsoil was collected (BH20 0.2-0.5). This is discussed in *Section 5.1*. Stored on Lot 5 are: one large stockpile of gravel (approximately 80 m^3); one stockpile of cobble-sized recycled concrete (approximately 120 m^3) (refer *Photo 2, Appendix B*); and one stockpile of mulch (approximately 150 m^3) (refer *Photo 3, Appendix B*). A small pile of waste material has been stockpiled on Lot 5, between the two abovementioned stockpiles (refer *Photo 2, Appendix B*). Upon visual inspection, no impact of potential contaminants was observed. The exact origin of the material was not known at the time of the investigation.
- Almost the whole surface of the site is exposed topsoil/ash fill with a small area of imported roadbase fill (estimated 120 m^3) in the northeast portion of the site.
- Surface staining was not observed during the site inspection.
- Vegetation on the site did not appear to be impacted by potential contaminants.
- There is no evidence of chemical storage on the site.
- There are currently no notifiable activities operating on the site.
- The site slopes gently to the east with a gradient of < 5% and along the eastern edge of Lot 1 slopes steeply toward the Aquarium Passage; and
- A power service easement and a gas service easement run through the eastern side of the site. An open pit containing a pump station is located near the intersection of Lots 1, 2 and 5.

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Surrounding Land Use

The surrounding land use is described below in *Table 1*.

Table 1 Description of Surrounding Land Use

Northwest	Paringa Road, followed by commercial properties and the Brisbane River
Southwest	Unnamed bitumen road followed by a vacant block
South	A commercial business
Southeast	Vacant land followed by Aquarium Passage
East	Aquarium Passage. Aquarium Passage is the downstream discharge point for Bulimba Creek
Northeast:	Vacant land followed by commercial properties

2.2 Proposed Use

It is proposed to continue with general industrial activities on the site.

2.3 Site History

In order to determine past land use on the subject land, a review of the site history using previous investigation reports, aerial photographs, historical titles, environmental management and contaminated land registers has been undertaken. A summary of the findings is given below:

2.3.1 Review of Previous Investigations

A number of previous investigations have been conducted on the former Bulimba 'A' power station site described as Lot 2 on RP813014 and Lot 294 on SP135357. The subject site (Lots 1 to 5) is located in the northern portion (within Lot 294) of the previously assessed site and the bulk of the following investigations were conducted outside of the subject site. A review of previous documents relating to Lot 2 and Lot 294 is summarised in *Appendix I*. A summary is also provided below.

- The power station and substation was built in the 1920's on Lot 2 and furnace ash was used to reclaim land on Lot 294 as the power station was extended. A large amount of material was buried on the power station site, situated to the south of the subject Lots (refer *Appendix A*), in the building voids following the decommissioning of the power station in 1970 and demolition in 1978-1981. Following demolition of the power station the site has operated up to 2001 as chemical, physical testing and analytical laboratories.
- An underground fuel storage tank(s) (UST[s]), likely to have stored diesel, was reportedly likely to have been decommissioned and filled with water and left in the ground. The UST may have been removed or modified. Surface manual excavations undertaken by Geo-Eng personnel between January and March 2000 at the likely tank(s) location were unable to unearth any fittings associated with the tank(s). Fittings may have been removed as part of the decommissioning process. A search for a flammable and combustible (F&C) liquids license through BCC, identified no record of an F&C liquids license for the site.
- During site operation, potentially impacting activities included:
  - Ash handling and disposal (across the entire site);

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  - Melting and metals (Cu, Pb and brass which comprises Cu/Zn), west of the former workshop/stores area;
  - Diesel underground storage tank(s) (UST[s]);
  - Discharge of chemicals to septic tanks until 1990; and
  - Herbicide use.

- Other reported activities, such as: storage of oil-filled cable drums; PCB/oils from transformers; disposal of asbestos lagging; and disposal of oil refractory materials containing chromium were reportedly carried out in the area of the former power station, shown in *Appendix A*.
- Anecdotal evidence documented in the Geo-Eng (2000) report suggests that asbestos exists within the location of the former power station, which is outside the subject site.
- It should be noted that the site is listed on the EPA EMR for the past operation of potentially contaminating activities of waste storage treatment or disposal and abrasive blasting.

Soil Contaminants

- The majority of contaminated soil samples collected in previous investigations were from the power station building area adjacent to the subject site where demolition wastes were buried. In March 2000, Pb, Cr and Cu were recorded in soil samples within the power station building area and elevated hydrocarbon levels were reported in soil samples.
- In November 2001, soil samples from the site showed concentrations of metals and PAH which were generally less than the NEPM Environmental Investigation Level (EIL) criteria, except one sample containing V.

Groundwater Contaminants

Groundwater assessments were carried out on the properties adjacent to the proposed Lots 1-5. No information could be determined for the subject site. The following information relates tot the adjacent properties:

- Hydrocarbon contamination in groundwater samples was possible from the dumped margarine.
- In March 2000, groundwater samples collected from the power station building area (i.e. outside the subject area) all showed contamination with metals exceeding NEPM EILs.
- In August 2000, a preliminary investigation reported dissolved heavy metals to be present at concentrations up to two orders of magnitude above the NEPM guidelines.
- In August 2000, no detectable TPH, BTEX were reported in groundwater.
- In November 2001, groundwater samples show metals concentrations to be below the relevant NEPM criteria for all analytes except Cu and Zn.
- In April 2000, contaminant levels are slightly above NEPM Guidelines for Cu, Ni and Zn at some sites, but more significantly above ANZECC 2000 trigger levels for 99% level of species protection.

Methane generation

- Soil gas assessments produced in August and November 2002 reported that no methane

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was detected in monitoring wells or in soil vapour probes situated adjacent and to the south of the subject site.

2.3.2 Review of Historical Aerial Photographs

A limited historical aerial photograph review was carried out to determine the nature of the fill material on the site. Aerial photographs sourced from the DNRME were reviewed as follows:

- 1 May 1946, 9543 Brisbane City Council Series 46 Project Aerial Photography. Scale 1:15,900.
- 1 August 1951, 9543 Greater Brisbane Area 51 Project Aerial Photography. Scale 1:16,000
- 1 March 1981, 9543 Brisbane East 81 Project Aerial Photography. Scale 1:9,300.
- 13 June 2004, 9543 Tweed Heads-Urangan 2004, Project Aerial Photography. Scale 1:12,000.

Table 2 Historical Aerial Photograph Review

Year	Run	Frame No.	Comment
1946	14	34739	The site has earthworks being carried out on it. There appears to be some clearing of trees. The north eastern portion of the site is submerged by the Aquarium Passage. To the north, the Doboy Wall has been constructed, diverting the flow of the Brisbane River from the Aquarium Passage. To the south, the Power station has been constructed. Clearing has been carried out to the west and the Aquarium Passage is adjacent, to the east.
1951	8	39341	The site is no longer submerged by the Aquarium Passage. Dark fill (presumably ash) has been placed over the entire site and to the Doboy Wall. Building construction is taking place on the site. Large stockpiles of dark material are present to the adjacent east of the site. All other surrounding areas remain relatively unchanged.
1981	21	260	The workshop buildings are present on the site. There is vegetation adjacent to Aquarium Passage. Paringa Road has been constructed to the north, followed by planted vegetation. The surrounding properties remain relatively unchanged.
2004	101	19	The site remains relatively unchanged. An industrial building has been constructed across Paringa Road, to the northwest. The sewer pump station has been constructed to the northeast. To the south, the power station has been demolished. Further to the southwest, Colly Farms Cotton warehouses have been constructed.

Historical Aerial Photos are presented in *Appendix C*.

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2.3.3 Historical Titles

A review of historical titles of the site was carried out and the following results are summarised in chronological order below. Results of the historical title search are presented in *Appendix D*.

Table 3 Summary of Historical Title Search on Proposed Lots 1-5 (Lot 294 Crown Plan Registered Plan 135357), County of STANLEY, Parish of BULIMBA, Town of, Queensland: BRISBANE CITY- 5.15 Hectares.

CHAIN OF LODGEMENT	TRANSACTION/OWNER
Lot 294 on SP135357	
15/7/05	Certificate of Title issued for Title No: 708827766
4/8/04	Transferred to GALE DEVELOPMENTS PTY LTD and SNOWDAY PTY LTD Transfer No: 707947127 (Tenants in Common)
26/9/03	THE STATE OF QUEENSLAND REPRESENTED BY THE DEPARTMENT OF NATURAL RESOURCES & MINES Registered Owner Title No: 40039115
26/9/03	Queensland Deed of Grant of Land Fully Cancelled Title Reference No: 40039115
Lot 294 on CP SL8781	
18/10/00	Lease transfer to QUEENSLAND POWER TRADING CORPORATION
27/9/99	Lease transfer to AUSTA ENERGY CORPORATION LIMITED
3/6/85	Lessee's interest now vested in QUEENSLAND ELECTRICITY COMMISSION
12/3/78	Lessee changed to QUEENSLAND ELECTRICITY GENERATING
3/3/75	30 (+ 1) year lease to: THE SOUTHERN ELECTRIC AUTHORITY OF QUEENSLAND (1.8.1970 – 31.7.2001)
Easements on the Land	
10/6/04	Easement in Gross No: 703595469 ENERGEX LTD and QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED Transfer No: 707795147 (Joint Tenants)
6/1/04	Easement No: 707354326 benefiting the land over EASEMENT A on SP135376

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CHAIN OF LODGEMENT	TRANSACTION/OWNER
9/10/03	Easement No: 707067669 burdening the land to Lot 3 on RP813014 over EASEMENT C on SP135357
9/10/03	Easement No: 707067625 burdening the land to Lots 477 and 621 on CP SL8784 over EASEMENT D on SP135357
27/9/99	Easement in Gross No: 703595469 burdening the land ENERGEX LTD over EASEMENT L on CP898181
30/5/95	Transfer No: 700609388 - QUEENSLAND GENERATION CORPORATION
16/3/87	Easement No A2184: GAS CORP OF QUEENSLAND LTD
3/11/77	Easement No A1088: ASSOCIATED PIPELINES LTD
../5/77	Easement No A1017: AUSTRAL PACIFIC FERTILIZERS LIMITED
No date	Rights and interests reserved to the Crown by Deed of Grant No. 40039115 (Lot 294 on SP135357)

2.3.4 Environmental Management and Contaminated Land Register Search

A review of the Queensland Environmental Protection Agency's EMR and CLR indicates that the site IS on the EMR for:

Waste Storage Treatment or Disposal – storing, treating, reprocessing or disposing of regulated waste (other than the place it is generated), including operating a nightsoil disposal site or sewage treatment plant where the site or plant has a design capacity that is more than the equivalent of 50,000 persons having sludge drying beds or on-site disposal facilities; and

Abrasive Blasting – carrying out abrasive blast cleaning (other than cleaning carried out in fully enclosed booths) or disposing of abrasive blasting material.

The site is NOT included on the CLR.

EMR and CLR search results are presented in *Appendix E*.

2.4 Regional Geology

The 1:100 000 Brisbane Geological Map Sheet (9543) indicates that fill on the site is underlain by shale, conglomerate, sandstone, siltstone of the Triassic Ipswich Coal Measures. This is overlain by recent alluvium containing river sands and mangrove muds. The site has reportedly been filled predominantly with ash from the boiler furnaces.

2.5 Regional Hydrogeology

Information about the local hydrogeology was obtained from the 1:2500,000 Groundwater Resources Queensland map produced by Queensland Department of Mines, 1987. The groundwater has a yield of <5 L/sec and a salinity of 500-1,500 mg/L. The groundwater is suitable for most purposes, though marginal for human consumption and low salt tolerant crops. The lithology of the aquifer is sedimentary strata.

A search of the DNRME groundwater bore database, indicated that no groundwater bores were located within a 2 km radius of the site.

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2.6 METHODOLOGY

A specific methodology to address the stated objectives of the project was devised, following a review of the information supplied. A description of the study tasks follows:

- Boreholes were hand augured for the first metre and then drilled, using a track-mounted, solid stem auger. Hollow flight or push-tube sampling was not carried out due to the loose nature of the sampled material. Decontamination of sampling gear was carried out between sampling depths and locations. The drilling contractor engaged to carry out the works was Geoprobe Pty Ltd (Geoprobe). The drilling program was aimed at identifying the presence of contamination on the site, based on field observations and historical information.
- Prior to drilling, a cable locator (Abletech Underground) was engaged to ensure that no underground services were situated at the proposed borehole locations.
- Borehole locations were evenly distributed across the site and one borehole (BH19) was situated at the approximate location of an old underground fuel storage tank identified in previous reports on the site. The location of the former UST, for BH19, was approximated and triangulated from historical site plans. BH14 was situated at the approximate location of the melting furnace, which was reportedly situated to the west of the former workshop/stores building.
- Original discussions with Qld EPA CLU and WSA determined that five sample locations per Lot to a maximum depth of 7.5m would be sufficient, as the combined five Lots could be treated as one site. However, upon review of previous site reports, the sampling density was reduced to four sample locations per Lot. This amounts to twenty (20) sample locations over 1.25 ha. AS 4482.1-1997 indicates that 21 sample points are required for a 1 ha site and 25 sample points for a 1.5 ha site. The sample density for this investigation falls marginally below this. The effect of this on the overall results of the investigation is discussed in *Section 6.1*.
- Boreholes were progressed to a maximum depth of 7.5 metres below ground level (mbgl). Groundwater monitoring wells were installed at BH5 (MW3), BH17 (MW2) and BH20 (MW1). Approximately three (3) well volumes were purged after installation, to remove any material that may have settled during the well construction.
- The drilling equipment was decontaminated between boreholes by washing down the auger lengths using a phosphate-free cleaning solution and potable water, to prevent potential cross contamination between boreholes.
- Soil samples were collected from each borehole at 1m intervals or change in strata and screened for total volatile organic vapours (TVOV) concentrations, using a photoionisation detector (PID).
- Nitrile gloves were worn during sampling. Collected samples were placed in teflon sealed, laboratory prepared glass jars, placed on ice and transported to Labmark Pty Ltd, a NATA registered laboratory (NATA-Accred. No. 13542) based in Sydney, for analysis.
- Water samples were collected from the monitoring wells the day following installation. Upon sampling, no less than three well volumes were purged prior to sampling, using a disposable, teflon bailer. In order to meet Qld EPA quality assurance requirements, one duplicate water sample and one rinsate sample were also collected. These were transported to Amdel, a NATA registered laboratory (NATA-Accred. No. 1464) based in Brisbane, for analysis.

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3 QUALITY ASSURANCE

All work was conducted in accordance with industry accepted standards and in accordance with WSA standard operating and quality assurance procedures. Field quality control included rigorous decontamination procedures and sample documentation and pre-calibration of field instruments before use. Personnel suitably qualified and experienced undertook fieldwork.

Laboratories certified by the National Association of Testing Authorities (NATA) conducted analyses. The laboratories performed internal Quality Assurance (QA) and Quality Control (QC) testing. The QA/QC employed by the laboratories comprises anomalous samples (spikes) for organic analysis and certified reference sampling for inorganics. The results of the QC testing are presented in the laboratory reports that also indicate how much of a particular analyte was recovered. Duplicate testing is undertaken by the laboratory to compare the results obtained in analysing samples.

In addition, duplicate, trip blank and rinsate samples were collected for both soil and groundwater samples and tested by the same laboratory. Results of these are discussed in *Section 5*.

A QA/QC review was carried out and is provided in *Appendix J*. The outcome of the review confirmed that the results obtained are considered to be suitable.

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4 ASSESSMENT CRITERIA

4.1 Soils

Soils analysis results were compared to the EPA Investigation Threshold Levels (*Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland*, 1998).

Investigation Threshold levels are defined as the levels above which further detailed site investigation is required. Various categories (A-F) have been developed by the National Environmental Health Forum (NEHF) for different exposure settings. These exposure settings are dependent on land use. The NEHF Investigation Levels used by WSA for validation purposes at this site are the Category F Levels (Health Based Investigation Levels for Commercial/Industrial Land use). Also included in *Table 4* and the following discussion is the HIL-A (or standard residential) concentrations which are more conservative.

In the absence of official EPA guidelines for TPH and BTEX compounds, the guideline values that the EPA considers acceptable have been used. The assessment criteria used during this assessment are detailed in *Table 4*.

4.2 Groundwater

Australian and New Zealand Environment Conservation Council (ANZECC) 2000 Guidelines for Marine Waters (95%) were used to assess groundwater quality, however where levels were not established for particular parameters, the Dutch intervention levels for groundwater were used. To assess nutrient concentrations, ANZECC 2000 Guidelines for physical and chemical stressors in estuarine waters (Southeast Australia) were used. It is important to note that the ANZECC guidelines are intended for the assessment of the quality of surface waters, while the Dutch intervention levels are internationally adopted for the assessment of groundwater quality. Currently, there are no equivalent Australian guidelines for the assessment of groundwater quality. However, due to the proximity of the site to a tidal waterway, ANZECC guidelines have been referred to the first instance. At the same time, consideration has been taken of likely dilution of discharging groundwater due to stream flow and tidal exchange.

Table 4 Assessment Criteria for Soil and Groundwater

Compound	Qld EPA EILs (mg/kg)	Qld EPA HIL-A[3] (mg/kg)	Qld EPA HIL-F[4] (mg/kg)	Dutch intervention levels for groundwater (µg/L)	ANZECC 2000 Protection of Aquatic Ecosystems (Marine) (µg/L)
TOTAL PETROLEUM HYDROCARBONS					
$C_6 - C_9$	100[1]	NE	NE	NE	NE
$C_{10} - C_{14}$	100[1]	NE	NE	600	NE
$C_{15} - C_{28}$	1000[1]	NE	NE		NE
$C_{29} - C_{36}$	1000[1]	NE	NE		NE
Total TPH	NE	NE	NE	NE	NE
Benzene	1[1]	NE	NE	30	700
Toluene	130[2]	NE	NE	1000	NE
Ethylbenzene	50[2]	NE	NE	150	NE
Xylenes	25[2]	NE	NE	70	NE
METALS					
Arsenic	20	100	500	60	NE
Beryllium	1	20	100	15	NE

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Compound	Qld EPA EILs (mg/kg)	Qld EPA HIL-A[3] (mg/kg)	Qld EPA HIL-F[4] (mg/kg)	Dutch intervention levels for groundwater (µg/L)	ANZECC 2000 Protection of Aquatic Ecosystems (Marine) (µg/L)
Cadmium	3	20	100	6	5.5
Chromium (III)	50	12000	60000	30	27.4
Copper	60	1000	5000	75	1.3
Lead	300	300	1500	75	4.4
Manganese	500	1500	7500	NE	NR
Molybdenum	NE	NE	NE	300	NE
Nickel	60	600	3000	75	70
Selenium	NE	NE	NE	160	NE
Silver	20	NE	NE	NR	NR
Thallium	NE	20	100	7	NR
Tin	50	NE	NE	50	NR
Vanadium	NE	NE	NE	70	100
Zinc	200	7000	35000	800	15
Mercury	1	15	75	0.3	0.4
NON-METALLIC INORGANICS					
Ammonia	NR	NR	NR	NR	15[5]
NO_X	NR	NR	NR	NR	15[5]
Total Nitrogen	NR	NR	NR	NR	300[5]
Total Phosphorus	NR	NR	NR	NR	30[5]
POLYCYCLIC AROMATIC HYDROCARBONS					
Benzo(a)pyrene	NE	1	5	0.05	NE
Naphthalene	NE	NE	NE	70	70
Total PAH	NE	20	100	NE	NE
POLYCHLORINATED BIPHENYLS					
Total PCB	1	1	50	0.01	NE
ORGANOCHLORINE PESTICIDES					
Heptachlor	NE	10	50	0.3	NE
Aldrin	0.2	10	50	NE	NE
trans-chlordane	NE	50	250	NE	NE
cis-chlordane	NE	50	250	NE	NE
Dieldrin	0.2	10	50	NE	NE
4,4-DDD	0.2	100	1000	0.01	NE
4,4-DDE	0.2	100	1000		NE
4,4-DDT	0.2	100	1000		NE
Endosulfan	NE	NE	NE	5	0.01
Endrin	NE	NE	NE	NE	0.008

Note: NE = Not Established
NR = Not Required
(1) EPA Internal Guideline Levels
(2) NSW EPA Guideline Levels, 1994
(3) HIL-A is "standard residential" values
(4) HIL-F is "commercial/industrial" values
(5) ANZECC 2000 default values for physical and chemical stressors for slightly disturbed estuarine ecosystems

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5 RESULTS

Laboratory results are summarised and appended in this report.

5.1 Soil

Investigation findings are summarised below regarding soil contamination at the subject site:

- Cu Pb, Mn and Zn were the only metals identified as exceeding the nominated environmental guidelines:
  - *Copper:*
    - Concentrations exceeding Qld EPA EILs but within HIL-A were identified in samples BH4 0.5-1.0, BH6 1.0-1.5, BH9 1.0-1.5, BH10 5.5-6.0, BH11, 3.0-3.5, BH12 0.5-1.0, BH12 2.5-3.0, BH13 6.0-6.5, BH13 7.0-7.5, BH14 1.0-1.5, BH15 0.1-0.6, BH16 0.5-1.0, BH17 1.0-1.5 and BH18 0.5-1.0;
    - Concentrations exceeding HIL-A but within HIL-F were identified in sample BH11 0.5-1.0; and
    - Concentrations were not found to exceed HIL-F levels.
  - *Lead:*
    - Concentrations exceeding HIL-A but within HIL-F were identified in samples BH3 2.5-3.0, BH6 1.0-1.5, BH11 3.0-3.5, BH12 0.5-1.0 BH12 2.5-3.0, BH13 6.0-6.5, BH15 0.1-0.6 and BH16 0.5-1.0; and
    - Concentrations exceeding HIL-F were identified in sample BH11 0.5-1.0.
  - *Zinc:*
    - Concentrations were identified as exceeding Qld EPA EILs in samples BH4 2.5-3.0, BH11 0.5-1.0 and BH13 6.0-6.5; and
    - Concentrations were not found to exceed HIL-A nor HIL-F.
- All other metals analysed returned concentrations either below the laboratory limit of reporting or within Qld EPA EILs;
- Sample BH20 0.2-0.5 (topsoil sample) returned concentrations of potential contaminants (standard suite of 8 metals and TPH C_{10}-C_{36}) below EPA EILs;
- TPH concentrations were either below laboratory limit of reporting or within the nominated guideline levels;
- PAH concentrations were either below laboratory limit of reporting or within the nominated guideline levels;
- PCBs were not detected above the laboratory limit of reporting in any of the soil samples analysed;
- OCP were not detected above the laboratory limit of reporting in any of the soil samples analysed;
- TCLP results were varied. The red/brown sand (BH1 0.5-1.0) and dark grey clay (BH5 1.5-2.0) returned relatively low TCLP results. The ash material (identified by all other TCLP samples) varied from non-detected in most metals to up to three orders of magnitude greater than the detection limit of the laboratory (Ni in BH11 0.5-1.0);
- All ash was reportedly derived from the power station combustion of coal sourced from the same area (Ipswich coal field). While the physical structure of the ash composition across the site showed minor variations, from grey to black ash, ranging in size from fine

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to coarse , and contained a limited amount of gravels and cobbles (fine to coarse gravels), this only reflects the state of combustion (i.e. fine ash or partly cemented clinker). Given that the ash is all known to derive from the same source, the chemical composition of the material will be relatively homogeneous. Thus, it is considered reasonable to assume that the laboratory analytical results from this investigation are representative of the material across the site.; and

- The PID did not detect any TVOVs in the soil samples collected during site investigation works, as shown in the appended Table 1.
- The UST(s) was not located during the drilling works and no impact associated with fuel storage was identified in samples collected from BH19.
- A statistical analysis was carried out on the laboratory data for the metals within the soil (refer appended Table 1). This data indicates that there is a 95% confidence that all metals concentrations, with the exception of copper, will be within the EILs. The 95% confidence level for copper was calculated at 189 mg/kg, using the Microsoft Excel function to calculate the 95% confidence range and then using this value to determine the maximum value within this range. This is well within the HIL-A levels for copper. As a result, it is considered that there is a satisfactory likelihood metals concentrations within soils beneath the site will be within the HIL-F levels. The assumptions used for the statistical analysis are listed below.

Statistical assumptions:

- Normal distribution;
- All <PQL results are regarded as 0 for the statistical analysis;
- Sufficient samples collected for the statistical analysis; and
- All sample results included (no outliers rejected) in the statistical analysis.

5.2 Groundwater

The standing water levels measured are shown below.

Table 5 Standing Water Levels on the 11 October 2005

Well ID	Date	DTW (m)	RL TOC (m AHD)	RLW (m AHD)
MW1/BH20	11/10/05	3.725	3.750	0.025
MW2/BH17	11/10/05	3.555	3.700	0.145
MW3/BH5	11/10/05	4.370	4.500	0.130

DTW: Depth to water in metres

RL TOC: Relative Level (mAHD) of top of casing

RLW: Relative groundwater level (mAHD)

At the time that the groundwater levels were measured, the inferred groundwater flow direction is to the east, towards Aquarium Passage. This is shown in *Figure 4*.

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TPH were detected in sample MW3/BH5 and its duplicate, WQA1, at 320 μg/L and 200 μg/L, respectively.

BTEX were not detected above the laboratory reporting limit in any of the groundwater samples analysed.

OCP were not detected above the laboratory reporting limit in any of the groundwater samples analysed.

PAH were not detected above the laboratory reporting limit in any of the groundwater samples analysed.

PCB were not detected above the laboratory reporting limit in any of the groundwater samples analysed.

Groundwater was brackish to saline (EC between 9200 and 18000 µS/cm) and neutral to mildly alkaline (pH between 6.9 and 7.8).

Concentrations of ammonium were above ANZECC 2000 default trigger values for slightly disturbed estuarine ecosystems in all groundwater samples analysed;

NO_X concentrations were above ANZECC 2000 default trigger values for slightly disturbed estuarine ecosystems in all groundwater samples analysed, by factors of between 4 and 64. The highest NO_X concentration (0.96 µg/L) was recorded in a sample from MW1 and was an order of magnitude higher than concentrations from MW2 and MW3 (0.06 µg/L and 0.08 µg/L, respectively).

Total Phosphorus concentrations were above ANZECC 2000 default trigger value for slightly disturbed estuarine ecosystems (between 1.55 and 5.14 mg/L, cf. 30 µg/L);

Se and Hg were below detection limits in all samples;

Concentrations of Cd, Cr, Ni and V were below ANZECC threshold concentrations in all groundwater samples analysed;

The concentration of Pb in sample MW2 exceeded the threshold concentration by a factor of 3 (0.012 µg/L cf 0.0044 µg/L);

Concentrations of Cu and Zn were above threshold concentrations (1.3 and 15 µg/L respectively) in all groundwater samples analysed (Cu ranged from 7 to 24 µg/L, Zn ranged from 157 to 415 µg/L). Therefore, the factors by which measured concentrations exceed threshold concentrations range from 10 to 28 for Zn and from 5 to 18 for Cu.

Concentrations of As and Mo were below Dutch threshold concentrations in all groundwater samples analysed.

5.3 Asbestos

No asbestos was visually identified during the investigation works.

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6 DISCUSSION OF RESULTS

6.1 Soil

It is noted that the material was likely to have been imported from the power station operations over a period of years. With the exception of a small amount of ash imported from Bulimba B power station, the source of the ash is reported to have been Bulimba A power station. Given that coal burnt in power stations typically produces clinker, siliceous slag and ash (i.e. fine, powdery combustion residue) and that the source of the coal was from one location (the Ipswich coal field), it was expected that the ash fill beneath Proposed Lots 1-5 would be fairly homogeneous. Variation in chemical results would result from change in grain size from the ash (fine-grained ash particles have greater surface area, which contain contaminants). Heavy metal concentrations within the ash material varied from below Qld EPA EILs to exceeding Qld EPA HIL-F. The 95% confidence analyses shown in the appended *Table 1* indicates that the heavy metals concentrations are likely to be within the HIL-A levels. As the number of sample points were below the number recommended in the AS4482.1-1997, a 99% confidence analysis was carried out. The 99% confidence analyses shown in the appended *Table 1* indicates that the heavy metals concentrations are likely to be within the HIL-A levels. These results, plus the knowledge that the fill on the site was likely to be fairly homogeneous and that most samples were collected from the ash fill material, indicates that adequate sampling was carried out to characterise the ash during this investigation, hence four sampling locations per proposed lot is considered to be sufficient..

TCLP results of selected samples were varied and delineations could not be accurately determined. It is noted that TCLP analysis is carried out at a reduced pH, which would indicate an increased mobility of metals. pH results indicate neutral to slightly alkaline conditions at the site. Therefore, the TCLP results are not indicative of site conditions, but would indicate a worst-case scenario.

All other analyte results indicate minimal impact from other operations at the site. However, through the aerial photograph review, it was observed that ash disposal appeared to span across a large area, extending well beyond the subject site. This would indicate that the possibility of the presence of these contaminants elsewhere cannot be discounted. As a result, it is unlikely that the site will affect the current environmental status of the surrounding environment.

There was no evidence of hydrocarbon impact identified with fuel storage at sample location BH19.It was reported that the UST(s) may have been removed (Geo-Eng, 2000). If however, the UST(s) was still in situ, it is reportedly likely that the petroleum products would have been removed and it would have been filled with water (Geo-Eng, 2000). Therefore it is considered that the environmental and health risk associated with the UST(s), present or removed, is low.

Imported fill was identified as the roadbase material at the northeastern portion of the site. Three samples (BH5 0.2-0.5, BH7 0.2-0.4 and BH7 1.2-1.5) of this material were collected and analysed for the standard suite of 8 metals and TPH C_{10}-C_{36}. Laboratory analyses returned results for these analytes within EPA EILs, indicating that this material is suitable for use as imported fill.

BH14 was situated at the approximate location of the melting furnace. Laboratory results returned contaminant concentrations within EPA EILs, with the exception of copper at 130 mg/kg, which exceeds EILs, but is within HIL-A. As a result, it is not considered that the melting furnace activities had a significant environmental impact.

The sample of the topsoil (BH20 0.2-0.5) returned concentrations of contaminants below Qld EPA EILs. This, plus the field observations, which indicated no notable signs of impact, would indicate that the risk that this material is significantly impacted with the contaminants of concern is low.

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6.2 Groundwater

The site is immediately adjacent to a tidal reach of the Brisbane River that is saline during typical flow conditions. It was likely that there is some limited hydraulic connection between the river and the high-permeability shallow aquifer within the fill at the site but much more direct connection with Aquarium Passage. The salinity of groundwater at the site is affected by this connection.

It is important to note that groundwater levels measured at the site only provide a point estimate of hydraulic gradient. At the time that groundwater levels were measured, there was a slight hydraulic gradient toward Aquarium Passage. However, tidal action will allow dynamic reversal of the hydraulic gradient. In this environment, the tidal cycles will tend to produce alternating hydraulic gradients to, and away from, the Aquarium Passage. This cycle limits the net groundwater flow in any direction with the result that groundwater under the site will tend to rise and fall with little, net horizontal movement.

The relative and absolute concentrations of nitrogen compounds in groundwater provide an indication of the oxidation/reduction conditions within the groundwater environment. Concentrations of Kjeldahl N and ammonia as N are relatively high compared with NO_X concentrations. While the nutrient concentrations in groundwater are not exceptionally high compared with agricultural areas within the Brisbane region, potential sources are surface application of industrial chemicals (acetic acid/ ammonium solutions, GeoEng 2000) (refer *Appendix A*), on-site septic tanks and/or atmospheric deposition from industrial sources in the area, particularly fertiliser manufacturers. The more reduced N compounds are likely to be more persistent than oxidised N compounds. This suggests that slightly reducing conditions exist at the site. The reducing conditions have significance for the fate of other contaminants. For example, while many aspects may affect metal mobility (e.g. pH, chelation by organic compounds, sorption reactions), metals are generally more mobile in reducing environments.

Comparison of borehole salinities and Total N concentrations show some correlation; the ratio of Total N to salinity is reasonably consistent between boreholes. The highest Total N concentration is associated with the highest salinity (23 mg/L and 18,000 µS/cm in MW3). While the predominant N source cannot be concluded, migration of groundwater toward Aquarium Passage is accompanied by dilution with fresher groundwater of lower N content. Based on site history, it is likely that the high ammonium concentration recorded at MW3 is associated with a point source such as septic tanks and/or the disposal of acetic acid/ammonium solutions (Geo-Eng, 2000). Groundwater migrating from the vicinity of MW3 provides only a component of the total groundwater discharging into Aquarium Passage from the site. As indicated by the ammonium concentrations recorded at MW2 and MW1, the average ammonium concentration in groundwater beneath the site is considerably lower than that recorded at MW3, with the lowest ammonium concentration (1.2 mg/L) being recorded at MW1 which is located closest to Aquarium Passage. This indicates that groundwater migration (e.g. between MW3 and the vicinity of Aquarium Passage) will be accompanied by on site dilution. Furthermore, direct groundwater recharge from rainfall will also provide some dilution of ammonium concentrations between MW3 and the vicinity of Aquarium Passage. Therefore, while the ammonium concentration at MW3 greatly exceeds the ANZECC Guidelines (by a factor of approximately 1000), the ammonium concentration at MW1 exceeds the ANZECC Guidelines by a factor of 80. Thus, it is expected that ammonium concentrations in groundwater originating from the vicinity of MW3 will have been diluted to levels similar in magnitude to those recorded in MW1 by the time groundwater reaches the area adjacent to Aquarium Passage.

The Total Phosphorus concentrations exceeded ANZECC guidelines by factors of between 52 (MW1 - closest to Aquarium Passage) and 171 (MW2 – furthest from Aquarium Passage). The reduced concentration in groundwater closer to Aquarium Passage can be attributed to a combination of dilution and also attenuation. In the case of phosphorus, attenuation is predominantly via adsorption and mineralisation to phosphates of aluminium, iron and

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calcium (USEPA, 1984).

The factors by which metal concentrations exceed ANZECC guidelines range from 3 to 28 (see *Section 8* - Calculation of dilution factor) with the highest factors for Zn (between 10 and 28). High Zn concentrations are likely to be associated with the ash material beneath the site.

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7 RISK ASSESSMENT

7.1 Introduction

In order to better understand the potential future risk associated with industrial use of the site, WSA has completed a qualitative environmental risk review.

The principle feature of this review is to assess the hazards associated with any potentially contaminated soils or groundwater noted at the site and evaluate these in the context of a site specific, qualitative risk based framework.

Central to the investigation of contaminated soil and groundwater is an assessment of risks.

For risks to be posed to the site the following must apply:

- there must be contaminant(s) at concentrations capable of causing health effects or environmental effects (*Sources*);
- there must be a human or environmental receptor present, or one which makes use of the site periodically (*Receptor*); and
- there must be an exposure pathway by which the receptor comes into contact with the environmental contaminant (*Pathway*).

The objective of this risk assessment is therefore, to place the environmental, geological and hydrogeological information obtained to date in the context of a risk-based setting, and produce a conceptual model of the site.

This conceptual model of the site will highlight:

- the key contaminants of concern and the nature of the contaminant source;
- the potentially operative exposure pathways under existing and future road and industrial development scenarios; and
- the potential receptors under present and future exposure scenarios.

The findings of this preliminary risk assessment will be used to guide the extent and nature of any required future remediation works to manage the site in the context of future road or industrial uses.

7.2 Methodology

This preliminary qualitative risk assessment forms the first stage of a tiered quantitative risk assessment methodology which may be employed should above-threshold concentrations be recorded. The approach used is analogous to the tiered approach contained in the American Society for Testing and Materials (ASTM) Risk Based Corrective Action Framework and can run parallel with site investigation activities.

7.3 Results

7.3.1 Contaminants of Concern

From our review of the investigation results, it is clear that there is only a limited impact of contaminants on the soils and the groundwaters. This impact is restricted to heavy metals in soil (Cu, Pb and Zn) exceeding Qld EPA EILs, HIL-A and one sample exceeding HIL-F across the site. Heavy metals (Cu, Pb and Zn) and nutrients (Total Nitrogen, NO_X, Ammonia as N and Total Phosphorus) were also detected in the ground water above threshold concentrations.

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The physical form of contaminants identified at the site were as follows:

- Metals and nutrients adsorbed onto the soil (ash) particles or present within the interstitial pore spaces

Additional contaminants that may be present beneath the site may also include OCP's, PCB's, TPH, PAH, based on historical activities of the site.

For the purposes of this qualitative risk assessment, it has been assumed that only heavy metal impact, N-compounds and phosphorus exists in both the soils and groundwater beneath the site as none of the other contaminants were identified during the WSA investigation. Should other contaminants (such as asbestos) be noted at a later date these will have different risk characteristics and will need to be assessed separately.

At this stage, WSA has not considered the environmental toxicity of any contaminants and has only made a limited assessment of mobility based upon the results of eight soil samples for TCLP. It is noted that TCLP analysis is carried out at a reduced pH, which would indicate an increased mobility of metals. pH results indicate neutral to slightly alkaline conditions at the site. Therefore, the TCLP results are not indicative of site conditions, but would indicate a worst-case scenario. Information on the toxicity of chemicals can be used at a later stage if additional impact is noted during any future investigation or excavation works, however, it is considered unlikely that further quantitative risk assessments which use toxicity would be required.

7.3.2 Pathway for Potential Contaminants

The potential pathways for migration of metals impact and nutrients noted at the site is as follows:

- migration of the dissolved metals and nutrients within the shallow perched groundwaters; and
- leaching metals and nutrients within the soils to potentially impact a greater mass of soil, this occurs particularly in the area around the water table.

The potential exposure pathways to human receptors from metal impact are as follows:

- dermal contact or ingestion of dusts derived from the surface contaminated un-paved soils exposure or sub-surface soils, during any future construction or excavation works;
- dermal contact with contaminated soils or groundwaters;
- accidental ingestion of contaminated soils or groundwaters during future construction works; and
- dermal contact of any surface water run-off during construction works.

The significance of these exposure pathways is considered to be low given the proposed future use of the site. However, they should still be considered during the construction phase of future works, and for any ongoing maintenance of excavation works following completion of the construction works, and managed under a Site Management Plan (SMP).

With respect to the mobility of chemicals on site and their likely migration within the soils and groundwaters, the investigation findings would suggest that the likely migration of contamination through the fill to the adjacent Aquarium Passage will be slow to moderate. However, the subsequent migration to any deep aquifer will be slow, due to the presence of marine clay.

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The potential exposure pathways to ecological receptors from metals and ammonia impact at the site are as follows:

- migration of any dissolved metals and nutrients within the perched shallow groundwaters to the adjacent Aquarium Passage running to the east of the site with the potential for the groundwater recharging the surface water;
- irrigation of impacted groundwater upon plants, which is considered unlikely given the industrial setting of the site; and
- accumulation of hydrocarbon or metal products in the sediments, found within the adjacent surface watercourse.

7.3.3 Receptors at Potential Risk

Assuming the use of the site is for future continued industrial use, then the principal potential receptors to any substances of concern are considered to be as follows:

7.3.3.1 Human Receptors

Staff and visitors to the site under current conditions of industrial use may be exposed to contamination primarily through surface dermal contact or inhalation of impacted dust during excavation works. It is noted that the site is proposed to be capped with roadbase-type material or concrete slab. Which would greatly reduce the exposure pathway. Future potential pathways also include inhalation and ingestion of surface dusts from uncovered areas in particular during any construction work. At present, a considerable amount of the existing site is covered with capping and the potential for direct dermal contact or generation of surface dusts would appear to be limited.

Construction workers involved in any future work are considered a particularly sensitive receptor. This is considered critical when works involve the disturbance of any surface covering or the excavation of any below ground structures. In these circumstances, opportunities exist for exposure via dermal contact, soil ingestion and inhalation. To reduce these impacts, a SMP will need to be followed.

A review of the site setting and indicates that off-site impact and opportunities for significant off-site exposures to the general public, are limited. The site is surrounded by industrial landuses and no residential properties lie within close vicinity of the site.

7.3.3.2 Ecological Receptors

Potential ecological receptors at the site include any flora and fauna within Aquarium Passage that may encounter the migration of dissolved metals or nutrients (N-compounds and phosphorus) contamination in the groundwater migrating from the site or from surface waters from surface run-off.

7.3.4 Conceptual Risk Model

There would appear to be two main contaminant sources at the site: the historical landfilling of metal; and nutrients-impacted material.

The qualitative risk assessment has indicated that there is potential for dissolved metals, N-compounds and phosphorus contamination to migrate in the subsurface environment or directly to the Aquarium Passage. It is recommended that management practices be employed during future work at the site to reduce any future liabilities posed by the site and ensure the health and safety of workers and the surrounding environment during construction works.

Of all samples analysed, only one parameter in one sample (i.e. lead in BH 11 0.5-1.0) exceeded the HIL – F guideline concentration. Due to the proposed, 'clean' capping layer to be placed over the site, this isolated sample is not considered to represent a high risk to future site users.

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A schematic diagram of the conceptual risk model is shown in *Figure 5*. This shows the conceptual source, pathway and receptor developed for the metal and nutrients related impacts present within the soil and groundwater at the site.

7.4 Groundwater

The parameters of concern were nutrients (Total Nitrogen, NO_X, Ammonia as N and Total Phosphorus) and metals (Zn, Cu and Pb). The flow and quality of groundwater under the site is controlled by the following:

- The hydraulic connection to the Brisbane River will be limited by the low permeability barrier constructed along the river before 1900. In contrast, there will be a direct hydraulic connection with the tidal flow in Aquarium Passage.
- Under low rainfall conditions, the difference in groundwater levels across the site will be controlled by the tidal cycles in Aquarium Passage. With small reversing gradients, net discharge of groundwater to the passage will be negligible.
- Any groundwater discharge which does occur will be into Aquarium Passage which is the downstream discharge point for Bulimba Creek. The volume of any groundwater discharge is likely to be very low compared to tidal flows and stream flow and this will exhibit a large dilution factor upon egress to the Aquarium Passage. This factor is estimated to be 300 or higher.

Calculation of dilution factor

It is possible to calculate an approximate dilution factor for groundwater entering Aquarium Passage from the site. The following parameters have been used in this calculation:

- Monthly stream flow volumes in Bulimba Creek (Arthington *et al.*, 1982),
- Width and tidal range of Aquarium Passage,
- Estimated average hydraulic conductivity for sediments on-site,
- Site data (aquifer thickness, hydraulic gradient, seepage face length).

Adjacent to the site, Aquarium Passage is approximately 100 m wide. Based on a semi-diurnal tide with a neap range of 1.4 m, the tidal prism along a 100 m seepage face at the site has a volume of 14 ML and an exchange rate of approximately 28 ML/day. The estimate of tidal flow does not consider stream flow and provides a minimum rate of flow within Aquarium Passage. For the period 1972-1980, mean daily stream flow in Bulimba Creek varied between 15 ML/day in September and 200 ML/day in January. The measurement point was a weir situated 23 km upstream, therefore, these estimates of stream flow are conservative for the whole Bulimba catchment.

In comparison, based on Darcy's Law, the calculated groundwater flow from the site across a 100 m-wide seepage face is 92 kL/day. Aquifer thickness is assumed to be 4 m (the typical thickness of saturated sand above marine clay at the site). The hydraulic gradient is calculated to be 0.0023. A conservative estimate of hydraulic conductivity is 100 m/day - an upper estimate for gravel and sand mixes (Bouwer, 1978).

Based on the calculated groundwater discharge and estimate of tidal flow, the minimum dilution factor is 300. Based on tidal flow plus minimum stream flow, the dilution factor is 460.

With the exception of the ammonium concentration recorded in MW3 groundwater (see Section 7.2), the minimum dilution factor is greater than the magnitude by which any contaminants are above their respective guideline concentrations. For example, the maximum zinc concentration is 28 times the guideline concentration (415 µg/L cf. 15 µg/L). In the case of the ammonium concentration recorded in groundwater at MW3, groundwater migration

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from this area of the site towards Aquarium Passage will be accompanied by significant on site dilution. Refer to Section 7.2. Based on this risk assessment, on-site contaminants are considered to pose a low risk to the quality of water in Aquarium Passage, hence WSA concludes that the site will be suitable for the proposed industrial use.

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8 CONCLUSIONS

Based on the information obtained from the investigation, WSA conclude the following:

8.1 Soil

- Areas of the site have been identified with heavy metal concentrations exceeding Qld EPA EILs and HIL-A. One parameter (lead) in one sample exceeded the HIL-F value;
- TPH were not detected in soil samples at concentrations exceeding Qld EPA Guideline Levels;
- PAH were not detected in soil samples at concentrations exceeding Qld EPA EILs;
- BTEX, OCP, PCB were not detected in any of the soil samples analysed;
- Heavy Metal TCLP results were varied across the site;
- The physical properties of the ash material indicate a homogeneous nature;
- As there have been previous, unsuccessful searches for the UST(s) and as sampling and laboratory results have not indicated any impact associated with the UST(s), there is likely to be only a low risk associated with the impact from UST(s), whether the UST(s) is present or has been removed;
- There is a low environmental risk associated with the former melting furnace, as BH14 was situated at the approximate location of the melting furnace and heavy metals results returned contaminant concentrations within EPA HIL-A;
- Asbestos was not identified during site work observations. Should suspected asbestos lagging be identified during future works, it should be treated as a high risk. The material should be contained by either replacing the surface cover or placing a suitable, impermeable cover over the surface. This material should be sampled to confirm the presence (or otherwise) of asbestos and should asbestos be identified this will require remediation by a licensed contractor under an Asbestos Management Plan (AMP). At this time the presence of asbestos lagging has not been noted during the WSA investigation; and
- Due to the homogeneous nature of the ash fill, it is considered that adequate soil sampling (four samples per Lot, reduced from five samples per Lot) was carried out during this investigation.

8.2 Groundwater

- The site is immediately adjacent to a tidal reach of the Brisbane River that is saline during typical flow conditions. It is likely that there is some limited hydraulic connection between the river and the high-permeability aquifer beneath the site but much more direct connection with Aquarium Passage. The salinity of groundwater at the site is affected by this connection;
- Potential sources for ammonia within the groundwater beneath the site are surface application of industrial chemicals (acetic acid/ ammonium solutions), on-site septic tanks and/or atmospheric deposition from industrial sources in the area, particularly fertiliser manufacturers;
- Of the suite of metals tested, three metals (Pb, Zn, and Cu) exceeded ANZECC guidelines by factors of between 3 and 28;
- While, the ammonium concentration at MW3 exceeds the ANZECC Guidelines (by a factor of approximately 1000), the ammonium concentration at MW1 exceeds the

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ANZECC Guidelines by a factor of 80;

- NO_X exceeded ANZECC guidelines by factors of between 4 and 64;
- Total Phosphorus exceeded ANZECC guidelines by factors of between 52 and 171;
- At the time that groundwater levels were measured, there was a slight hydraulic gradient toward Aquarium Passage. However, in this environment, the tidal cycles tend to produce alternating hydraulic gradients to, and away from, the Aquarium Passage. This cycle limits the net groundwater flow in any direction with the result that groundwater under the site will tend to rise and fall with little net horizontal movement;
- Based on an approximate dilution factor of 300 for groundwater from the site entering Aquarium Passage, contaminant concentrations (metals and nutrients) in groundwater are considered unlikely to result in an increase in contaminant concentrations in Aquarium Passage. Whilst the ammonium concentration recorded in groundwater at MW3 exceeded the nominated guideline by more than the dilution factor, it is likely to be attenuated to levels below the dilution factor by on-site dilution during migration towards Aquarium Passage; and
- Based on the results of this investigation, WSA recommends that Lots 1, 2, 3, 4 and 5 on unregistered, but BCC approved reconfiguration plan, dated 28 February 2005, by KFM Partnership, Plan Number 3403-00-021c (*Appendix A*) are suitable for industrial use provided that the conditions described in the Site Management Plan are fulfilled.

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9 LIMITATIONS OF REPORTING

Waste Solutions Australia Pty Ltd has prepared this report for the use of Snowday Pty Ltd and Gale Developments Pty Ltd, the Third Party Reviewer 73(2)Irrelevant of Environmental & Earth Sciences Pty Ltd) and the Queensland EPA in accordance with generally accepted consulting practice. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report may not contain sufficient information for purposes other than for the client and its respective consulting advisers.

The accuracy of the assessment made in this report is dependent upon the accuracy and reliability of evidence drawn together from a number of sources. The field investigations on which this report is based were restricted to a level of detail appropriate for the current stage of the project. Waste Solutions Australia Pty Ltd has taken steps to ensure the accuracy and reliability of field observations and investigations. It is important, however, that the limitations of the assessment be clearly recognised when the findings of this study are being interpreted. This report is based on information derived partly from others over which Waste Solutions Australia Pty Ltd had no control.

The report is based on conditions encountered in a limited number of investigation locations. Investigations have not been conducted to characterise all possible contamination on site, nor to fulfil the purposes of all possible site developments. Conditions may be encountered in subsequent investigations or during site re-development which were not encountered in this investigation.

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73(2)Irrelevant

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Principal Hydrogeologist

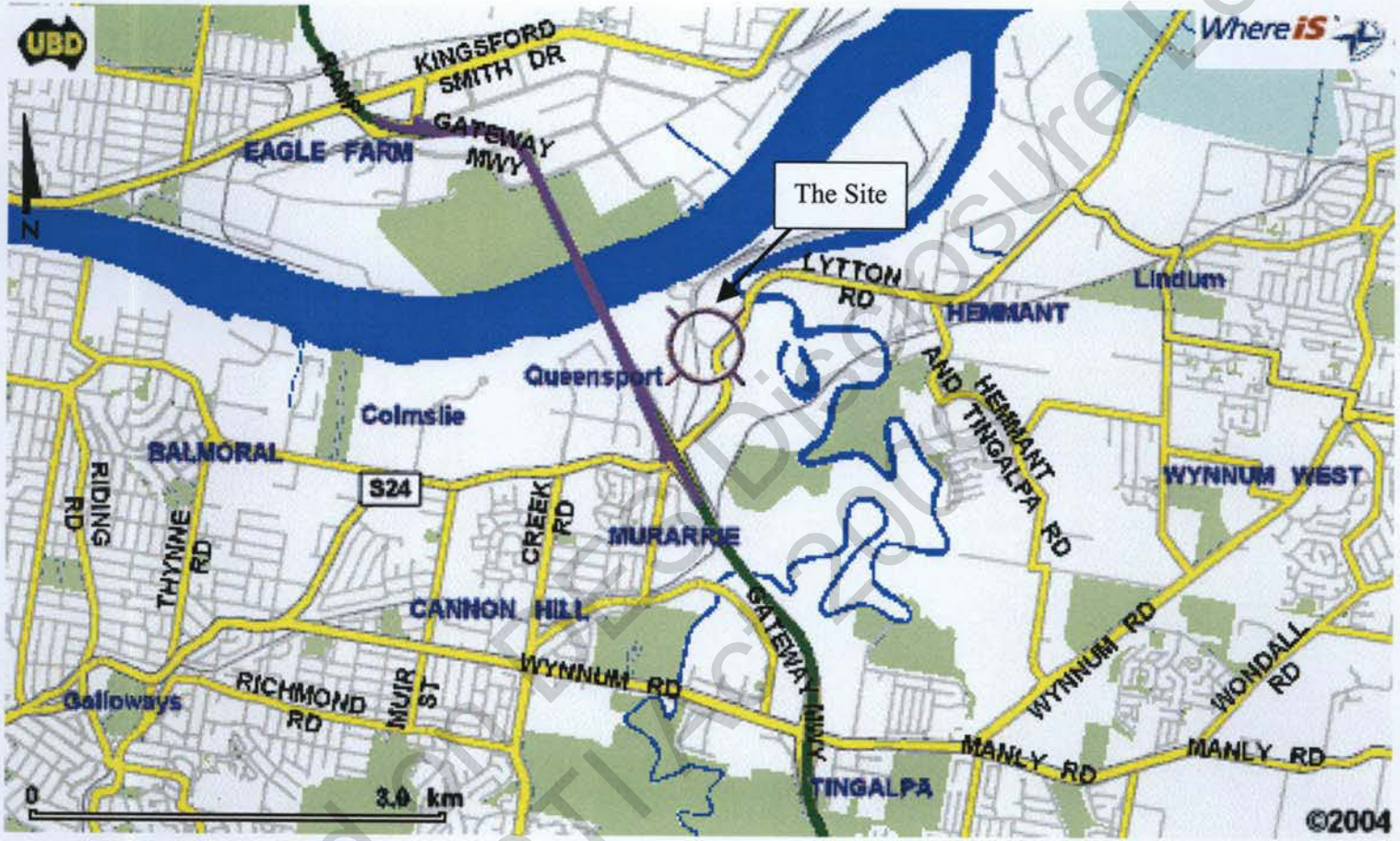
Certified Environmental Practitioner

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FIGURES

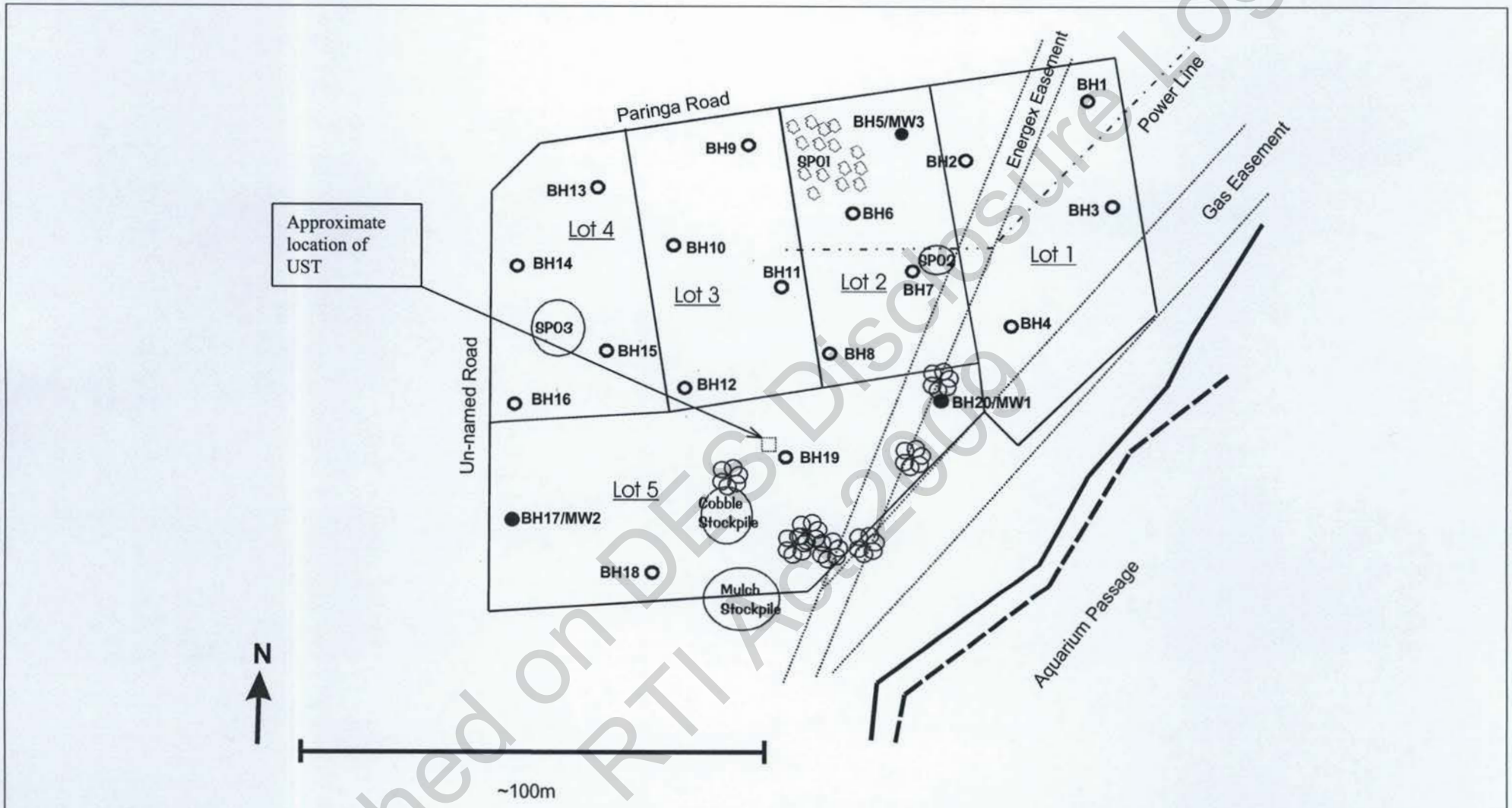
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Source Ref: http://www.whereis.com

Waste Solutions Australia Pty Ltd	Snowday Pty Ltd		
	Site Location		
	DATE: January '06	JOB NO: A399	FIGURE: 1

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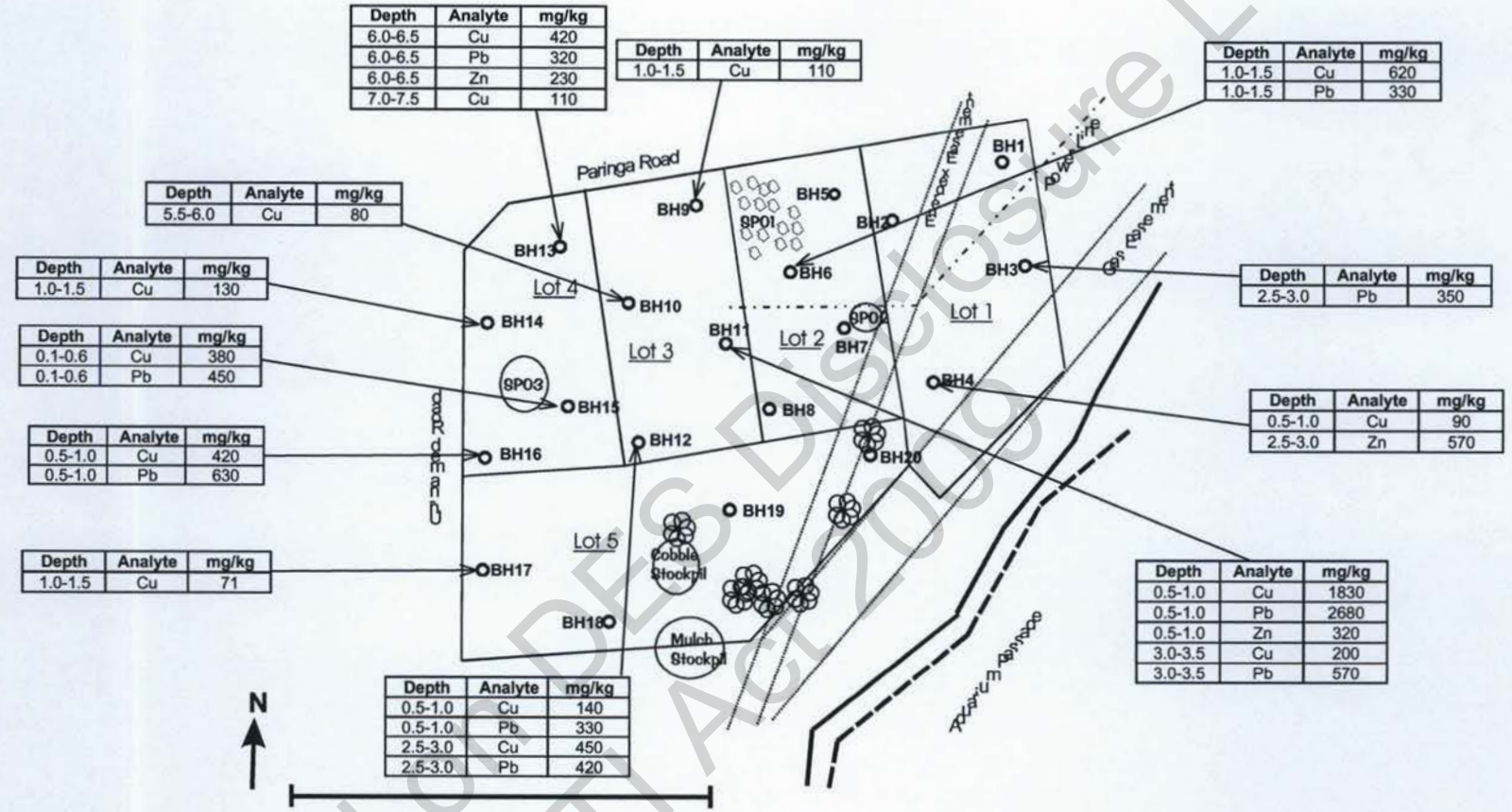
BH13 - Soil Sample Location

BH17/MW2 - Groundwater Monitoring Well

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Waste Solutions Australia Pty Ltd	Snowday Pty Ltd		
	Site Details		
	January 2006	JOB NO: A399	FIGURE: 2

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Depth	Analyte	mg/kg
6.0-6.5	Cu	420
6.0-6.5	Pb	320
6.0-6.5	Zn	230
7.0-7.5	Cu	110

Depth	Analyte	mg/kg
1.0-1.5	Cu	110

Depth	Analyte	mg/kg
1.0-1.5	Cu	620
1.0-1.5	Pb	330

Depth	Analyte	mg/kg
5.5-6.0	Cu	80

Depth	Analyte	mg/kg
2.5-3.0	Pb	350

Depth	Analyte	mg/kg
1.0-1.5	Cu	130

Depth	Analyte	mg/kg
0.5-1.0	Cu	90
2.5-3.0	Zn	570

Depth	Analyte	mg/kg
0.1-0.6	Cu	380
0.1-0.6	Pb	450

Depth	Analyte	mg/kg
0.5-1.0	Cu	420
0.5-1.0	Pb	630

Depth	Analyte	mg/kg
0.5-1.0	Cu	1830
0.5-1.0	Pb	2680
0.5-1.0	Zn	320
3.0-3.5	Cu	200
3.0-3.5	Pb	570

Depth	Analyte	mg/kg
1.0-1.5	Cu	71

Depth	Analyte	mg/kg
0.5-1.0	Cu	140
0.5-1.0	Pb	330
2.5-3.0	Cu	450
2.5-3.0	Pb	420

Depth	Analyte	mg/kg	
1.0-1.5	Cu	71	BH17

Soil Sample Location with Metal Exceedances

Waste Solutions Australia Pty Ltd

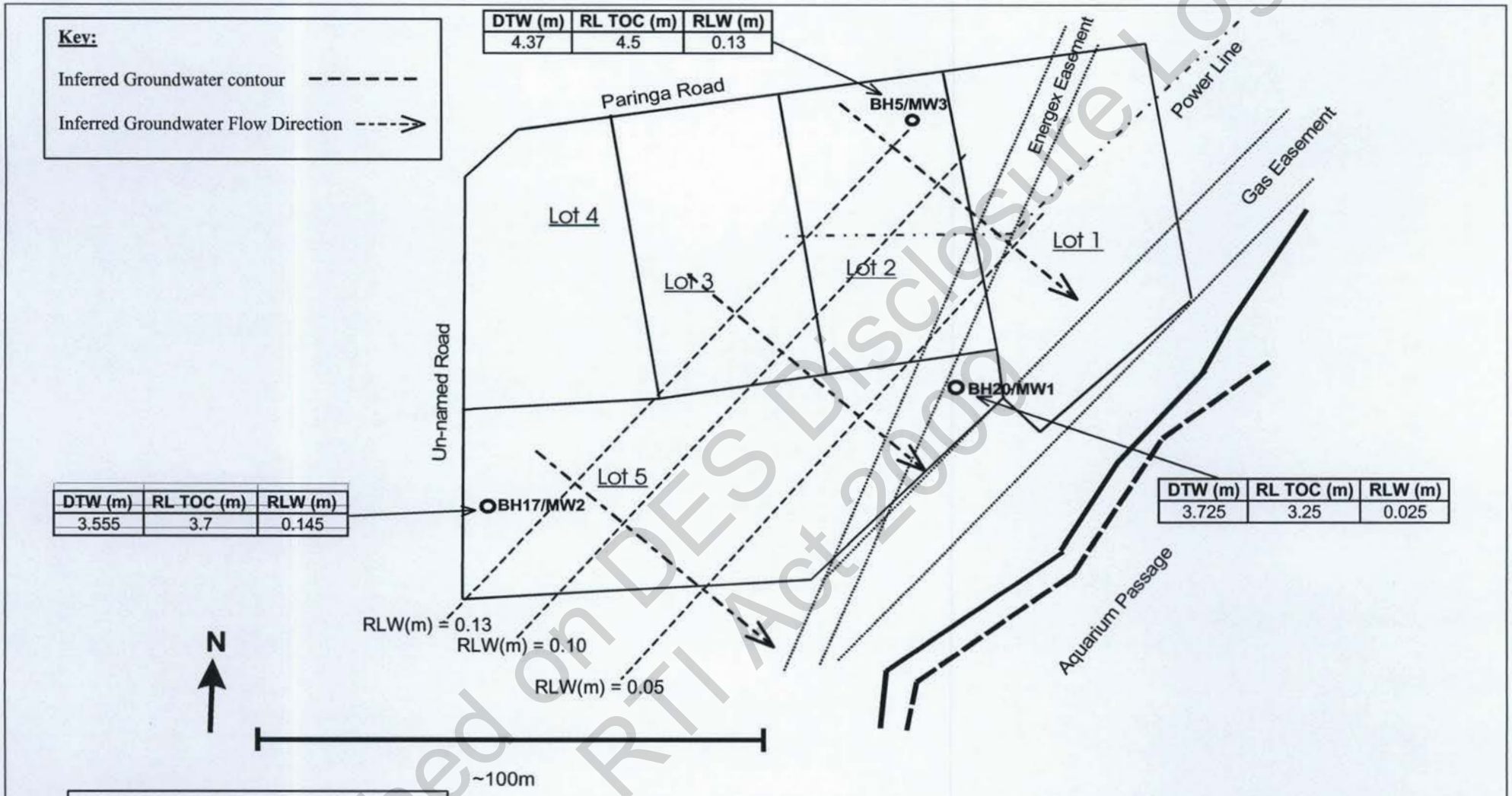
Snowday Pty Ltd

Soil Investigation Laboratory Results

January 2006 | JOB NO: A399 | FIGURE: 3

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RL TOC = Relative Level Top of Casing

RLW= Relative Level of Water

DTW = Depth to Water

RL TOC, RLW measurements are metres AHD (Australian Height Datum), except for DTW.

Waste Solutions Australia Pty Ltd	Snowday Pty Ltd		
	Inferred Groundwater Flow 11/10/05		
	January 2006	JOB NO: A399	FIGURE: 4

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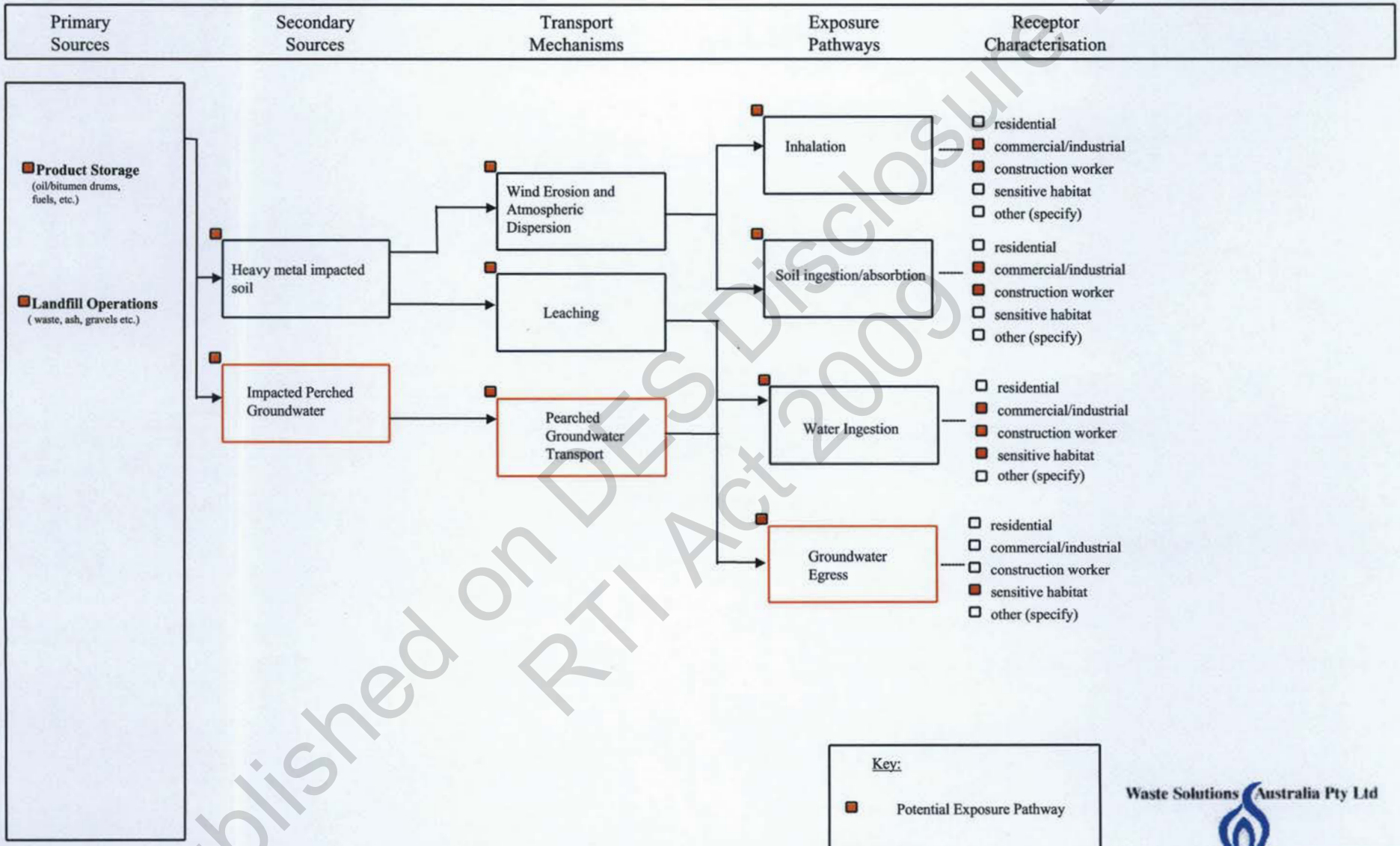


Figure 5 - Conceptual Risk Assessment Model, 55 Paringa Road, Murarrie Project Number: A399

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SUMMARY TABLES

LABORATORY RESULTS

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55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

				Sample Identification		BH1	BH1	BH1	BH2	BH2	BH2	BH3	BH3	BH3	BH4	BH4	BH4	BH5	BH5	BH5	BH6	BH6	BH7	BH7	BH7	BH8	BH8	BH9	BH10	SQA-4	BH10	BH10	BH11	BH11	BH11	BH12	BH12	BH12	BH12	BH13
				Lab Batch No.		E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676	E023676
				Date Sampled		11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
				Depth (m)		0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0	2.5-3.0	5.5-6.0	0.5-1.0	2.5-3.0	4.0-4.5	0.2-0.5	1.5-2.0	5.5-6.0	1.0-1.5	5.0-5.5	0.2-0.4	1.2-1.5	4.0-4.5	0.5-1.0	6.5-7.0	1.0-1.5	1.0-1.5	1.0-1.5	5.5-6.0	6.5-7.0	0.5-1.0	3.0-3.5	6.0-6.5	0.5-1.0	2.5-3.0	4.5-5.0	7.0-7.5	0.5-1.0
				PID (ppm)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unit	LOR	EILs	Health-based Investigation Criteria 'A'	Health-based Investigation Criteria 'F'																									Duplicate of BH10 1.0-1.5											
Total Metals																																								
Aluminium	mg/kg	100	NE	NE	NE	–	3700	–	–	–	–	–	–	–	4900	3900	6500	–	3100	–	–	–	–	–	–	3200	–	–	–	–	–	–	3900	–	–	4400	–	–	–	–
Antimony	mg/kg	1	20	NE	NE	–	<1	–	–	–	–	–	–	–	<1	<1	<1	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	4	–	–	1	–	–	–	–
Arsenic	mg/kg	1	20	100	500	8	2	7	4	2	2	3	3	3	9	5	7	5	3	8	7	9	4	2	4	2	4	5	2	5	4	6	8	3	5	9	4	4	5	2
Barium	mg/kg	5	NE	NE	NE	–	350	–	–	–	–	–	–	–	130	320	94	–	260	–	–	–	–	–	–	280	–	–	–	–	–	–	220	–	–	240	–	–	–	–
Beryllium	mg/kg	1	1	20	100	–	<1	–	–	–	–	–	–	–	<1	<1	1	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	<1	–	–	<1	–	–	–	–
Boron	mg/kg	5	NE	NE	NE	–	<5	–	–	–	–	–	–	–	<5	<5	8	–	<5	–	–	–	–	–	–	<5	–	–	–	–	–	–	<5	–	–	<5	–	–	–	–
Cadmium	mg/kg	0.1	3	20	100	0.2	0.1	<0.1	0.1	0.2	<0.1	2.3	0.1	<0.1	0.3	0.6	0.2	<0.1	0.2	<0.1	0.5	<0.1	0.1	0.2	<0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	1.4	0.5	0.1	0.4	0.4	0.1	<0.1	0.1
Chromium	mg/kg	1	50	12000	60000	7	7	24	17	7	4	13	31	7	12	29	18	9	12	25	10	27	11	7	17	4	17	10	4	8	29	17	13	20	23	10	7	20	21	12
Cobalt	mg/kg	1	NE	NE	NE	–	8	–	–	–	–	–	–	–	8	11	16	–	8	–	–	–	–	–	–	8	–	–	–	–	–	–	9	–	–	9	–	–	–	–
Copper	mg/kg	2	60	1000	5000	20	25	24	27	24	15	37	28	27	90	57	32	19	33	25	620	40	13	22	18	36	51	110	37	100	80	36	1830	200	44	140	450	56	18	29
Lead	mg/kg	2	300	300	1500	22	14	16	23	9	5	40	350	7	120	86	38	35	44	21	338	25	17	8	11	17	33	230	26	230	84	110	2580	570	50	330	420	86	15	45
Manganese	mg/kg	5	500	1500	7500	–	140	–	–	–	–	–	–	–	120	190	180	–	150	–	–	–	–	–	–	230	–	–	–	–	–	–	120	–	–	180	–	–	–	–
Molybdenum	mg/kg	1	NE	NE	NE	–	2	–	–	–	–	–	–	–	2	4	1	–	<1	–	–	–	–	–	–	1	–	–	–	–	–	–	2	–	–	2	–	–	–	–
Nickel	mg/kg	1	60	600	3000	7	8	17	7	8	5	11	11	8	11	15	17	3	7	19	9	20	6	6	9	7	15	7	13	6	11	15	12	16	17	12	10	16	16	9
Selenium	mg/kg	2	NE	NE	NE	–	<2	–	–	–	–	–	–	–	<2	<2	<2	–	<2	–	–	–	–	–	–	<2	–	–	–	<2	–	–	<2	–	–	<2	–	–	–	–
Silver	mg/kg	0.1	20	NE	NE	–	0.5	–	–	–	–	–	–	–	0.6	0.2	0.2	–	0.4	–	–	–	–	–	–	0.5	–	–	–	1.1	–	–	0.8	–	–	0.8	–	–	–	–
Strontium	mg/kg	5	NE	NE	NE	–	100	–	–	–	–	–	–	–	34	80	40	–	<5	–	–	–	–	–	–	100	–	–	–	100	–	–	100	–	–	110	–	–	–	–
Thallium	mg/kg	1	NE	20	100	–	<1	–	–	–	–	–	–	–	<1	<1	<1	–	<1	–	–	–	–	–	–	<1	–	–	–	<1	–	–	<1	–	–	<1	–	–	–	–
Tin	mg/kg	1	50	NE	NE	–	<1	–	–	–	–	–	–	–	2	8	2	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	19	–	–	5	–	–	–	–
Vanadium	mg/kg	5	NE	NE	NE	–	33	–	–	–	–	–	–	–	31	35	40	–	32	–	–	–	–	–	–	29	–	–	–	–	–	–	53	–	–	50	–	–	–	–
Zinc	mg/kg	5	200	7000	35000	54	20	56	64	22	22	52	43	20	75	570	140	37	29	76	87	61	51	21	36	24	40	64	24	64	47	49	320	87	56	160	77	53	38	56
Mercury	mg/kg	0.05	1	15	75	0.05	<0.05	0.14	0.06	0.05	<0.05	0.08	0.05	<0.05	0.12	0.11	0.22	0.06	<0.05	0.21	0.09	0.16	0.05	<0.05	0.08	<0.05	0.07	0.09	<0.05	0.07	0.06	0.09	0.14	0.07	0.09	0.09	0.07	0.07	0.05	<0.05
Iron	mg/kg	10	NE	NE	NE		12100								20400	24000	26100		10700							10600							14900			17000				
Total Petroleum Hydrocarbons																																								
C6 - C9 Fraction	mg/kg	2	100	100	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C10 - C14 Fraction	mg/kg	50	100	100	NE	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	mg/kg	100	1000	1000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	mg/kg	100	1000	1000	NE	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	mg/kg	–	2200	2200	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
BTEX																																								
Benzene	mg/kg	0.2	1	NE	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Toluene	mg/kg	0.2	NE	130	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	mg/kg	0.2	NE	50	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
meta- & para-Xylene	mg/kg	0.2	NE	25	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ortho-Xylene	mg/kg	0.2	NE	25	NE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Polycyclic Aromatic Hydrocarbons																																								
Naphthalene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Acenaphthylene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Acenaphthene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Fluorene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Phenanthrene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Anthracene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Fluoranthene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	0.8	–	–	<0.5	–	–	–	–
Pyrene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	0.8	–	–	<0.5	–	–	–	–
Benz(a)anthracene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	0.5	–	–	<0.5	–	–	–	–
Chrysene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	0.8	–	–	<0.5	–	–	–	–
Benzo(b)&(k)fluoranthene	mg/kg	1	NE	NE	NE	–	<1	–	–	–	–	–	–	–	<1	–	–	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	<1	–	–	<1	–	–	–	–
Benzo(a)pyrene	mg/kg	0.5	NE	1	5	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Indeno(1.2.3.cd)pyrene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Dibenz(a.h)anthracene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Benzo(g.h.i)perylene	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Sum of Reported PAHs	mg/kg	–	NE	20	100	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2.7	–	–	–	–	–	–	–
Polychlorinated Biphenyls (PCB)																																								
Arochlor 1016	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Arochlor 1232	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Arochlor 1242	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Arochlor 1248	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Arochlor 1254	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Arochlor 1260	mg/kg	0.5	NE	NE	NE	–	<0.5	–	–	–	–	–	–	–	<0.5	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	–	–	–	–	<0.5	–	–	<0.5	–	–	–	–
Sum of reported PCBs		–	1	1	50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Metals (TCLP)																																								
Arsenic	ug/L	10	NE	NE	NE	–	<10	–	–	–	–	–	–	–	10	–	–	–	10	–	–	–	–	–	–	<10	–	–	–	–	–	–	10	–	–	<10	–	–	–	–
Cadmium	ug/L	1	NE	NE	NE	–	<1	–	–	–	–	–	–	–	3	–	–	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	28	–	–	2	–	–	–	–
Chromium	ug/L	50	NE	NE	NE	–	<50	–	–	–	–	–	–	–	50	–	–	–	<50	–	–	–	–	–	–	50	–	–	–	–	–	–	50	–	–	50	–	–	–	–
Copper	ug/L	50	NE	NE	NE	–	<50	–	–	–	–	–	–	–	90	–	–	–	<50	–	–	–	–	–	–	<50	–	–	–	–	–	–	7600	–	–	<50	–	–	–	–
Nickel	ug/L	50	NE	NE	NE	–	<50	–	–	–	–	–	–	–	<50	–	–	–	<50	–	–	–	–	–	–	<50	–	–	–	–	–	–	100	–	–	50	–	–	–	–
Lead	ug/L	10	NE	NE	NE	–	<10	–	–	–	–	–	–	–	120	–	–	–	10	–	–	–	–	–	–	<10	–	–	–	–	–	–	22200	–	–	80	–	–	–	–
Zinc	ug/L	50	NE	NE	NE	–	250	–	–	–	–	–	–	–	660	–	–	–	270	–	–	–	–	–	–	220	–	–	–	–	–	–	4800	–	–	700	–	–	–	–
Mercury	ug/L	1	1	15	75	–	<1	–	–	–	–	–	–	–	<1	–	–	–	<1	–	–	–	–	–	–	<1	–	–	–	–	–	–	[1]<5	–	–	<1	–	–	–	–

Note:
NE: Not Established
NA: Not Available
NP: Not Possible to calculate
NR: Not Required
– : Not analysed
LOR: Laboratory Limit of Reporting

Between EIL and Investigation Criteria 'A'
Between Investigation Criteria 'A' and Investigation Criteria 'F'
Greater than Investigation Criteria 'F'

Comments: *EQL increased due to matrix interference.

Assumptions
All <PQL results are regarded as 0 for the statistical analysis
Sufficient samples collected for the statistical analysis
All sample results included (no outliers rejected) in the statistical analysis

Published on DEHP Contaminated Land Register
Not to be used for property transactions

55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

				Sample Identification		BH13	SQA2	BH13	BH14	SQA-3	BH14	BH15	BH15	BH15	BH15	BH16	BH16	BH16	BH17	BH18	BH18	BH19	BH19	BH19	BH19	BH20	BH20	Std dev	N	95% Interval	Mean	95% Confidence Concentration
				Lab Batch No.		E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976	E023976					
				Date Sampled		10/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	10/10/05	10/10/05					
				Depth (m)		6.0-6.5	6.0-6.5	7.0-7.5	1.0-1.5	1.0-1.5	7.0-7.5	0.1-0.6	2.0-2.5	4.0-4.5	7.0-7.3	0.5-1.0	3.0-3.5	7.0-7.5	1.0-1.5	0.5-1.0	4.2-4.5	0.5-1.0	1.0-1.5	2.5-3.0	6.0-6.5	0.2-0.5	1.0-1.5					
				PID (ppm)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	Unit	LOR	EILs	Health-based Investigation Criteria 'A'	Health-based Investigation Criteria 'F'		Duplicate of BH13 6.0-6.5			Duplicate of BH14 1.0-1.5																						
Total Metals																																
Aluminium	mg/kg	100	NE	NE	NE	--	--	--	--	--	--	3800	3200	--	--	--	--	--	--	4400	--	2100	--	--	--	--	--	1093.9	12	618.91	3925.0	4543.9
Antimony	mg/kg	1	20	NE	NE	--	--	--	--	--	--	2	<1	--	--	--	--	--	--	<1	--	<1	--	--	--	--	--	1.5	12	0.86	2.3	3.2
Arsenic	mg/kg	1	20	100	500	6	5	5	5	6	6	7	<1	2	7	4	5	3	5	3	3	3	4	2	4	3	3	2.0	57	0.52	4.6	5.1
Barium	mg/kg	5	NE	NE	NE	--	--	--	--	--	--	300	170	--	--	--	--	--	--	330	--	190	--	--	--	--	--	81.7	12	46.22	240.3	286.6
Beryllium	mg/kg	1	1	20	100	--	--	--	--	--	--	<1	1	--	--	--	--	--	--	<1	--	<1	--	--	--	--	--	0.0	12	NP	1.0	NR
Boron	mg/kg	5	NE	NE	NE	--	--	--	--	--	--	<5	<5	--	--	--	--	--	--	<5	--	<5	--	--	--	--	--	NP	12	NP	8.0	NR
Cadmium	mg/kg	0.1	3	20	100	0.3	0.2	0.1	0.3	2.2	<0.1	0.5	<0.1	<0.1	<0.1	0.6	0.1	<0.1	<0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.5	57	0.13	0.3	0.5
Chromium	mg/kg	1	50	12000	60000	23	19	21	8	6	30	8	5	7	35	12	9	17	4	4	14	4	6	45	21	7	6	7.3	57	1.89	14.4	16.3
Cobalt	mg/kg	1	NE	NE	NE	--	--	--	--	--	--	13	39	--	--	--	--	--	--	12	--	47	--	--	--	--	--	13.1	12	7.42	15.7	23.1
Copper	mg/kg	2	60	1000	5000	420	180	110	130	140	35	380	37	16	25	420	32	8	71	230	25	33	31	35	43	32	32	263.2	57	68.32	120.7	189.0
Lead	mg/kg	2	300	300	1500	330	230	120	240	300	36	450	2	4	20	630	8	4	76	56	15	24	23	19	30	64	61	372.7	57	96.74	157.0	253.7
Manganese	mg/kg	5	500	1500	7500	--	--	--	--	--	--	110	60	--	--	--	--	--	--	95	--	91	--	--	--	--	--	49.0	12	27.72	138.8	166.6
Molybdenum	mg/kg	1	NE	NE	NE	--	--	--	--	--	--	3	1	--	--	--	--	--	--	2	--	1	--	--	--	--	--	0.9	12	0.53	1.9	2.4
Nickel	mg/kg	1	60	600	3000	14	16	17	15	10	23	11	32	14	23	12	15	13	11	10	12	7	16	14	19	8	10	5.3	57	1.37	12.4	13.8
Selenium	mg/kg	2	NE	NE	NE	--	--	--	--	--	--	<2	<2	--	--	--	--	--	--	<2	--	<2	--	--	--	--	--	NP	12	NP	<2	NP
Silver	mg/kg	0.1	20	NE	NE	--	--	--	--	--	--	0.1	0.1	--	--	--	--	--	--	0.5	--	0.7	--	--	--	--	--	0.3	12	0.17	0.5	0.6
Strontium	mg/kg	5	NE	NE	NE	--	--	--	--	--	--	85	27	--	--	--	--	--	--	82	--	36	--	--	--	--	--	31.5	12	17.82	72.2	90.0
Thallium	mg/kg	1	NE	20	100	--	--	--	--	--	--	<1	<1	--	--	--	--	--	--	<1	--	<1	--	--	--	--	--	NP	12	<1	NP	NP
Tin	mg/kg	1	50	NE	NE	--	--	--	--	--	--	9	<1	--	--	--	--	--	--	1	--	<1	--	--	--	--	--	6.3	12	3.56	6.6	10.1
Vanadium	mg/kg	5	NE	NE	NE	--	--	--	--	--	--	51	58	--	--	--	--	--	--	39	--	22	--	--	--	--	--	11.2	12	6.33	39.4	45.7
Zinc	mg/kg	5	200	7000	35000	230	120	80	73	69	70	160	9	11	69	100	24	26	16	36	38	24	95	57	56	75	64	85.4	57	22.16	73.6	95.8
Mercury	mg/kg	0.05	1	15	75	0.05	0.08	0.08	0.09	0.13	0.12	0.11	<0.05	0.06	0.15	0.08	0.34	<0.05	0.27	0.06	0.08	<0.05	0.09	0.05	0.08	0.11	0.13	0.1	57	0.02	0.1	0.1
Iron	mg/kg	10	NE	NE	NE							11400	4500							8100		9200						6592.1	12	3729.77	14083.3	17813.1
Total Petroleum Hydrocarbons																																
C6 - C9 Fraction	mg/kg	2	100	100	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
C10 - C14 Fraction	mg/kg	50	100	100	NE	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	NR	NR	NR	NR	NR
C15 - C28 Fraction	mg/kg	100	1000	1000	NE	<100	<100	<100	<100	<100	<100	130	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NR	NR	NR	NR	NR
C29 - C36 Fraction	mg/kg	100	1000	1000	NE	160	210	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	NR	NR	NR	NR	NR
Sum of TPH C10 - C36	mg/kg	--	2200	2200	NE	160	210	--	--	--	--	130	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
BTEX																																
Benzene	mg/kg	0.2	1	NE	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
Toluene	mg/kg	0.2	NE	130	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
Ethylbenzene	mg/kg	0.2	NE	50	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
meta- & para-Xylene	mg/kg	0.2	NE	25	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
ortho-Xylene	mg/kg	0.2	NE	25	NE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons																																
Naphthalene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Acenaphthylene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Acenaphthene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Fluorene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Phenanthrene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Anthracene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Fluoranthene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Pyrene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Benz(a)anthracene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Chrysene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Benzo(b)&(k)fluoranthene	mg/kg	1	NE	NE	NE	--	--	--	--	--	--	<1	<1	--	--	--	--	--	--	--	--	<1	--	--	--	--	--	NR	NR	NR	NR	NR
Benzo(a)pyrene	mg/kg	0.5	NE	1	5	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Indeno(1.2.3.cd)pyrene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Dibenz(a.h)anthracene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Benzo(g.h.i)perylene	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	--	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Sum of Reported PAHs	mg/kg	--	NE	20	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
Polychlorinated Biphenyls (PCB)																																
Arochlor 1016	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Arochlor 1232	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Arochlor 1242	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Arochlor 1248	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Arochlor 1254	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Arochlor 1260	mg/kg	0.5	NE	NE	NE	--	--	--	--	--	--	<0.5	<0.5	--	--	--	--	--	--	<0.5	--	<0.5	--	--	--	--	--	NR	NR	NR	NR	NR
Sum of reported PCBs		--	1	1	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	NR	NR	NR	NR
Metals (TCLP)																																
Arsenic	ug/L	10	NE	NE	NE	--	--	--	--	--	--	10	<10	--	--	--	--	--	--	--	--	<10	--	--	--	--	--	NR	NR	NR	NR	NR
Cadmium	ug/L	1	NE	NE	NE	--	--	--	--	--	--	7	<1	--	--	--	--	--	--	--	--	<1	--	--	--	--	--	NR	NR	NR	NR	NR
Chromium	ug/L	50	NE	NE	NE	--	--	--	--	--	--	50	50	--	--	--	--	--	--	--	--	50	--	--	--	--	--	NR	NR	NR	NR	NR
Copper	ug/L	50	NE	NE	NE	--	--	--	--	--	--	2200	60	--	--	--	--	--	--	--	--	<50	--	--	--	--	--	NR	NR	NR	NR	NR
Nickel	ug/L	50	NE	NE	NE	--	--	--	--	--	--	70	60	--	--	--	--	--	--	--	--	<50	--	--	--	--	--	NR	NR	NR	NR	NR
Lead	ug/L	10	NE	NE	NE	--	--	--	--	--	--	5000	<10	--	--	--	--	--	--	--	--	<10	--	--	--	--	--	NR	NR	NR	NR	NR
Zinc	ug/L	50	NE	NE	NE	--	--	--	--	--	--	2100	210	--	--	--	--	--	--	--	--	260	--	--	--	--	--	NR	NR	NR	NR	NR
Mercury	ug/L	1	1	15	75	--	--	--	--	--	--	<1	<1	--	--	--	--	--	--	--	--	<1	--	--	--	--	--	NR	NR	NR	NR	NR

Note:
NE: Not Established
NA: Not Available
NP: Not Possible to calculate
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LOR: Laboratory Limit of Reporting

Between EIL and Investigation Criteria 'A'
Between Investigation Criteria 'A' and Investigation Criteria 'F'
Greater than Investigation Criteria 'F'

Comments: *EQL increased due to matrix interference.
Assumptions: All <PQL results are regarded as 0 for the statistical analysis
Sufficient samples collected for the statistical analysis
All sample results included (no outliers rejected) in the statisti

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55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

				Sample Identification		Std dev	N	99%	Mean	99% Confidence
				Lab Batch No.				Interval		Concentration
				Date Sampled	mg/kg	-		mg/kg	mg/kg	mg/kg
				Depth (m)						
				PID (ppm)						
	Unit	LOR	EILs	Health-based Investigation Criteria 'A'	Health-based Investigation Criteria 'F'					
Total Metals										
Aluminium	mg/kg	100	NE	NE	NE	1093.9	12.0	813.4	3925.0	4738.4
Antimony	mg/kg	1	20	NE	NE	1.5	12.0	1.1	2.3	3.5
Arsenic	mg/kg	1	20	100	500	2.0	57.0	0.7	4.6	5.3
Barium	mg/kg	5	NE	NE	NE	81.7	12.0	60.7	240.3	301.1
Beryllium	mg/kg	1	1	20	100	0.0	12.0	NP	1.0	NP
Boron	mg/kg	5	NE	NE	NE	NP	12.0	NP	8.0	NP
Cadmium	mg/kg	0.1	3	20	100	0.5	57.0	0.2	0.3	0.5
Chromium	mg/kg	1	50	12000	60000	7.3	57.0	2.5	14.4	16.9
Cobalt	mg/kg	1	NE	NE	NE	13.1	12.0	9.8	15.7	25.4
Copper	mg/kg	2	60	1000	5000	263.2	57.0	89.8	120.7	210.5
Lead	mg/kg	2	300	300	1500	372.7	57.0	127.1	157.0	284.1
Manganese	mg/kg	5	500	1500	7500	49.0	12.0	36.4	138.8	175.3
Molybdenum	mg/kg	1	NE	NE	NE	0.9	12.0	0.7	1.9	2.6
Nickel	mg/kg	1	60	600	3000	5.3	57.0	1.8	12.4	14.2
Selenium	mg/kg	2	NE	NE	NE	NP	12.0	NP	<2	NP
Silver	mg/kg	0.1	20	NE	NE	0.3	12.0	0.2	0.5	0.7
Strontium	mg/kg	5	NE	NE	NE	31.5	12.0	23.4	72.2	95.6
Thallium	mg/kg	1	NE	20	100	NP	12.0	NP	<1	NP
Tin	mg/kg	1	50	NE	NE	6.3	12.0	4.7	6.6	11.3
Vanadium	mg/kg	5	NE	NE	NE	11.2	12.0	8.3	39.4	47.7
Zinc	mg/kg	5	200	7000	35000	85.4	57.0	29.1	73.6	102.7
Mercury	mg/kg	0.05	1	15	75	0.1	57.0	0.0	0.1	0.1
Iron	mg/kg	10	NE	NE	NE	6592.1	12.0	4901.8	14083.3	18985.1
Total Petroleum Hydrocarbons										
C6 - C9 Fraction	mg/kg	2	100	100	NE	NR	NR	NR	NR	NR
C10 - C14 Fraction	mg/kg	50	100	100	NE	NR	NR	NR	NR	NR
C15 - C28 Fraction	mg/kg	100	1000	1000	NE	NR	NR	NR	NR	NR
C29 - C36 Fraction	mg/kg	100	1000	1000	NE	NR	NR	NR	NR	NR
Sum of TPH C10 - C36	mg/kg	--	2200	2200	NE	NR	NR	NR	NR	NR
BTEX										
Benzene	mg/kg	0.2	1	NE	NE	NR	NR	NR	NR	NR
Toluene	mg/kg	0.2	NE	130	NE	NR	NR	NR	NR	NR
Ethylbenzene	mg/kg	0.2	NE	50	NE	NR	NR	NR	NR	NR
meta- & para-Xylene	mg/kg	0.2	NE	25	NE	NR	NR	NR	NR	NR
ortho-Xylene	mg/kg	0.2	NE	25	NE	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons										
Naphthalene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Acenaphthylene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Acenaphthene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Fluorene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Phenanthrene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Anthracene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Fluoranthene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Pyrene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Benz(a)anthracene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Chrysene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Benzo(b)&(k)fluoranthene	mg/kg	1	NE	NE	NE	NR	NR	NR	NR	NR
Benzo(a)pyrene	mg/kg	0.5	NE	1	5	NR	NR	NR	NR	NR
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Dibenz(a,h)anthracene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Benzo(g,h,i)perylene	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Sum of Reported PAHs	mg/kg	--	NE	20	100	NR	NR	NR	NR	NR
Polychlorinated Biphenyls (PCB)										
Arochlor 1016	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Arochlor 1232	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Arochlor 1242	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Arochlor 1248	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Arochlor 1254	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Arochlor 1260	mg/kg	0.5	NE	NE	NE	NR	NR	NR	NR	NR
Sum of reported PCBs		--	1	1	50	NR	NR	NR	NR	NR
Metals (TCLP)										
Arsenic	ug/L	10	NE	NE	NE	NR	NR	NR	NR	NR
Cadmium	ug/L	1	NE	NE	NE	NR	NR	NR	NR	NR
Chromium	ug/L	50	NE	NE	NE	NR	NR	NR	NR	NR
Copper	ug/L	50	NE	NE	NE	NR	NR	NR	NR	NR
Nickel	ug/L	50	NE	NE	NE	NR	NR	NR	NR	NR
Lead	ug/L	10	NE	NE	NE	NR	NR	NR	NR	NR
Zinc	ug/L	50	NE	NE	NE	NR	NR	NR	NR	NR
Mercury	ug/L	1	1	15	75	NR	NR	NR	NR	NR

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Between EIL and Investigation Criteria 'A'
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Greater than Investigation Criteria 'F'

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All sample results included (no outliers rejected) in the statisti

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55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

		Nominated Criteria				Sample ID	BH1	BH4	BH5	BH8	BH11	BH12	BH15	BH15	BH18	BH19
						Lab Report			E023976							
						Depth	1.0-1.5	0.5-1.0	1.5-2.0	0.5-1.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	0.5-1.0
						Sample Date	11/10/05	11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05
	Unit	EILs	Health-based Investigation Criteria 'A'	Health-based Investigation Criteria 'F'	EQL											
Organochlorine Pesticides (OC)																
a-BHC	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HCB	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	mg/kg	NE	10	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	mg/kg	0.2	10	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	mg/kg	NE	10	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	mg/kg	NE	50	250	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	mg/kg	NE	50	250	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	mg/kg	0.2	10	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	mg/kg	NE	NE	NE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	mg/kg	0	200	1000	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	mg/kg	NE	NE	NE	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OC Pesticides	mg/kg	NE	NE	NE		--	--	--	--	--	--	--	--	--	--
Organophosphorus Pesticides																
* Not Analysed																

NE: Not Established
NA: Not Available
-- : Not analysed

Note:
LOR: Laboratory Limit of Reporting

Between EIL and Investigation Criteria 'A'
Between Investigation Criteria 'A' and Investigation Criteria 'F'
Greater than Investigation Criteria 'F'

Published on DES under RTI Act 2009

55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

				Sample Identification		MW1/BH20	MW2/BH17	MW3/BH5	WQA1/ QA100
					Lab Batch No.				
					Date Sampled	11/10/2005	11/10/2005	11/10/2005	11/10/2005
	Unit	PQL	Dutch intervention levels for Groundwater (mg/L)	ANZECC Trigger values (marine water) (mg/L)	Nominated Criteria (mg/L)				Duplicate of MW3
pH		0.1	NE	NE	NE	6.9	7.8	7.5	--
Electrical Conductivity	uS/cm	5	NE	NE	NE	12000	9200	18000	--
Total Nitrogen	mg/L	0.1	NE	0.12	0.12	11	12	23	--
Kjeldahl Nitrogen	mg/L	0.1	NE	NE	NE	10	12	23	--
NOx	mg/L	0.02	NE	0.005	0.005	0.96	0.96	0.08	--
Ammonia as N	mg/L	1	NE	0.91	0.91	1.2	3.4	16	--
Total Phosphorus	mg/L	0.02	NE	0.025	0.025	1.55	5.14	2.63	--
Total Hardness as CaCO3	mg/L		NE	NE	NE	1400	1000	3400	--
Total Metals									
Arsenic	mg/L	0.001	0.06	NE	0.06	0.001	0.002	0.003	0.003
Cadmium	mg/L	0.0001	0.006	0.0055	0.0055	0.0003	0.0002	0.0002	0.0001
Chromium	mg/L	0.001	0.03	0.0044	0.0044	0.001	0.003	0.002	0.003
Copper	mg/L	0.001	0.075	0.0013	0.0013	0.01	0.024	0.007	0.002
Nickel	mg/L	0.001	0.075	0.07	0.07	0.013	0.003	0.008	0.008
Lead	mg/L	0.001	0.075	0.0044	0.0044	0.003	0.012	0.003	nd
Zinc	mg/L	0.002	0.8	0.015	0.015	0.32	0.415	0.157	0.095
Selenium	mg/L	0.002	0.16	NE	0.16	nd	nd	nd	nd
Molybdenum	mg/L	0.001	0.3	NE	0.3	0.019	0.011	0.013	0.013
Vanadium	mg/L	0.001	0.07	0.1	0.1	0.035	0.006	0.007	0.008
Mercury	mg/L	0.001	0.0003	0.0004	0.0004	nd	nd	nd	nd
Total Petroleum Hydrocarbons									
C10 - C14 Fraction	mg/L	0.02	NE	NE	NE	nd	nd	0.32	0.2
C15 - C28 Fraction	mg/L	0.1	NE	NE	NE	nd	nd	nd	nd
C29 - C36 Fraction	mg/L	0.1	NE	NE	NE	nd	nd	nd	nd
Sum of TPH C10 - C36	mg/L	--	0.6	0.6	0.6	--	--	0.32	0.2
BTEX									
Benzene	mg/L	0.5	0.03	0.7	0.7	nd	nd	nd	nd
Toluene	mg/L	1	1	NE	1	nd	nd	nd	nd
Ethylbenzene	mg/L	1	0.15	NE	0.15	nd	nd	nd	nd
meta- & para-Xylene	mg/L	2	0.7(a)	NE	0.07	nd	nd	nd	nd
ortho-Xylene	mg/L	1	0.7(a)	0.55	0.55	nd	nd	nd	nd
Organochlorine Pesticides (OC)									
HCB	mg/L	1	NE	NE	NE	nd	nd	nd	--
a-BHC	mg/L	1	NE	NE	NE	nd	nd	nd	--
g-BHC (Lindane)	mg/L	1	NE	NE	NE	nd	nd	nd	--
Heptachlor	mg/L	1	0.0003(b)	NE	0.0003	nd	nd	nd	--
Aldrin	mg/L	1	0.0001(c)	NE	0.0001	nd	nd	nd	--
b-BHC	mg/L	1	NE	NE	NE	nd	nd	nd	--
d-BHC	mg/L	1	NE	NE	NE	nd	nd	nd	--
Oxychlordane	mg/L	1	NE	NE	NE	nd	nd	nd	--
Heptachlor epoxide	mg/L	1	0.003	NE	0.003	nd	nd	nd	--
Endosulfan 1	mg/L	1	0.005(d)	0.00001(c)	0.00001	nd	nd	nd	--
Chlordane-Trans	mg/L	1	NE	NE	NE	nd	nd	nd	--
Chlordane-Cis	mg/L	1	NE	NE	NE	nd	nd	nd	--
trans-Nonachlor	mg/L	1	NE	NE	NE	nd	nd	nd	--
DDE	mg/L	1	0.00001	NE	NE	nd	nd	nd	--
Dieldrin	mg/L	1	0.0001(c)	NE	0.0001	nd	nd	nd	--
Endrin	mg/L	1	0.0001(c)	0.000008	0.000008	nd	nd	nd	--
DDD	mg/L	1	0.00001	NE	0.00001	nd	nd	nd	--
Endosulfan 2	mg/L	1	0.005(d)	NE	0.005	nd	nd	nd	--
DDT	mg/L	1	0.00001	NE	0.00001	nd	nd	nd	--
Endosulfan sulphate	mg/L	1	0.005(d)	NE	0.005	nd	nd	nd	--
Methoxychlor	mg/L	1	NE	NE	NE	nd	nd	nd	--

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Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

PCB									
Total Polychlorinated biphenyl	mg/L	10	NE	NE	NE	nd	nd	nd	--

Note:
(a) Dutch guideline for xylene
(b) Dutch guideline for heptachloro
(c) Dutch guideline for the sum of aldrin, dieldrin and endrin
(d) Dutch guideline for endosulfan
(e) ANZECC trigger value for endosulfan

NE: Not Established
NA: Not Applicable
nd: non detectable
-- : Not analysed
PQL: Practical Quantitation Limit
Greater than ANZECC Trigger Values (marine water)
Greater than Dutch intervention levels (Groundwater)

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RTI Act 2009

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55 PARINGA ROAD, MURARRIE, QLD

Table 1 Summary of Laboratory Results for Soil: Metals, TPH, BTEX, PAH, TCLP Metals

			Sample Identification		MW1/BH20	MW2/BH17	MW3/BH5	WQA1/ QA100
				Lab Batch No.	BE17730	BE17729	BE17728	BE17731
				Date Sampled	11/10/2005	11/10/2005	11/10/2005	11/10/2005
	Unit	PQL	ANZECC Trigger values (marine water) (ug/L)	Dutch intervention levels for Groundwater (ug/L)				Duplicate of MW3
	Unit	PQL	ANZECC Trigger values (marine water) (ug/L)					
Naphthalene	ug/L	1	70	70	nd	nd	nd	nd
Acenaphthylene	ug/L	1	NE	NE	nd	nd	nd	nd
acenaphthene	ug/L	1	NE	NE	nd	nd	nd	nd
Fluorene	ug/L	1	NE	NE	nd	nd	nd	nd
Phenanthrene	ug/L	1	NE	NE	nd	nd	nd	nd
Anthracene	ug/L	1	NE	5	nd	nd	nd	nd
Fluoranthene	ug/L	1	NE	1	nd	nd	nd	nd
pyrene	ug/L	1	NE	NE	nd	nd	nd	nd
Benzo(a)anthracene	ug/L	1	NE	0.5	nd	nd	nd	nd
chryene	ug/L	1	NE	NE	nd	nd	nd	nd
benzo(b) & (k) fluoranthene	ug/L	1	NE	0.05	nd	nd	nd	nd
benzo (a) pyrene	ug/L	1	NE	0.05	nd	nd	nd	nd
indeno(1.2.3-cd) pyrene	ug/L	1	NE	0.05	nd	nd	nd	nd
Dibenz(a.h) anthracene	ug/L	1	NE	NE	nd	nd	nd	nd
Benzo (g.h.i) perylene	ug/L	1	NE	NE	nd	nd	nd	nd

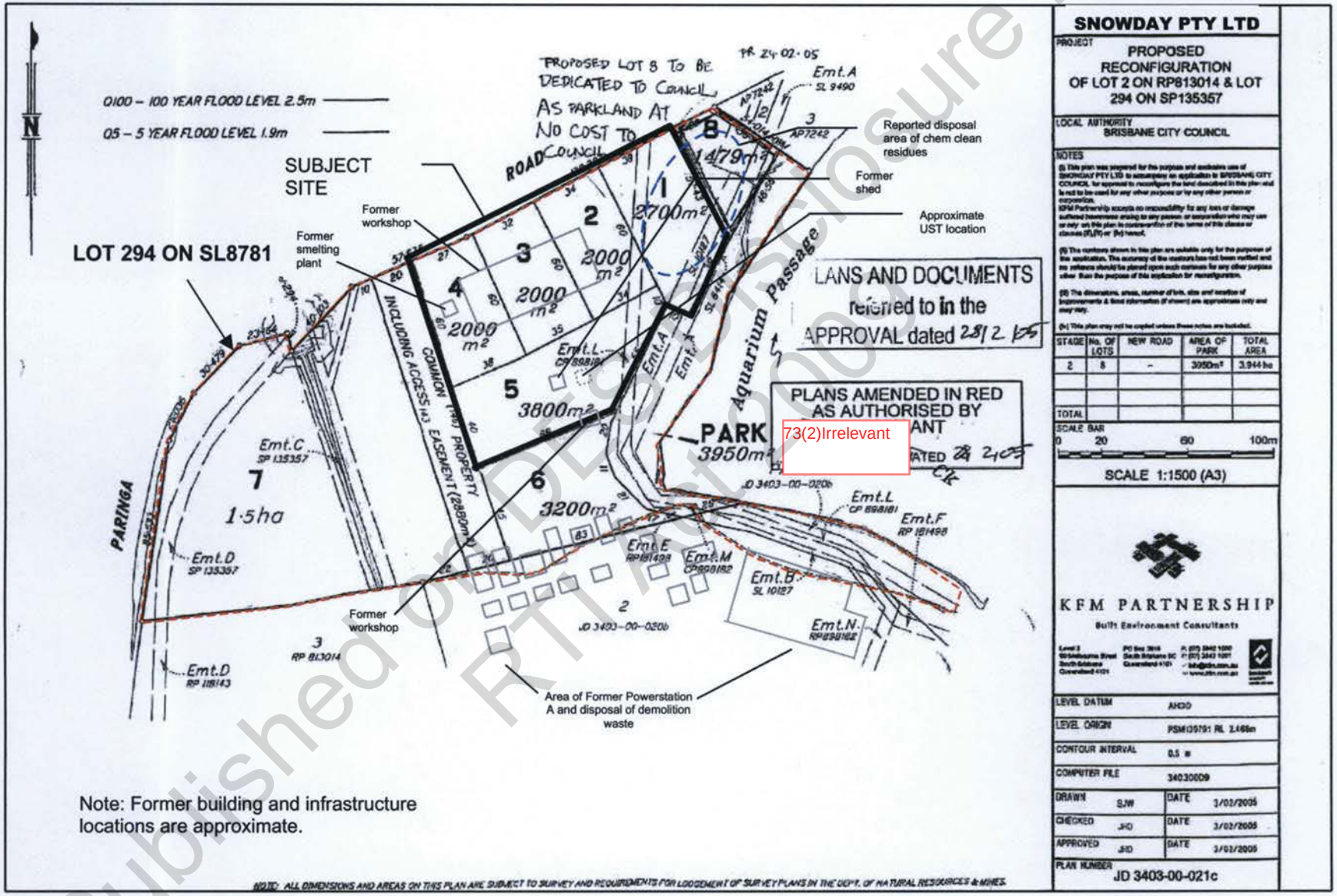
Note:
NE: Not Established
nd: non detectable
-- : Not analysed
PQL: Practical Quantitation Limit
Greater than ANZECC Trigger Values (marine water)
Greater than Dutch intervention levels (Groundwater)

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APPENDIX A

SURVEY PLAN

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R

APPENDIX B

SITE PHOTOGRAPHS

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Photo 1: View of small substation, power poles and topsoil stockpiles looking west across Lots 2, 3 and 4.



Photo 2: Stockpiles of cobbles and gravel

Published on 2 May 2023 - DES Disclosure Log

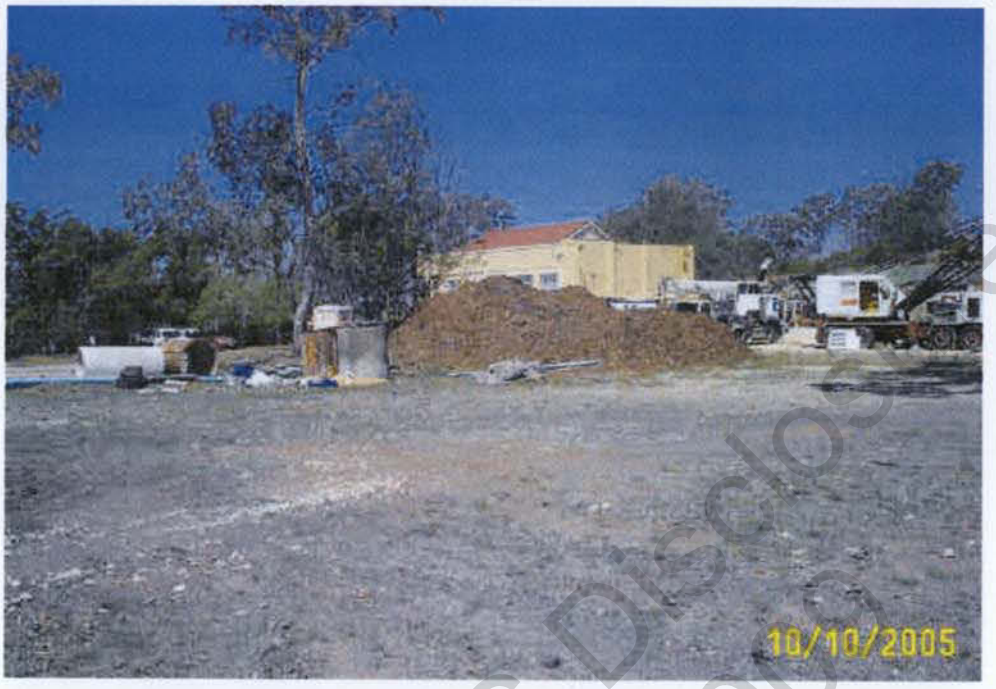


Photo 3: Stockpile of mulch and piles of construction and demolition material on Lot 5 looking south.



Photo 4: Bore hole 20 and groundwater monitoring well on Lot 5 looking south toward Aquarium Passage.

Published RTI DES Disclosure Log 2021

R

APPENDIX C

AERIAL PHOTOGRAPHS

Published on DES Disclosure Log
RTI Act 2009



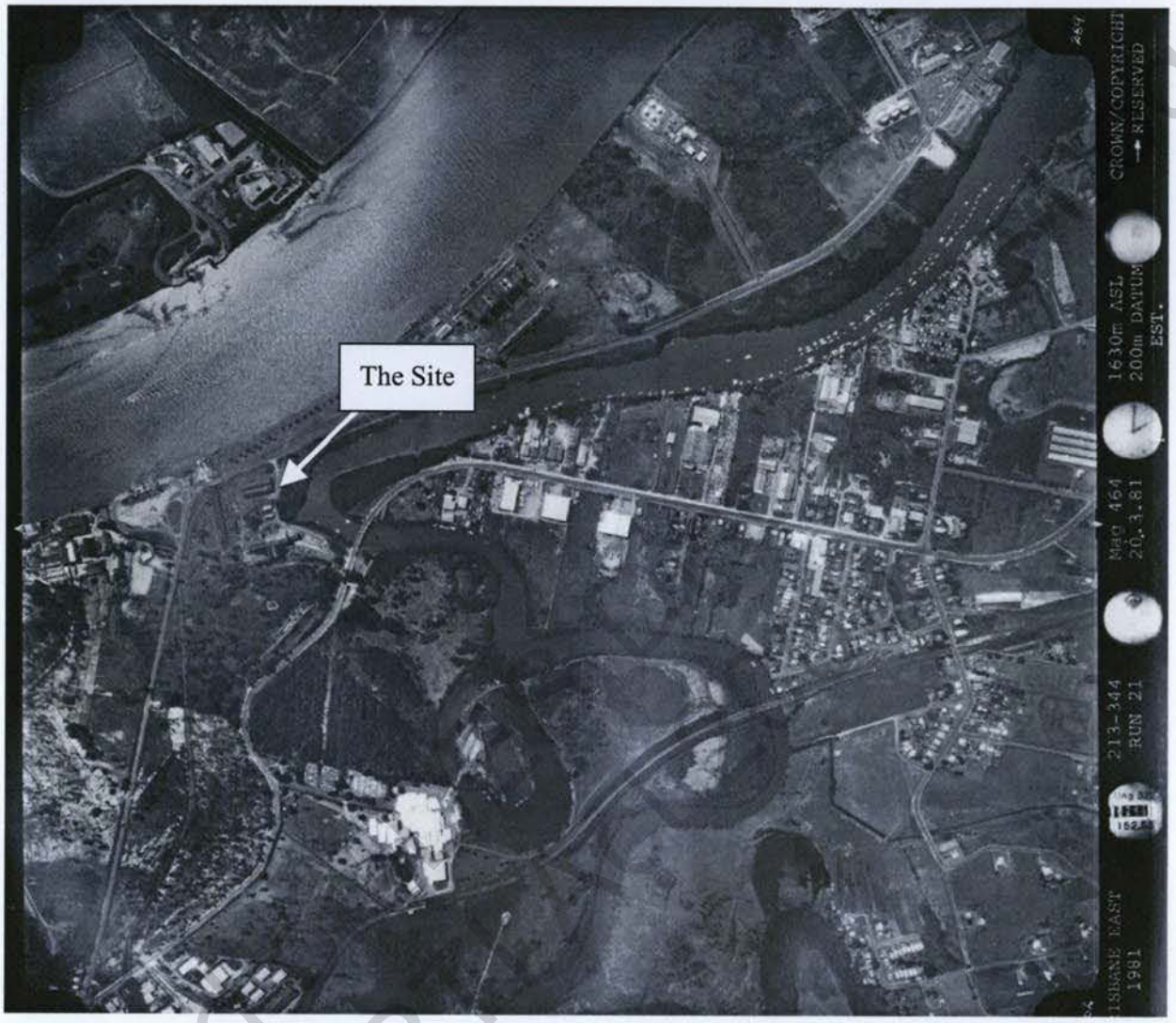
Aerial photo 1: 1946

Published by the Dorset Local History Group



Aerial photo 2: 1951

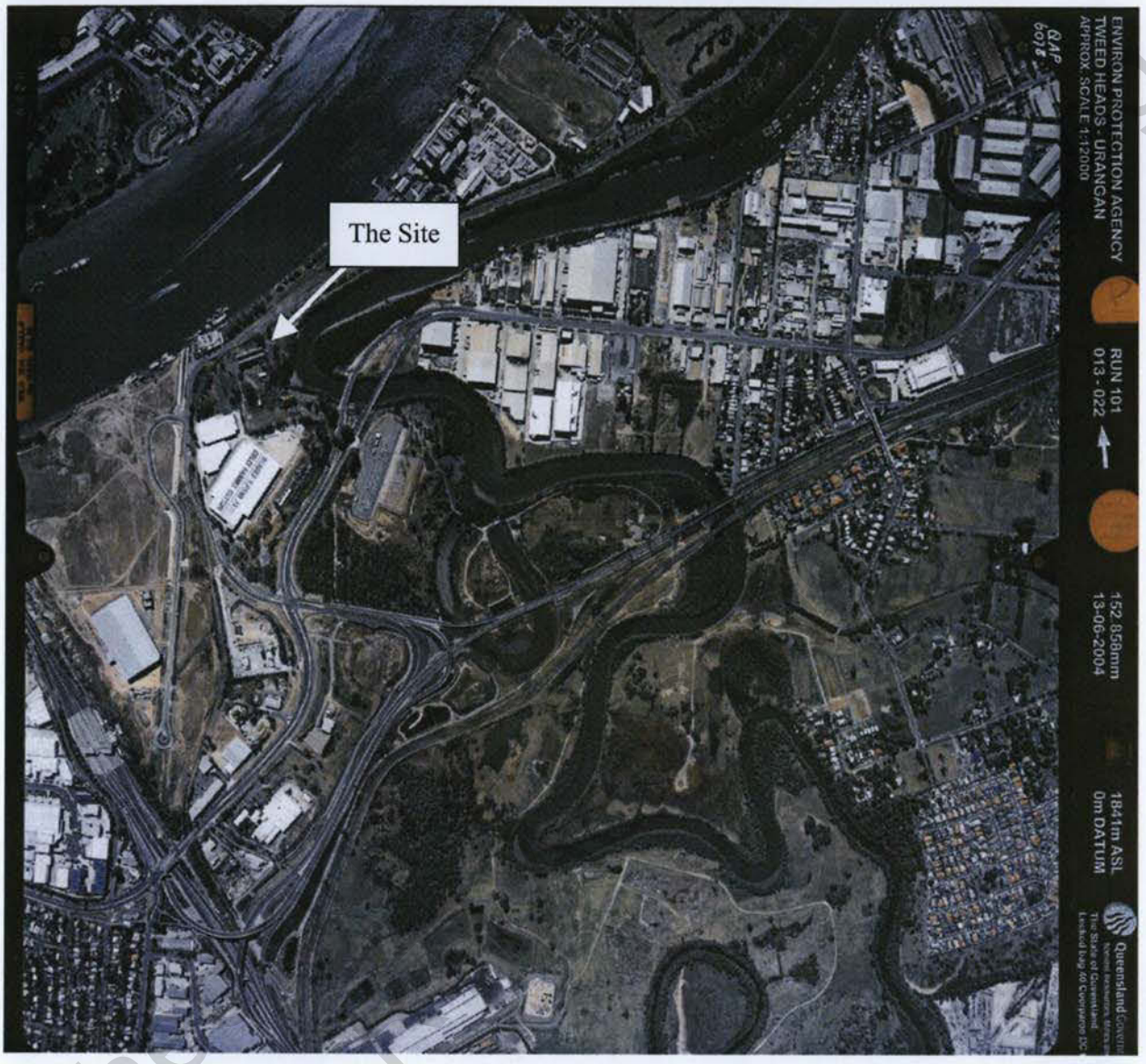
Published R



Aerial Photo 3: 1981

Published R

R



Aerial Photo 4: 2004

Published

R

APPENDIX D

HISTORICAL TITLES

Published on DES Disclosure Log
RTI Act 2009

QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108810
Search Date: 07/09/2005 10:12 am

Title Reference: 50459796
Date Created: 30/09/2003

Previous Title: 40039115

REGISTERED OWNER Interest

Dealing No: 707947127 04/08/2004

GALE DEVELOPMENTS PTY LTD A.C.N. 001 337 524 1/2
SNOWDAY PTY LTD A.C.N. 003 895 341 1/2

AS TENANTS IN COMMON

TRANSFER No 707947127
GALE DEVELOPMENTS PTY LTD A.C.N. 001 337 524
TENANT IN COMMON 1/2
SNOWDAY PTY LTD A.C.N. 003 895 341 TENANT IN COMMON 1/2
Produced at 10:39 on 04/08/2004

ESTATE AND LAND

Estate in Fee Simple

LOT 294 SURVEY PLAN 135357
County of STANLEY Parish of BULIMBA
Local Government: BRISBANE CITY

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. APPLICATION FOR TITLE No 708827766
   A Certificate of Title has been issued
   Produced at 15:45 on 15/07/2005

2. MORTGAGE No 707947148
   ST.GEORGE BANK LIMITED A.C.N. 055 513 070
   Produced at 10:40 on 04/08/2004

3. TRANSFER No 707795147
   EASEMENT IN GROSS: 703595469
   ENERGEX LIMITED A.C.N. 078 849 055
   QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
   A.C.N. 078 849 233 JOINT TENANTS
   Produced at 11:07 on 10/06/2004

4. EASEMENT No 707354326
   benefiting the land over
   EASEMENT A ON SP135376
   Produced at 15:25 on 06/01/2004

R

Published on DES Disclosure Log RTI Act 2009

QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108810
Search Date: 07/09/2005 10:12 am

Title Reference: 50459796
Date Created: 30/09/2003

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

5. EASEMENT No 707067669
   burdening the land to
   LOT 3 ON RP813014
   OVER EASEMENT C ON SP135357
   Produced at 11:01 on 09/10/2003

6. EASEMENT No 707067625
   burdening the land to
   LOTS 477 AND 621 ON CP SL8784
   OVER EASEMENT D ON SP135357
   Produced at 10:56 on 09/10/2003

7. EASEMENT IN GROSS No 703595469
   burdening the land
   ENERGEX LIMITED A.C.N. 078 849 055
   over
   EASEMENT L ON CP 898181
   Produced at 09:35 on 27/09/1999

8. EASEMENT No 602808361 (A2184)
   burdening the land to
   GAS CORPORATION OF QUEENSLAND LIMITED
   OVER EASEMENTS A AND B ON CROWN PLAN
   NO.SL10127
   Produced at 00:00 on 16/03/1987

9. EASEMENT No 602808360 (A1088)
   burdening the land to
   ASSOCIATED PIPELINES LIMITED
   OVER AN EASEMENT ON CROWN
   PLAN NO.SL6414
   Produced at 00:00 on 03/11/1977

10. Rights and interests reserved to the Crown by
    Deed of Grant No. 40039115 (Lot 294 on SP 135357)

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
707886393	SETTLMNT NTC	13/07/2004 11:29	NOT CURRENT

UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - Yes 19/07/2005 708827766 Certificate No. 1

R

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QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108810
Search Date: 07/09/2005 10:12 am

Title Reference: 50459796
Date Created: 30/09/2003

Caution - Charges do not necessarily appear in order of priority

** End of Historical Title Search **

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Requested By: External Supervisor

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RTI Act 2009

QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108811
Search Date: 07/09/2005 10:13 am

Title Reference: 40039115
Date Created: 26/09/2003

This Title Has Been Fully Cancelled

[Form 1.1] Title Reference: 40039115

QUEENSLAND

DEED OF GRANT OF LAND

Land Act 1994

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

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

WE, with the advice of the Executive Council, under the Land Act 1994, grant in fee simple all that parcel of land described in Schedule 1 to the person described in Schedule 2,

SUBJECT TO the reservations and conditions specified, and such other reservations and conditions as may be contained in and declared by the laws of the State.

Specified Reservations -
(a) All minerals (as defined by the Mineral Resources Act 1989) on and below the surface of the land
(b) The right of access for the purpose of searching for and working any mines (as defined by the Mineral Resources Act 1989) in any part of the land
(c) All petroleum (as defined by the Petroleum Act 1923) on and below the surface of the land
(d) All rights of access for the purpose of searching for and for the operations of obtaining petroleum in any part of the land, and all rights of way for access and for pipelines and other purposes requisite for obtaining and conveying petroleum in the event of petroleum being obtained in any part of the said land
(e) All quarry material (as defined by the Forestry Act 1959) on and below the surface of the land

Specified Conditions - Nil
IN TESTIMONY WHEREOF, WE have caused this OUR grant to be sealed with the Seal of the State of Queensland.

WITNESS our Trusty and Well-beloved Her Excellency Quentin Bryce, Companion of the Order of Australia, Governor in and over the State of Queensland and its Dependencies, in the Commonwealth of Australia, at

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QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108811
Search Date: 07/09/2005 10:13 am

Title Reference: 40039115
Date Created: 26/09/2003

Government House, Brisbane, in Queensland aforesaid, this 25th day of September, in the 52nd Year of Our Reign and in the year of Our Lord 2003.

REGISTERED OWNER

THE STATE OF QUEENSLAND (REPRESENTED BY DEPARTMENT OF NATURAL RESOURCES & MINES)

ESTATE AND LAND

Estate in Fee Simple

LOT 294 SURVEY PLAN 135357
County of STANLEY Parish of BULIMBA
Local Government: BRISBANE CITY

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. REQUEST FOR INDEFEASIBLE TITLE No 707034857
   An Indefeasible Title is requested for the land
   Produced at 09:51 on 30/09/2003

2. EASEMENT IN GROSS No 703595469
   burdening the land
   ENERGEX LIMITED A.C.N. 078 849 055
   over
   EASEMENT L ON CP 898181
   Produced at 09:35 on 27/09/1999

3. EASEMENT No 602808361 (A2184)
   burdening the land to
   GAS CORPORATION OF QUEENSLAND LIMITED
   OVER EASEMENTS A AND B ON CROWN PLAN NO.SL10127
   Produced at 00:00 on 16/03/1987

4. EASEMENT No 602808360 (A1088)
   burdening the land to
   ASSOCIATED PIPELINES LIMITED
   OVER AN EASEMENT ON CROWN PLAN NO.SL6414
   Produced at 00:00 on 03/11/1977

Published on DES Disclosure Log RTI Act 2009

QUEENSLAND GOVERNMENT

HISTORICAL TITLE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108811
Search Date: 07/09/2005 10:13 am

Title Reference: 40039115
Date Created: 26/09/2003

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

5. Rights and interests reserved to the Crown by Deed of Grant No. 40039115 (Lot 294 on SP 135357)

ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No

Caution - Charges do not necessarily appear in order of priority

** End of Historical Title Search **

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Requested By: External Supervisor

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QUEENSLAND GOVERNMENT

HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108813
Search Date: 07/09/2005 10:21 am

Title Reference: 17550081
Date Created: 21/10/1995

This State Tenure Has Been Fully Cancelled

DESCRIPTION OF LAND

Tenure Reference: SL 6/37065

LOT 294 CROWN PLAN SL8781
County of STANLEY Parish of BULIMBA
Local Government: BRISBANE CITY

Area: 5.150000 Ha. (SURVEYED)

No Land Description

No Forestry Entitlement Area

Purpose for which granted:
BUSINESS (ELECTRICAL WORKS)

TERM OF LEASE

Term and day of beginning of lease

Term: 31 years commencing on 01/08/1970

Expiring on 31/07/2001

REGISTERED LESSEE

Dealing No: 704372896 18/10/2000

QUEENSLAND POWER TRADING CORPORATION

TRANSFER No 704372896
QUEENSLAND POWER TRADING CORPORATION
Produced at 12:17 on 18/10/2000

TRANSFER No 703595443
AUSTA ENERGY CORPORATION LIMITED A.C.N. 078 848 781
Produced at 09:31 on 27/09/1999

TRANSFER No 703594716 REMOVED
Produced at 15:11 on 24/09/1999

Published on DES Disclosure Log
RTI Act 2009

QUEENSLAND GOVERNMENT

HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108813
Search Date: 07/09/2005 10:21 am

Title Reference: 17550081
Date Created: 21/10/1995

CONDITIONS

C179 No compensation for improvements or developmental works shall be payable by the Crown at the expiration of the term of the lease, but the lessee shall have the right to remove movable improvements within a period of three months, provided all moneys due by the lessee to the Crown on any account whatsoever have been paid. However should the leased land revert to the Crown and be again made available for lease or purchase the former lessee shall be entitled to receive payment for the value of his improvements or developmental work in accordance with the principles set out in the said Act.

C170 The lessee shall not at any time destroy any tree upon the leased land without the prior permit in writing of the Land Commissioner or contrary to any of the terms and conditions of such permit.

C173 The lessee shall not interfere with any forest products or remove any quarry material (including any stone, gravel, sand, earth, soil, rock, guano or clay which is not a mineral within the meaning of the Mining Act 1968) or other material upon the leased land without the permission of the Minister except under the authority of and in compliance in every respect with the requirements of a permit, license, agreement or contract granted or made under the Forestry Act 1959.

C5 The lessee shall allow any person authorised under the Forestry Act 1959 access to the leased land for the purpose of cutting and removing timber or removing other forest products, or quarry material, or other material from the leased land.

K1 The lessee shall maintain the leased land free from noxious plants.

E9 The lessee shall pay the cost of any required re-survey of the leased land.

M76 The conversion of tenure in terms of Section 207 of the Land Act will not be allowed.

ENCUMBRANCES

1. AMENDMENT No 704237389
IN ACCORDANCE WITH SECTION 164 OF THE LAND ACT 1994, THE TERM OF THE WITHIN TENURE HAS BEEN EXTENDED BY A PERIOD OF TWELVE (12) MONTHS TO 31 JULY 2001
Produced at 10:16 on 08/08/2000

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QUEENSLAND GOVERNMENT

HISTORICAL STATE TENURE SEARCH

NATURAL RESOURCES & MINES, QUEENSLAND

Request No: 1108813
Search Date: 07/09/2005 10:21 am

Title Reference: 17550081
Date Created: 21/10/1995

ENCUMBRANCES (Continued)

2. EASEMENT IN GROSS No 703595469
burdening the land
ENERGEX LIMITED A.C.N. 078 849 055
over
EASEMENT L ON CP 898181
Produced at 09:35 on 27/09/1999

3. EASEMENT No 602808361 (A2184)
EASEMENT IN PURSUANCE OF AN AGREEMENT DATED THE 6TH DAY OF JANUARY, 1987 BETWEEN THE LESSEE OF THE WITHIN DESCRIBED HOLDING AND
GAS CORPORATION OF QUEENSLAND LIMITED
FOR PURPOSES AS DEFINED IN SUCH AGREEMENT.
Produced at 00:00 on 16/03/1987

4. EASEMENT No 602808360 (A1088)
EASEMENT IN PURSUANCE OF AN AGREEMENT DATED THE 9TH DAY OF MAY, 1977 BETWEEN THE LESSEE OF THE WITHIN DESCRIBED HOLDING AND
ASSOCIATED PIPE LINES LIMITED
FOR PURPOSES AS DEFINED IN SUCH AGREEMENT.
Produced at 00:00 on 03/11/1977

5. EASEMENT No 602808359 (A1017)
EASEMENT IN PURSUANCE OF AN AGREEMENT DATED THE 18TH DAY OF FEBRUARY, 1975, BETWEEN THE LESSEE OF THE WITHIN DESCRIBED HOLDING AND
AUSTRAL-PACIFIC FERTILIZERS LIMITED.
FOR PURPOSES AS DEFINED IN SUCH AGREEMENT.
Produced at 00:00 on 17/05/1977

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
AS7081J	ROAD CLOSURE DEPT OF LANDS 91/000624	12/08/1991 00:00	CURRENT

UNREGISTERED DEALINGS - NIL

ORIGINAL LEASE IN EXISTENCE - No

Caution - Charges do not necessarily appear in order of priority

** End of State Tenure Search **

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Requested By: External Supervisor

R

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7550/81 74-1180

VOL. 7550 FOL. 81

Special Lease No. 06/37065

VOL: S 7550 FOL: 81

17550081

QUEENSLAND

Lease for Special Purposes, under Section 203(a) of the Land Act 1962–1974

Queen of

Elizabeth the Second, by the Grace of God, ~~of the United Kingdom~~, Australia, and Her other Realms and Territories, ~~Queen~~, Head of the Commonwealth, ~~Defender of the Faith~~ —

To All to whom these Presents shall come, Greeting:

Whereas THE SOUTHERN ELECTRIC AUTHORITY OF QUEENSLAND

has made application for a lease under the provisions of Section 203(a) of the *Land Act* 1962–1974 (hereinafter referred to as "the said Act") of the Land hereinafter described: AND WHEREAS the Governor of Our State of Queensland, with the advice of the Executive Council thereof, has granted such application, and has agreed to issue a Lease of the said Land in Our name for the term, at the rent, and upon and subject to the conditions hereinafter mentioned: NOW KNOW YE that in consideration of the premises, and of the rent, reservations, and conditions hereinafter reserved and contained, WE, in pursuance of the said Act

73(2)Irre

DO HEREBY for Us, Our Heirs and Successors, Demise and Lease unto the said THE SOUTHERN ELECTRIC AUTHORITY OF QUEENSLAND (hereinafter with its Successors in title designated "the Lessee"), and its lawful Assigns, for Business (Electrical Works) purposes,

ALL that parcel of Land particularly described in the First Schedule endorsed on these Presents TO HOLD the same unto the Lessee and its lawful Assigns for and during the term of Thirty Years to be computed from the First day of August, One thousand nine hundred and seventy with, under, and subject to the terms, conditions, provisions, exceptions, reservations, provisoes, penalties, and forfeitures hereinafter particularly mentioned or referred to, or contained in or prescribed by the said Act, and to the conditions, reservations, and provisoes in the *Mining Act* 1968–1973, and "*The Petroleum Acts*, 1923 *to* 1967," or any Regulations made or which may hereafter be made under the aforesaid Acts, or any of them: YIELDING AND PAYING unto Us, Our Heirs and Successors, subject to the provisions of the said Act

31-07-2000.

for the first period of ten years of the said term the yearly rent of Three thousand and ninety dollars and for the two remaining periods of ten years each such yearly rent as shall be determined by the Land Court,

such rent to be paid at the Office in Brisbane of the Department of Lands, or at any District Land Office, in Our said State, or at such other place as may from time to time be appointed by the Governor of Our said State in Council, on or before the First day of January in each and every year of the said term: AND IT IS HEREBY EXPRESSLY DECLARED AND AGREED that the Lessee shall not in any way assign or sublet the said Land, or any part thereof, or grant to any person the right of occupation or tenancy to, over, or upon the said Land, or any part thereof, or of any structure or building erected thereon, without the consent in writing of the Minister for Lands and Forestry for the time being of Our said State first had and obtained: AND IT IS ALSO DECLARED AND AGREED and these Presents are upon the express condition, that the Lease hereby granted shall be subject to the conditions set forth in the Second Schedule endorsed hereon: AND that if the Lessee makes default in payment of the rent hereby reserved, or any part thereof, at the times and in the manner herein prescribed, or fails to observe and perform the terms, stipulations, agreements, and conditions herein and in the Second Schedule contained or referred to, or any of them, then, and in such case, this Lease shall be liable to be forfeited. AND WE DO HEREBY RESERVE unto Us, Our Heirs and Successors, the full and free right to take and remove any Indigenous Timber growing thereon, and all other Materials being the natural products of the said Land, or being within, upon, or under the same, which may at any time hereafter be required for the construction or repair of any Public Works: AND ALSO, the right of full and free ingress, egress, and regress, into, upon, over, and out of the said Land for the several purposes aforesaid: PROVIDED ALWAYS AND WE DO HEREBY RESERVE unto Us, Our Heirs and Successors, all Gold and Minerals (the term "Minerals" to have the same meaning as in the *Mining Act* 1968–1973)

STAMP DUTIES OFFICE
043152 -3 MAR 1975
[Form 18]
BRISBANE

DUTY STAMP 1?0

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on and below the surface of the said Land, and all Mines of Gold and Minerals on and below the surface of the said Land: AND WE DO HEREBY ALSO RESERVE unto Us, Our Heirs and Successors, and to such persons as shall from time to time be duly authorised by Us in that behalf, during the term of the said Lease, the free right and privilege of access, including ingress, egress, and regress, into, upon, over, and out of the said Land, for the purpose of searching for or working Gold and Minerals, or any of them, or Mining for Gold and Minerals, or any of them, in any part of the said Land: AND WE DO HEREBY ALSO RESERVE unto Us, Our Heirs and Successors, all Petroleum (the term "Petroleum" to have the same meaning as in "*The Petroleum Acts, 1923 to 1967*"), on or below the surface of the said Land: AND ALSO all rights of access for the purpose of searching for and for the operations of obtaining Petroleum in any part of the said Land: AND ALSO all rights of way for access and for pipe lines and other purposes requisite for obtaining and conveying Petroleum in the event of Petroleum being obtained in any part of the said Land: ~~AND WE DO HEREBY ALSO RESERVE unto Us, Our Heirs and Successors, all Helium found in association with Petroleum in any part of the said Land:~~ AND WE DO FURTHER RESERVE the right of any person duly authorised in that behalf by the Governor of Our said State in Council at all times to go upon the said Land, or any part thereof, for any purpose whatsoever, or to make any survey, inspection, or examination of the same.

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

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

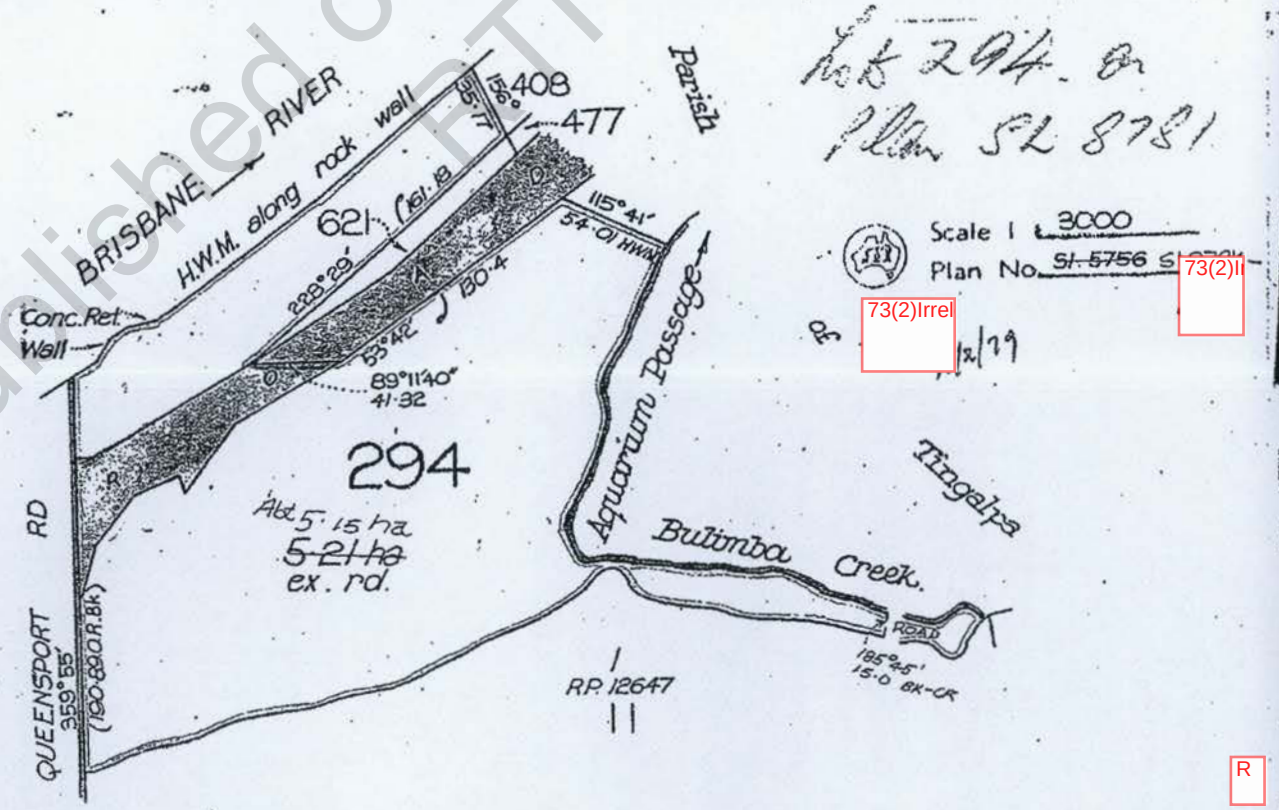
73(2)Irrelevant

FIRST SCHEDULE

SPECIAL LEASE No. 06/37065 DISTRICT: Brisbane

COUNTY: Stanley PARISH: Bulimba PORTION: Two hundred and ninety-four

AREA: ~~5.210 hectares.~~ Abt 5.15 ha.



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SECOND SCHEDULE

(*Conditions*)

~~The right of resuming the whole or any part of the leased land at any time, on giving six months' notice, on compensating for improvements only, shall be reserved to the Crown.~~

No compensation for improvements or developmental works shall be payable by the Crown at the expiration of the term of the lease, but the Lessee shall have the right to remove moveable improvements within a period of three months, provided all moneys due by the Lessee to the Crown on any account whatsoever have been paid. However should the leased land revert to the Crown and be again made available for lease or purchase the former Lessee shall be entitled to receive payment for the value of its improvements or developmental work in accordance with the principles set out in the said Act.

The Lessee shall not at any time destroy any tree upon the leased land without the prior permit in writing of the Land Commissioner or contrary to any of the terms and conditions of such permit.

The Lessee shall not interfere with any forest products or remove any quarry material (including any stone, gravel, sand, earth, soil, rock, guano or clay which is not a mineral within the meaning of the *Mining Act* 1968–1973) or other material upon the leased land without the permission of the Minister except under the authority of and in compliance in every respect with the requirements of a permit, license, agreement or contract granted or made under the *Forestry Act* 1959–1974.

The Lessee shall allow any person authorised under the *Forestry Act* 1959–1974 access to the leased land for the purpose of cutting and removing timber or removing other forest products, or quarry material, or other material from the leased land.

The Lessee shall maintain the leased land free from noxious plants.

The Lessee shall pay the cost of any required re-survey of the leased land.

73(2)Irrele

The conversion of tenure in terms of Section 207 of the Land Act will not be allowed.

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Transfers, Mortgages, Etc., Registered

EASEMENT No. A1017 in pursuance of an Agreement dated the 18th day of February, 1975 between the lessee of the within described holding and AUSTRAL-PACIFIC FERTILIZERS LIMITED for purposes as defined in such Agreement.
Registered: 12 MAY 1977
73(2)Irrelevant
Registrar of Dealings

EASEMENT No. A2184 in pursuance of an Agreement dated the 6th day of January, 1987 between the lessee of the within-described holding and GAS CORPORATION OF QUEENSLAND LIMITED for purposes as defined in such Agreement.
Registered
16 MAR 1987
73(2)Irrelevant
Registrar of Dealings

EASEMENT No. A1088 in pursuance of an Agreement dated the 9th day of May, 1977, between the lessee of the within-described holding and ASSOCIATED PIPELINES LIMITED for purposes as defined in such Agreement.
Registered: 3 NO
73(2)Irrelevant
Registrar of Dealings

QUEENSLAND GENERATION CORPORATION
is now the registered lessee of the withindescribed holding.
TRANSFER No. 700609388
PRODUCED 18 APR 1995
REGISTERED 30 MAY 1995
73(2)Irrelev
REGISTRAR OF TITLES

IN pursuance of the Electricity Act 1976 the name of the lessee in respect of the withindescribed holding has been changed to [illegible] ELECTRICITY GENERATING CO. LTD.
Registered: 12 MAY 1978
73(2)Irrelevant
Registrar of Dealings
73(2)Irre

surrender of an area for road purposes from
abt. 5.15 ha.
$3054.42
1st October, 1978.
73(2)Irrelevant

In terms of Regulation 41A (1) of the Land Regulations, the description of the Land comprised in the within lease is amended to lot 294 on plan SL 8781
73(2)Irrelevant
Registrar of Dealings

IN pursuance of Clause 5 of the Schedule to the Electricity Act Amendment Act 1984, No. 96, the Lessee's interest in the withindescribed holding is now vested in QUEENSLAND ELECTRICITY COMMISSION.
Registered:
-3 JUN 1985
73(2)Irrelevant
Registrar of Dealings

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APPENDIX E

ENVIRONMENTAL MANAGEMENT REGISTER AND CONTAMINATED LAND REGISTER SEARCHES

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QLD ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL MANAGEMENT REGISTER (EMR)
CONTAMINATED LAND REGISTER (CLR)
Transaction ID: 784157 EMR Site Id: 44374 16 November 2005

This response relates to a search request received for the site:
Lot: 294 Plan: SP135357

EMR RESULT

The above site IS included on the Environmental Management Register.

The site you have searched has been subdivided from the following site, which is included on the EMR. Subdivided new parcels will remain on the EMR unless it can be shown that they are not located near the contaminating activity.

Lot: 294 Plan: SL8781
Address: 323 QUEENSPORT ROAD
MURARRIE 4172

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

WASTE STORAGE, TREATMENT OR DISPOSAL - storing, treating, reprocessing or disposing of regulated waste (other than at the place it is generated), including operating a nightsoil disposal site or sewage treatment plant where the site or plant has a design capacity that is more than the equivalent of 50, 000 persons having sludge drying beds or on-site disposal facilities.
ABRASIVE BLASTING - carrying out abrasive blast cleaning (other than cleaning carried out in fully enclosed booths) or disposing of abrasive blasting material.

CLR RESULT

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

ADDITIONAL ADVICE

Note: Under the amended Regulation on 1 July 2005 the statutory fee for a search extract increased to $34.00 per lot for Internet Searches & $40.00 per lot otherwise. Extra service fees apply for CITEC CONFIRM'S Internet and Express services.
********Please update your records with the above advice*********

If you have any queries in relation to this search please phone (07) 3227 7370.
Lindi Bowen
Registrar, Contaminated Land Unit

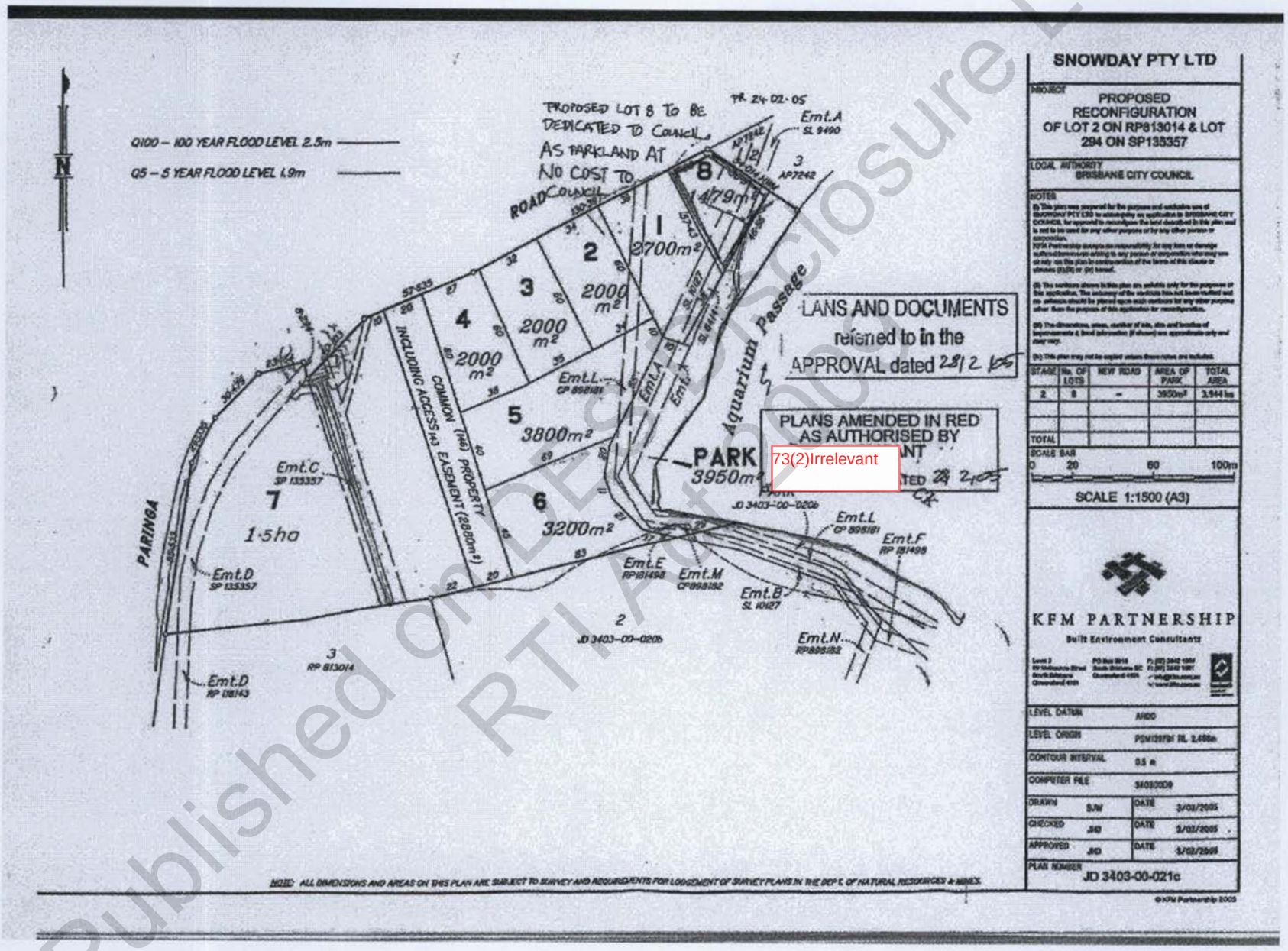
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APPENDIX F

REGISTERED PLAN

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Land Title Act 1994 : Land Act 1994
Form 21 Version 2

SURVEY PLAN

Sheet 1 of 2

REFERENCE MARKS

STN	TO	BEARING	DIST	ORIGIN	
1	OIP	At Station		2/SL5756	
	Screw fd in Bridge abut	78°05'50"	34·382		
2	Pin	231°44'50"	5·676		
	Screw fd in Bridge abut	109°13'50"	22·598		
4	OIP	152°35'	1·006	8/SL5625	
6	OIP	147°29'25"	1·016	10/SL5625	
8	OIP flush	247°13'30"	1·368	19/SL5625	
	OIP	81°19'30"	24·873	77/SL5625	
	OIP in Conc Bolster	75°23'	37·07	11/SL9740	
9	OIP	190°39'	0·956	1/SL5256	N&C
11	O.Screw	246°0'	1·192	21/CP846615	

DIAGRAM A

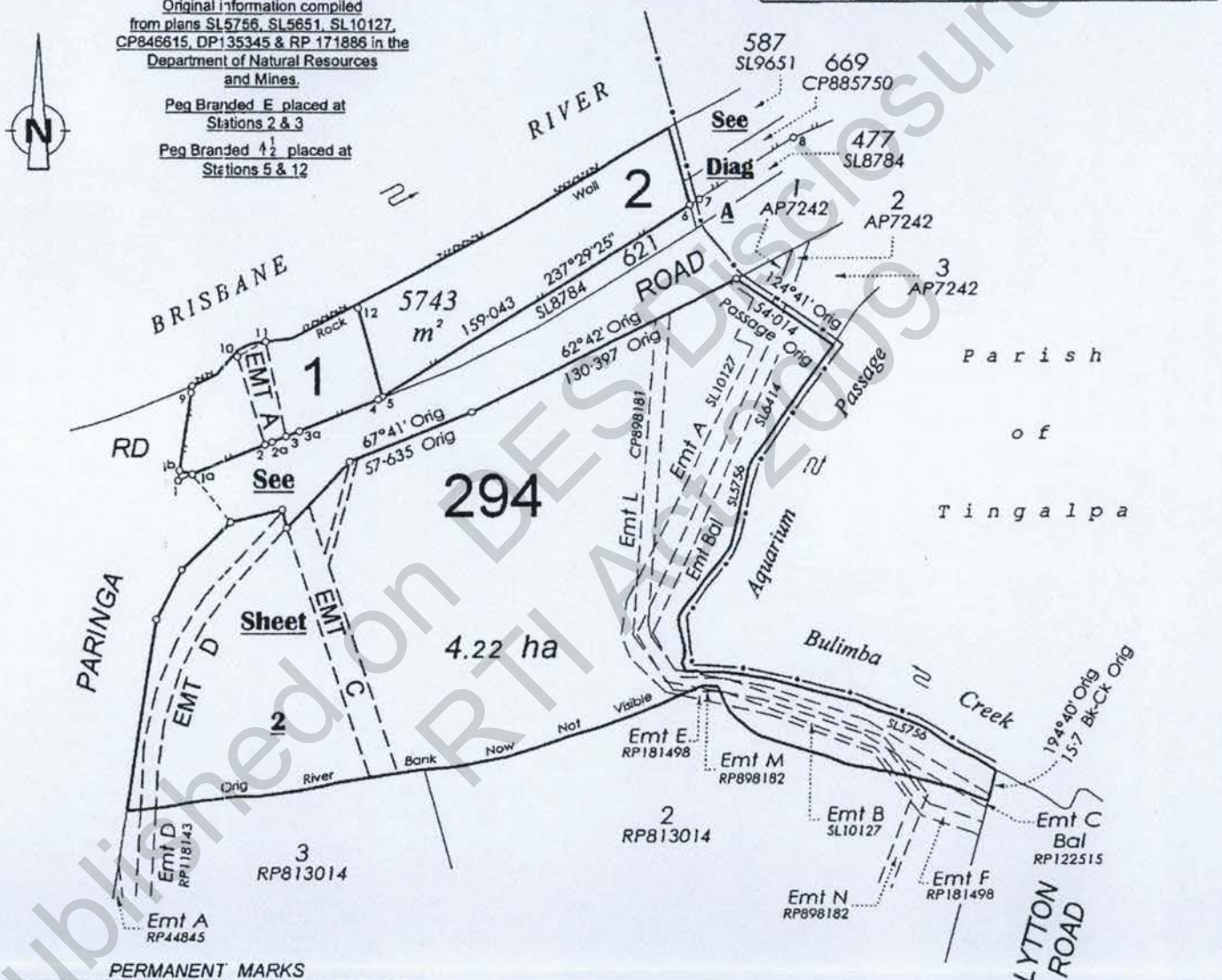
Not to Scale



Original information compiled from plans SL5756, SL5651, SL10127, CP846615, DP135345 & RP 171886 in the Department of Natural Resources and Mines.

Peg Branded E placed at Stations 2 & 3

Peg Branded 1 1/2 placed at Stations 5 & 12



PERMANENT MARKS

PM	BEARING	DIST	No	ORIGIN	
8-OPM	89°28'15"	17·684	126440	12/SL9740	New conn
"	342°29'30"	31·865	26680	1/SL965	" "
9-OPM	225°19'50"	12·702	142468	1/SP135346	N&C

0 40 80 120 160 200 m

Scale:- 1 : 2000

0 50mm 100mm 150mm

State copyright reserved

73(2)Irreleva

I hereby certify that I have surveyed the land comprised in this plan personally, that the plan is accurate, that the said survey was performed in accordance with the Surveyors Act 1977 and the Surveyors Regulation 1992 and that the said survey was completed on 25.10.2001.

73(2)Irrelevant ..... Licensed Surveyor

Date 29./.2002

Lots 1, 2, 294 and Proposed Easements A in Lot 1, and C & D in Lot 294

Cancelling Lot 294 on plan SL8781

PARISH: BULIMBA COUNTY: STANLEY

Meridian AMG vide plan DP135345 (Zone 56) F/N's Yes

Scale 1 : 2000

Format STANDARD

SP135357

Plan Status

Copyright protects the plan/s being ordered by you. Unauthorised reproduction or amendment is not permitted. Contact the surveyor or Spatial Queensland Ltd for information.

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706854575

NO FEE
04/08/2003 09:15

BE 494

WARNING : Folded or Mutilated Plans will not be accepted.
Plans may be rolled.
Information may not be placed in the outer margins.

Registered

5 Lodged by
D. Sharpe
SLM
NRSM
Level 4, Ata Centre x 78110
(include address, phone number, reference, and Lodger Code)

1 Certificate of Registered Owners or Lessees.

I/We .....

(Names in full)

*as Registered Owners of this land agree to this plan and dedicate the Public Use Land as shown hereon in accordance with Section 50 of the Land Title Act 1994.

*as Leesees of this land agree to this plan.

Signature of *Registered Owners *Lessees

APPROVED

73(2)Irrelevant

...ert Brandes
...rd Officer
Delegate of the Minister for Natural Resources and Minister for Mines
30/7/03

* Rule out whichever is inapplicable

2 Local Government Certificate.

* .....

certifies that the requirements of this Council, the Local Government Act 1993, the Local Government (Planning and Environment) Act 1990, the City of Brisbane Act 1924, and all Local Laws and Ordinances have been complied with subject to

Dated this ..... day of .....

#

#

* Insert the name of the Local Government.
# Insert designation of signatory or delegation

3 Plans with Community Management Statement :
CMS Number :
Name :

4 References :
Dept File : SL 32065
Local Govt :
Surveyor :

6

Existing			Created		
Title Reference	Lot	Plan	Lots	Emts	Road
	294	SL8781	1, 2 & 294	A, C & D	

Departmental Action
No Plan Deposit fee required 73(2)Ir

294	1, 2 & 294
Orig	Lots

7 Portion Allocation :

8 Map Reference :
9543-33211

9. Locality :
MURARRIE

10. Local Government :
BRISBANE C.C.

11. Passed & Endorsed :
By : DEPT. OF NATURAL RESOURCES & MINES
Date : 29·1·2002
Signed : 73(2)Irrelevant
Designation : LICENSED SURVEYOR

12. Building Format Plans only.
I certify that :
* As far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road;
* Part of the building shown on this plan encroaches onto adjoining * lots and road

Licensed Surveyor/Director * Date
* delete words not required

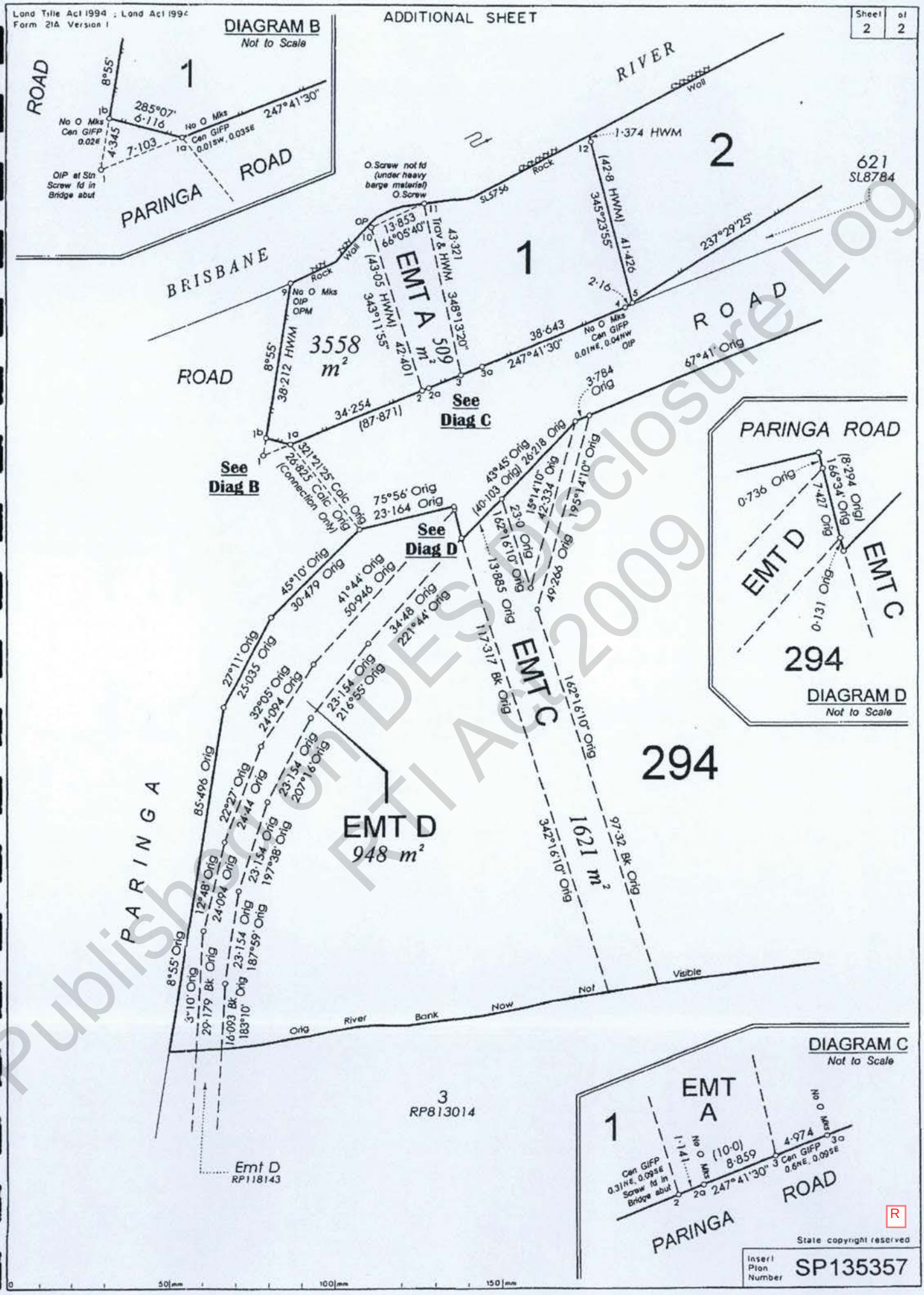
13. Lodgement Fees :

Survey Deposit	$
Lodgement	$
New Titles	$
Photocopy	$
Postage	$
TOTAL	$

14. Insert Plan Number SP135357

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APPENDIX G

BORELOGS

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R

HOLE No.: BH1
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	5.0 m bgl ▼	0	0 - 1.0m Red-brown SAND fill, loose, dry			BH1 0.5-1.0
		1				
		2				BH1 1.0-1.5 SQA7
		3				BH1 2.5-3.0
		4	1.0 - 6.0m ASH fill, black, loose, dry, with some natural gravel and sand			
		5				
		6				
		7	6.0 - 7.5m Marine CLAY			BH1 6.5-7.0
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH1

DATE: October 2005 | JOB No.: A399 | FIG. No.:

Ph: 07 3366 5778 Fax: 07 3366 7302

R

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HOLE No.: BH2
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	5.0 m bgl ▼	0	0 - 0.1m Road base, sandy, natural GRAVEL			
		1	0.1 - 1.0m Red-brown sandy SILT fill, loose, dry			BH2 0.5-1.0 SQA6 BH2 1.0-1.5
		2	1.0 - 7.5m ASH fill, black, loose, dry, with some natural gravel and sand			BH2 2.5-3.0
		3				
		4				
		5				
		6				
		7				BH2 6.5-7.0
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH2

DATE: October 2005

JOB No.: A399

FIG. No.:

Ph: 07 3366 5778 Fax: 07 3366 7302

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R

HOLE No.: BH3
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS		0	0 - 0.7m red-brown SAND fill, loose, dry			BH3 0.5-1.0
		1				BH3 1.0-1.5
		2				
		3				BH3 2.5-3.0
		4	0.7 - 6.0m ASH fill, black			
		5				
		6				BH3 5.5-6.0
		7	End of Hole 6.0m No water encountered			
		8				

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH3

DATE: October 2005 | JOB No.: A399 | FIG. No.:

Ph: 07 3366 5778 Fax: 07 3366 7302

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HOLE No.: BH4
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	3.0 m bgl ▼	0	0 - 0.5m Road base, orange, sandy natural GRAVEL			
		1	0.5 - 4.0m ASH fill, black			BH4 0.5-1.0 BH4 1.0-1.5
		2				
		3				BH4 2.5-3.0
		4				BH4 4.0-4.5
		5	4.0 - 7.5m Marine CLAY			
		6				
		7				
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH4

DATE: October 2005 | JOB No.: A399 | FIG. No.:

Ph: 07 3366 5778 Fax: 07 3366 7302

Published on DES Disclosure Log RTI Act 2009

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HOLE No.: BH5 **RL:**

LOCATION: Parringa Rd

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
		0	0 - 0.7m Road base, range of sandy natural GRAVEL, dry,		Concrete Cap Bentonite fill	BH5 0.2-0.5
		1	0.7- 1.5m Dark grey ASH fill with some sand and natural gravel			
		2	1.5 - 4.5m Black ASH, dry, loose		Sand	BH5 1.5-2.0
	4.0 m bgl ▼	3				BH5 2.5-3.0
		4	Black ASH, wet			BH5 4.0-4.5
		5	4.5 - 6.0m Dark grey CLAY, low plasticity, soft, wet.			BH5 4.5-5.0
		6				BH5 5.5-6.0
			End of Hole 6.0m			
		7				
		8				

DRILLER - Geoprobe

COMMENCED - 11/10/05

COMPLETED - 11/10/05

LOGGED BY - 73(2)Irrele

Depth while drilling ▼

Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH5

DATE: October 2005

JOB No.: A399

FIG. No.:

Ph: 07 3366 5778 Fax: 07 3366 7302

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HOLE No.: BH6
LOCATION: Parringa Rd
RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	4.5 m bgl ▼	0	0 - 0.1m Road base orange brown, sandy natural GRAVEL			
		1	0.1 - 5.0m ASH fill, dark grey, dry, loose, with some natural gravel and sand			BH6 1.0-1.5
		2				
		3				
		4				
		5	5.0 - 6.0m Marine CLAY			BH6 5.0-5.5
		6	End of Hole 6.0m			
		7				
		8				

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH6

DATE: October 2005
JOB No.: A399
FIG. No.:

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HOLE No.: BH7 LOCATION: Parringa Rd						RL:
Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	3.0m bgl ▼	0 1 2 3 4 5 6 7 8	0 - 1.0 m Road base, sandy natural GRAVEL 1.0 - 4.0m ASH fill 4.0 - 4.5m Brown CLAY, medium plasticity, soft, moist, natural layer End of Hole 4.5m			BH7 0.2-0.4 BH7 1.2-1.5 BH7 2.5-3.0 SQA7 BH7 4.0-4.5

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH7

DATE: October 2005 | **JOB No.:** A399 | **FIG. No.:**

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HOLE No.: BH8
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	3.7 m bgl ▼	0	0 - 0.4m Road base, sandy natural GRAVEL			
		1	0.4 - 5.5m ASH fill, black, dry, loose			BH8 0.5-1.0
		2				BH8 1.0-1.5
		3				
		4				
		5				
		6	5.5 - 7.5 m Marine CLAY			
		7				BH8 6.5-7.0
		8	End of Hole 7.5 m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrelev

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH8

DATE: October 2005 | JOB No.: A399 | FIG. No.:

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HOLE No.: BH9
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS		0	0 - 2.0m ASH fill			BH9 0.0-0.5 BH9 1.0-1.5 SQA4A
		2	End of Hole 2.0 m Refusal Water not encountered			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irre

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH9

DATE: October 2005 | JOB No.: A399 | FIG. No.:

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HOLE No.: BH10
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	4.0 m bgl ▼	0	0 - 0.3m ASH			
			0.3 - 0.5m FILL Road base, orange, sandy, natural GRAVEL			
			0.5 - 0.6m FILL Medium GRAVEL (clinker/slag), subrounded to subangular, dry, loose			
		1	0.6 - 1.6m grey, gravelly, silty fill, dry, loose			BH10 1.0-1.5
		2	1.6 - 6.5m FILL: medium-coarse GRAVEL (clinker/slag), loose			
		3				
		4				
		5				BH10 5.5-6.0
		6				
		7	6.5 - 7.5m Marine CLAY, wet, mixed with some rubble			BH10 6.5-7.0
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irre

Depth while drilling ▼
Depth after drilling ▽

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PROJECT: BH10

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HOLE No.: BH11
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	4.0 m bgl ▼	0	0 - 6.0m ASH with some sand and natural gravel, dry, loose, no odour			BH11 0.5-1.0 BH11 1.5-2.0 SQA-1 BH11 3.0-3.5
		6	6.0 - 7.5m Marine CLAY			BH11 6.0-6.5
		7	End of Hole 7.5m			
		8				

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irre

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH11

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HOLE No.: BH12
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	4.5 m bgl ▽	0	0 - 0.3m ASH fill with fine to coarse gravel. dry, loose. some silt 0.3 - 0.5m silty, gravelly, sandy fill, dry, loose, orange			
		1				BH12 0.5-1.0
		2	0.5 - 7.0m ASH, some natural gravel, loose, dry. Fine - medium natural gravel,			BH12 1.5-2.0
		3	subangular, some salt and clay lenses			BH12 2.5-3.0
		4				BH12 3.5-4.0
		5				BH12 4.5-5.0
		6				
		7	7.0 - 7.3m Dark grey marine CLAY, wet - moist, soft, low plasticity, anaerobic odour 7.3 - 7.5m SAND, fine, wet, loose, white/ orange/grey with marine clay lenses throughout			BH12 7.0-7.5
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irre

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH12

DATE: October 2005 | JOB No.: A399 | FIG. No.:

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HOLE No.: BH13
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	5.0 m bgl ▽	0	0 - 0.5m ASH fill with some natural, medium subangular gravel and coarse sand			
		1	0.5 - 1.1m Orange/brown gravelly silty fill, dry, loose			BH13 0.5-1.0
		2	FILL: Medium to coarse GRAVEL (clinker/slag), subangular to subroiunded loose, moist-wet			
		3				
		4				
		5				
		6				BH13 6.0-6.5 SQA2
		7	7.0 - 7.5m Marine CLAY			BH13 7.0-7.5
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irrelev

Depth while drilling ▼
Depth after drilling ▽

CLIENT:
Snowday Pty Ltd

PROJECT:
BH13

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HOLE No.: BH14
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS	4.0 m bgl ▼	0	0 - 1.7m ASH fill with some natural subangular gravel and sand			BH14 1.0-1.5 SQA3
		1				
		2	FILL: medium to coarse gravel (clinkder/slag) and cobbles. Subangular to rounded, dry, loose			
		3				
		4				
		5				
		6	6.0 - 7.5m Marine CLAY			BH14 7.0-7.5
		7				
		8	End of Hole 7.5m			

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

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PROJECT: BH14

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HOLE No.: BH15
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
			Grassed			
PT	4.0 m bgl	0	0 - 0.1m TOPSOIL, brown			
		0.5	0.1 - 0.6m ASH fill with fine to coarse natural gravel. dry, loose, some silt			BH15 0.1-0.6
		1.0	0.6 - 0.9m silty, gravelly, sandy fill, dry, loose, orange			BH15 0.6-0.9
		3.5	0.9 - 7.0m ASH with some natural gravel, dry, loose, some silty fill intermittent throughout			BH15 1.0-1.5 BH15 2.0-2.5 BH15 3.0-3.5
		4				BH15 4.0-4.5
		5				Sample BH15 4.5-5.5
		6	4.5 - 7.0m Marine CLAY			
		7	7.0 - 7.3m Dark grey marine CLAY, wet - moist, soft, low plasticity, anaerobic odour 7.3 - 7.5m SAND, fine, wet, loose, white/ orange/grey with marine clay lenses throughout			BH15 7.0-7.3
		8	End of Hole 7.5 m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH15

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HOLE No.: BH16
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
		0	0 - 0.4m Topsoil, brown, silty SAND, dry, loose.			
		1	0.4 - 7.0m ASH fill with some sand and natural gravel			BH16 0.5 - 1.0
	4.0 m bgl ▼	3	Water across Lots 1 and 2 at approximately 4m			BH16 3.0 - 3.5
		7	7.0 - 7.5m Marine CLAY			BH16 7.0 - 7.5
		8	End of Hole 7.5 m			

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH16

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HOLE No.: BH17
LOCATION: Parringa Rd
RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
		0	0 - 0.1m Topsoil, brown, dry, loose			
			0.1 - 0.3m Topsoil, brown, moist, loose			
		0.5				
		1.0	Ash		Concrete Cap - Bentonite fill	BH17 1.0 - 1.5
		1.5				
	4.0 m bgl					
		4.0			Sand	
		4.5	Ash			
		5.0				
		5.5				
		6.0	End of Hole 6.0 m			

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irre

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty ltd

PROJECT: BH17

Waste Solutions Australia Pty Ltd
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DATE: October 2005
JOB No.: A399
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HOLE No.: BH18
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
SS		0	0 - 4.2m Ash fill, dark grey, dry and loose			BH18 0.5 - 1.0
		4				BH18 4.2 - 4.5
			4.2 - 4.5m Marine Clay			
		5	End of Hole 4.5 m No water encountered			
		6				
		7				
		8				

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty ltd

PROJECT: BH18

DATE: October 2005
JOB No.: A399
FIG. No.:

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HOLE No.: BH19
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
		0	0 - 0.1m Road Base 0.1 - 1.0m ASH Fill, loose, dry, dark grey			BH19 0.5 - 1.0
		1	1.0 -1.5m brown sandy CLAY, low plasticity, firm			BH19 1.0 - 1.5
	3.0 m bgl ▼	2 3	1.5 - 4.5m ASH fill, dark grey			BH19 2.5 - 3.0
		4 5 6	4.5 - 7.5m Marine CLAY			BH19 6.0 - 6.5
		7 8	End of Hole 7.5 m			

DRILLER - Geoprobe
COMMENCED - 11/10/05
COMPLETED - 11/10/05
LOGGED BY 73(2)Irrele

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday Pty Ltd

PROJECT: BH19

DATE: October 2005 | JOB No.: A399 | FIG. No.:

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HOLE No.: BH20
LOCATION: Parringa Rd

RL:

Drilling method	Water	Scale (m)	Geologic Log	Geophysical Log	Borehole construction details	Sample
		0	0 - 0.5m Topsoil dry, brown, loose SILT		Concrete Cap Bentonite fill	BH20 0.2 - 0.5 BH20 1.0 - 1.5
		1				
		2	0.5 - 6.0m Dark brown SILT with some sand and natural gravel, dry, loose			
		3			Sand	
	4.0m bgl 10/10/05	4				
		5				
		6	End of Hole 6.0 m			
		7				
		8				

DRILLER - Geoprobe
COMMENCED - 10/10/05
COMPLETED - 10/10/05
LOGGED BY - 73(2)Irrel

Depth while drilling ▼
Depth after drilling ▽

CLIENT: Snowday

PROJECT: BH20

DATE: October 2005

JOB No.: A399

FIG. No.:

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APPENDIX H
LABORATORY CERTIFICATES

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LabMark

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

ilac-MRA NATA No. 13542.

Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

AQIS
AUSTRALIAN QUARANTINE AND INSPECTION SERVICE
SYDNEY License No. N0356.

Quarantine Approved premises criteria 5.1 for quarantine containment level 1 (QC1) facilities. Class five criteria cover premises utilised for research, analysis,and/or testing of biological material, soil, animal, plant and human products.

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E023976	Cover Page 1 of 4 plus Sample Results
Client Name:	Waste Solutions Australia	
Client Reference:	Paringa Road	
Contact Name:	73(2)Irrelevant	
Chain of Custody No:	S4814-4821	Date Received: 13/10/2005
Sample Matrix:	SOIL	Date Reported: 20/10/2005

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

DQO:	Data Quality Objective	s:	matrix spike recovery	p:	pending
DQI:	Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample
EQL:	Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material
- - :	not applicable	r:	RPD relative % difference	mb:	method blank

73(2)Irrelevant

73(2)Irrelevant

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NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each method and sample matrix type reported, unless noted below.

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

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4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Petroleum Hydrocarbons (TPH)	57	6	11%	0	3	5%
9	Polyaromatic Hydrocarbons (PAH)	9	1	11%	0	1	11%
11	Organochlorine Pesticides (OC)	10	1	10%	0	1	10%
13	Polychlorinated Biphenyls (PCB)	10	1	10%	0	1	10%
16	Acid extractable mercury	60	6	10%	0	3	5%
24	Acid extractable metals	60	6	10%	3	3	5%
33	Acid extractable metals	12	2	17%	0	1	8%
35	Moisture	60	--	--	--	--	--

Matrix: **SOIL-LEACHATE**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
15	TCLP Preparation	10	0	0%	0	0	0%
21	TCLP metals (M7)	10	1	10%	0	1	10%
23	TCLP mercury	10	1	10%	0	1	10%

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

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5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, unless indicated below.
B. METALS (soil), Sample 41210d resulted rpd range 0%-128%, triplicate results issued.
C. METALS (soil), Sample 41226d resulted rpd range 11%-37%, triplicate results issued.
D. METALS (soil), Sample 41276d resulted rpd range 0%-136%, triplicate results issued.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

Page: 1 of 38
plus cover page
Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification			41209	41210	41214	41216	41217	41218	41219	41220	41222	41223
Sample Identification			BH5	BH5	BH5	BH9	BH10	BH10	BH10	BH11	BH11	BH11
Depth (m)			0.2-0.5	1.5-2.0	5.5-6.0	1.0-1.5	1.0-1.5	5.5-6.0	6.5-7.0	0.5-1.0	3.0-3.5	6.0-6.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Laboratory Identification			41224	41226	41228	41229	41230	41231	41232	41233	41234	41235
Sample Identification			BH12	BH12	BH12	BH12	BH13	BH13	BH13	BH14	BH14	BH15
Depth (m)			0.5-1.0	2.5-3.0	4.5-5.0	7.0-7.5	0.5-1.0	6.0-6.5	7.0-7.5	1.0-1.5	7.0-7.5	0.1-0.6
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	130
	C29 - C36 Fraction	100	<100	<100	<100	<100	<100	160	<100	<100	<100	<100
	Sum of TPH C10 - C36	--	--	--	--	--	--	160	--	--	--	130

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

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Laboratory Identification			41238	41240	41242	41243	41244	41245	41246	41247	41248	41249
Sample Identification			BH15	BH15	BH15	BH16	BH16	BH16	BH17	BH20	BH20	BH6
Depth (m)			2.0-2.5	4.0-4.5	7.0-7.3	0.5-1.0	3.0-3.5	7.0-7.5	1.0-1.5	0.2-0.5	1.0-1.5	1.0-1.5
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Client Name: Waste Solutions Australia
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Laboratory Identification			41250	41251	41252	41254	41255	41257	41258	41259	41261	41262
Sample Identification			BH6	BH7	BH7	BH7	BH8	BH8	BH1	BH1	BH1	BH2
Depth (m)			5.0-5.5	0.2-0.4	1.2-1.5	4.0-4.5	0.5-1.0	6.5-7.0	0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Laboratory Identification			41263	41265	41266	41268	41269	41270	41272	41273	41274	41275
Sample Identification			BH2	BH2	BH3	BH3	BH3	BH4	BH4	BH4	BH18	BH18
Depth (m)			1.0-1.5	6.5-7.0	0.5-1.0	2.5-3.0	5.5-6.0	0.5-1.0	2.5-3.0	4.0-4.5	0.5-1.0	4.2-4.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Laboratory Identification			41276	41277	41278	41279	41281	41282	41283	41210d	41210r	41226d
Sample Identification			BH19	BH19	BH19	BH19	SQA2	SQA3	SQA4	QC	QC	QC
Depth (m)			0.5-1.0	1.0-1.5	2.5-3.0	6.0-6.5	--	--	--	--	--	--
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	--	--	--
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	--	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	--	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	--	<50
	C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	--	<100
	C29 - C36 Fraction	100	<100	<100	<100	<100	210	<100	<100	<100	--	<100
	Sum of TPH C10 - C36	--	--	--	--	--	210	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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This report supercedes reports issued on: N/A

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Laboratory Identification			41226r	41234d	41234r	41257d	41257r	41269d	41269r	41276d	41276r	41214s
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			--	14/10/05	--	14/10/05	--	14/10/05	--	14/10/05	--	14/10/05
Laboratory Analysis Date			--	18/10/05	--	18/10/05	--	18/10/05	--	18/10/05	--	18/10/05
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	--	<50	--	<50	--	<50	--	<50	--	--
	C15 - C28 Fraction	100	--	<100	--	<100	--	<100	--	<100	--	91%
	C29 - C36 Fraction	100	--	<100	--	<100	--	<100	--	<100	--	--
	Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Laboratory Identification			41238s	41261s	lcs	mb						
Sample Identification			QC	QC	QC	QC						
Depth (m)			--	--	--	--						
Sampling Date recorded on COC			--	--	--	--						
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05						
Laboratory Analysis Date			18/10/05	18/10/05	15/10/05	15/10/05						
Method	**Petroleum Hydrocarbons (TPH)**	**EQL**										
E006.2	C10 - C14 Fraction	50	--	--	--	<50						
	C15 - C28 Fraction	100	70%	88%	94%	<100						
	C29 - C36 Fraction	100	--	--	--	<100						
	Sum of TPH C10 - C36	--	--	--	--	--						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

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Client Name: Waste Solutions Australia plus cover page **Certificate**

Contact Name: 73(2)Irrelevant **Date:** 20/10/05 of Analysis

Client Reference Paringa Road A399 This report supercedes reports issued on: N/A

Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41276	41210d
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH19	QC
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	--
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	--
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	19/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Polyaromatic Hydrocarbons (PAH)**	**EQL**										
E007.2	Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluoranthene	0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Pyrene	0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benz(a)anthracene	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chrysene	0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Sum of reported PAHs	--	--	2.7	--	--	--	--	--	--	--	--
	2-FBP (Surr @ 5mg/kg)	--	*100%*	*99%*	*99%*	*96%*	*88%*	*112%*	*88%*	*97%*	*89%*	*95%*
	TP-d14 (Surr @ 5mg/kg)	--	*106%*	*106%*	*111%*	*106%*	*100%*	*107%*	*99%*	*114%*	*106%*	*108%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

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Laboratory Identification			41210r	41238s	lcs	mb						
Sample Identification			QC	QC	QC	QC						
Depth (m)			--	--	--	--						
Sampling Date recorded on COC			--	--	--	--						
Laboratory Extraction (Preparation) Date			--	14/10/05	14/10/05	14/10/05						
Laboratory Analysis Date			--	18/10/05	14/10/05	14/10/05						
Method	**Polyaromatic Hydrocarbons (PAH)**	**EQL**										
E007.2	Naphthalene	0.5	--	111%	100%	<0.5						
	Acenaphthylene	0.5	--	108%	79%	<0.5						
	Acenaphthene	0.5	--	113%	103%	<0.5						
	Fluorene	0.5	--	109%	101%	<0.5						
	Phenanthrene	0.5	--	111%	117%	<0.5						
	Anthracene	0.5	--	102%	117%	<0.5						
	Fluoranthene	0.5	--	110%	115%	<0.5						
	Pyrene	0.5	--	108%	120%	<0.5						
	Benz(a)anthracene	0.5	--	106%	98%	<0.5						
	Chrysene	0.5	--	111%	100%	<0.5						
	Benzo(b)&(k)fluoranthene	1	--	109%	103%	<1						
	Benzo(a) pyrene	0.5	--	102%	98%	<0.5						
	Indeno(1,2,3-c,d)pyrene	0.5	--	77%	101%	<0.5						
	Dibenz(a,h)anthracene	0.5	--	91%	104%	<0.5						
	Benzo(g,h,i)perylene	0.5	--	80%	104%	<0.5						
	Sum of reported PAHs	--	--	--	--	--						
	2-FBP (Surr @ 5mg/kg)	--	*5%*	*87%*	*95%*	*106%*						
	TP-d14 (Surr @ 5mg/kg)	--	*2%*	*104%*	*113%*	*98%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

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Client Name: Waste Solutions Australia plus cover page Certificate

Contact Name: 73(2)Irrelevant **Date:** 20/10/05 of Analysis

Client Reference Paringa Road A399 This report supercedes reports issued on: N/A

Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41274	41276
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH18	BH19
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Organochlorine Pesticides (OC)**	**EQL**										
E013.2	a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	HCB	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	DBC (Surr @ 0.2mg/kg)	--	*120%*	*102%*	*106%*	*96%*	*105%*	*112%*	*113%*	*106%*	*108%*	*108%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

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Laboratory Identification			41210d	41210r	41238s	lcs	mb					
Sample Identification			QC	QC	QC	QC	QC					
Depth (m)			--	--	--	--	--					
Sampling Date recorded on COC			--	--	--	--	--					
Laboratory Extraction (Preparation) Date			14/10/05	--	14/10/05	14/10/05	14/10/05					
Laboratory Analysis Date			18/10/05	--	17/10/05	15/10/05	15/10/05					
Method	**Organochlorine Pesticides (OC)**	**EQL**										
E013.2	a-BHC	0.05	<0.05	--	110%	104%	<0.05					
	HCB	0.05	<0.05	--	97%	127%	<0.05					
	b-BHC	0.05	<0.05	--	96%	116%	<0.05					
	g-BHC (Lindane)	0.05	<0.05	--	113%	117%	<0.05					
	d-BHC	0.05	<0.05	--	112%	112%	<0.05					
	Heptachlor	0.05	<0.05	--	117%	115%	<0.05					
	Aldrin	0.05	<0.05	--	114%	105%	<0.05					
	Heptachlor epoxide	0.05	<0.05	--	116%	105%	<0.05					
	trans-chlordane	0.05	<0.05	--	117%	106%	<0.05					
	Endosulfan I	0.05	<0.05	--	119%	107%	<0.05					
	cis-chlordane	0.05	<0.05	--	118%	107%	<0.05					
	Dieldrin	0.05	<0.05	--	106%	104%	<0.05					
	4,4-DDE	0.05	<0.05	--	126%	107%	<0.05					
	Endrin	0.05	<0.05	--	113%	95%	<0.05					
	Endosulfan II	0.05	<0.05	--	122%	106%	<0.05					
	4,4-DDD	0.05	<0.05	--	126%	99%	<0.05					
	Endosulfan sulphate	0.05	<0.05	--	108%	107%	<0.05					
	4,4-DDT	0.2	<0.2	--	104%	112%	<0.2					
	Methoxychlor	0.2	<0.2	--	106%	109%	<0.2					
	DBC (Surr @ 0.2mg/kg)	--	*110%*	*9%*	*101%*	*92%*	*99%*					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

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Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate of Analysis

Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41274	41276
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH18	BH19
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Polychlorinated Biphenyls (PCB)**	**EQL**										
E013.2	Arochlor 1016	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Arochlor 1232	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Arochlor 1242	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Arochlor 1248	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Arochlor 1254	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Arochlor 1260	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Sum of reported PCBs	--	--	--	--	--	--	--	--	--	--	--
	DBC (Surr @ 0.2mg/kg)	--	*120%*	*102%*	*106%*	*96%*	*105%*	*112%*	*113%*	*106%*	*108%*	*108%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

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RTI Act 2009

Laboratory Identification			41210d	41210r	41238s	lcs	mb					
Sample Identification			QC	QC	QC	QC	QC					
Depth (m)			--	--	--	--	--					
Sampling Date recorded on COC			--	--	--	--	--					
Laboratory Extraction (Preparation) Date			14/10/05	--	14/10/05	14/10/05	14/10/05					
Laboratory Analysis Date			18/10/05	--	17/10/05	15/10/05	15/10/05					
Method	**Polychlorinated Biphenyls (PCB)**	**EQL**										
E013.2	Arochlor 1016	0.5	<0.5	--	--	--	<0.5					
	Arochlor 1232	0.5	<0.5	--	--	--	<0.5					
	Arochlor 1242	0.5	<0.5	--	--	--	<0.5					
	Arochlor 1248	0.5	<0.5	--	--	98%	<0.5					
	Arochlor 1254	0.5	<0.5	--	110%	--	<0.5					
	Arochlor 1260	0.5	<0.5	--	--	--	<0.5					
	Sum of reported PCBs	--	--	--	--	--	--					
	DBC (Surr @ 0.2mg/kg)	--	*110%*	*9%*	*101%*	*84%*	*99%*					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

Page: 15 of 38
plus cover page
Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate of Analysis

Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41274	41276
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH18	BH19
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			--	--	--	--	--	--	--	--	--	--
Method	**TCLP Preparation**	**EQL**										
E019.2	TCLP Fluid No.	--	1	1	1	1	1	1	1	1	1	1
	Initial pH (pH units)	--	8.2	7.2	8.4	7.4	7.1	7.4	6.1	6.3	6.4	5.7
	pH after HCl (pH units)	--	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8
	Final pH (pH units)	--	4.9	5.0	5.1	5.0	4.9	4.9	4.9	4.9	4.9	4.9

Results expressed in pH units unless otherwise specified

Comments:

E019.2: Soil leached for 18 hours with fluid as specified above . Refer to relevant water method for results.

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Laboratory Identification			41209	41210	41214	41216	41217	41218	41219	41220	41222	41223
Sample Identification			BH5	BH5	BH5	BH9	BH10	BH10	BH10	BH11	BH11	BH11
Depth (m)			0.2-0.5	1.5-2.0	5.5-6.0	1.0-1.5	1.0-1.5	5.5-6.0	6.5-7.0	0.5-1.0	3.0-3.5	6.0-6.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	0.06	<0.05	0.21	0.09	<0.05	0.06	0.09	0.14	0.07	0.09

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification			41224	41226	41228	41229	41230	41231	41232	41233	41234	41235
Sample Identification			BH12	BH12	BH12	BH12	BH13	BH13	BH13	BH14	BH14	BH15
Depth (m)			0.5-1.0	2.5-3.0	4.5-5.0	7.0-7.5	0.5-1.0	6.0-6.5	7.0-7.5	1.0-1.5	7.0-7.5	0.1-0.6
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	0.09	0.07	0.07	0.05	<0.05	0.05	0.08	0.09	0.12	0.11

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

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Laboratory Identification			41238	41240	41242	41243	41244	41245	41246	41247	41248	41249
Sample Identification			BH15	BH15	BH15	BH16	BH16	BH16	BH17	BH20	BH20	BH6
Depth (m)			2.0-2.5	4.0-4.5	7.0-7.3	0.5-1.0	3.0-3.5	7.0-7.5	1.0-1.5	0.2-0.5	1.0-1.5	1.0-1.5
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	<0.05	0.06	0.15	0.08	0.34	<0.05	0.27	0.11	0.13	0.09

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification			41250	41251	41252	41254	41255	41257	41258	41259	41261	41262
Sample Identification			BH6	BH7	BH7	BH7	BH8	BH8	BH1	BH1	BH1	BH2
Depth (m)			5.0-5.5	0.2-0.4	1.2-1.5	4.0-4.5	0.5-1.0	6.5-7.0	0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	0.16	0.05	<0.05	0.08	<0.05	0.07	0.05	<0.05	0.14	0.06

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

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Laboratory Identification			41263	41265	41266	41268	41269	41270	41272	41273	41274	41275
Sample Identification			BH2	BH2	BH3	BH3	BH3	BH4	BH4	BH4	BH18	BH18
Depth (m)			1.0-1.5	6.5-7.0	0.5-1.0	2.5-3.0	5.5-6.0	0.5-1.0	2.5-3.0	4.0-4.5	0.5-1.0	4.2-4.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	0.05	<0.05	0.08	0.05	<0.05	0.12	0.11	0.22	0.06	0.08

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification			41276	41277	41278	41279	41281	41282	41283	41345	41346	41347
Sample Identification			BH19	BH19	BH19	BH19	SQA2	SQA3	SQA4	SP01	SP02	SP03
Depth (m)			0.5-1.0	1.0-1.5	2.5-3.0	6.0-6.5	--	--	--	--	--	--
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	19/10/05	19/10/05	19/10/05	19/10/05	19/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	<0.05	0.09	0.05	0.08	0.08	0.13	0.07	0.1	2.1	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

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Laboratory Report No: E023976 **Page:** 19 of 38 Final

Client Name: Waste Solutions Australia plus cover page Certificate of Analysis

Contact Name: 73(2)Irrelevant **Date:** 20/10/05

Client Reference Paringa Road A399 This report supercedes reports issued on: N/A

Laboratory Identification			41210d	41210r	41226d	41226r	41234d	41234r	41257d	41257r	41269d	41269r
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			17/10/05	--	17/10/05	--	17/10/05	--	18/10/05	--	18/10/05	--
Laboratory Analysis Date			17/10/05	--	17/10/05	--	17/10/05	--	18/10/05	--	18/10/05	--
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	<0.05	--	0.06	15%	0.10	18%	0.06	15%	<0.05	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification			41276d	41276r	41214s	41238s	41261s	crm	crm	lcs	lcs	mb
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			18/10/05	--	17/10/05	17/10/05	18/10/05	17/10/05	18/10/05	17/10/05	18/10/05	17/10/05
Laboratory Analysis Date			18/10/05	--	17/10/05	17/10/05	18/10/05	17/10/05	18/10/05	17/10/05	18/10/05	17/10/05
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	<0.05	--	96%	95%	110%	97%	100%	100%	93%	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

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Published on DES Disclosure Log RTI Act 2009

Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate
of Analysis

Laboratory Identification			mb									
Sample Identification			QC									
Depth (m)			--									
Sampling Date recorded on COC			--									
Laboratory Extraction (Preparation) Date			18/10/05									
Laboratory Analysis Date			18/10/05									
Method	**Acid extractable mercury**	**EQL**										
E026.2	Mercury	0.05	<0.05									

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

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Published on DES Disclosure Log
RTI Act 2009

Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

Page: 21 of 38
plus cover page
Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate of Analysis

Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41274	41276
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH18	BH19
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**TCLP metals (M7)**	**EQL**										
E022.1	Arsenic	10	10	10	<10	10	<10	<10	<10	10	<10	<10
	Cadmium	1	<1	26	2	7	<1	<1	<1	3	<1	<1
	Chromium	50	<50	50	50	50	50	50	<50	50	50	50
	Copper	50	<50	7600	<50	2200	60	<50	<50	90	160	<50
	Nickel	50	<50	100	50	70	60	<50	<50	<50	<50	<50
	Lead	10	10	22200	80	5000	<10	<10	<10	120	20	<10
	Zinc	50	270	4800	700	2100	210	220	250	660	340	260

Results expressed in ug/l unless otherwise specified

Comments:

E022.1: TCLP leachate (25ml) digested with nitric/hydrochloric acid. Analysis by ICP-MS. Results are expressed as in the leachate.

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Laboratory Identification			41210d	41210r	41238s	lcs	mb					
Sample Identification			QC	QC	QC	QC	QC					
Depth (m)			--	--	--	--	--					
Sampling Date recorded on COC			--	--	--	--	--					
Laboratory Extraction (Preparation) Date			17/10/05	--	17/10/05	17/10/05	17/10/05					
Laboratory Analysis Date			17/10/05	--	17/10/05	17/10/05	17/10/05					
Method	**TCLP metals (M7)**	**EQL**										
E022.1	Arsenic	10	10	0%	101%	100%	<10					
	Cadmium	1	<1	--	99%	105%	<1					
	Chromium	50	50	>0%	83%	91%	<50					
	Copper	50	<50	--	98%	93%	<50					
	Nickel	50	<50	--	89%	105%	<50					
	Lead	10	10	0%	101%	101%	<10					
	Zinc	50	280	4%	97%	102%	<50					

Results expressed in ug/l unless otherwise specified

Comments:

E022.1: TCLP leachate (25ml) digested with nitric/hydrochloric acid. Analysis by ICP-MS. Results are expressed as in the leachate.

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Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41274	41276
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH18	BH19
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	0.5-1.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**TCLP mercury**	**EQL**										
E026.1	Mercury	1	<1	*<5	<1	<1	<1	<1	<1	<1	<1	<1

Results expressed in ug/l unless otherwise specified

Comments: *EQL increased due to matrix interference.

E026.1: Sample leached with acetic acid buffer. 25ml of leachate digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS. Results are expressed as per the leachate.

Laboratory Identification			41210d	41210r	41238s	lcs	mb					
Sample Identification			QC	QC	QC	QC	QC					
Depth (m)			--	--	--	--	--					
Sampling Date recorded on COC			--	--	--	--	--					
Laboratory Extraction (Preparation) Date			17/10/05	--	17/10/05	17/10/05	17/10/05					
Laboratory Analysis Date			17/10/05	--	17/10/05	17/10/05	17/10/05					
Method	**TCLP mercury**	**EQL**										
E026.1	Mercury	1	<1	--	76%	76%	<1					

Results expressed in ug/l unless otherwise specified

Comments: *EQL increased due to matrix interference.

E026.1: Sample leached with acetic acid buffer. 25ml of leachate digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS. Results are expressed as per the leachate.

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Laboratory Identification			41209	41210	41214	41216	41217	41218	41219	41220	41222	41223
Sample Identification			BH5	BH5	BH5	BH9	BH10	BH10	BH10	BH11	BH11	BH11
Depth (m)			0.2-0.5	1.5-2.0	5.5-6.0	1.0-1.5	1.0-1.5	5.5-6.0	6.5-7.0	0.5-1.0	3.0-3.5	6.0-6.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	--	3100	--	--	--	--	--	3900	--	--
	Antimony	1	--	<1	--	--	--	--	--	4	--	--
	Arsenic	1	5	3	8	5	2	4	6	8	3	5
	Barium	5	--	260	--	--	--	--	--	220	--	--
	Beryllium	1	--	<1	--	--	--	--	--	<1	--	--
	Boron	5	--	<5	--	--	--	--	--	<5	--	--
	Cadmium	0.1	<0.1	0.2	<0.1	0.2	0.2	0.2	0.1	1.4	0.5	0.1
	Chromium	1	9	12	25	10	4	29	17	13	20	23
	Cobalt	1	--	8	--	--	--	--	--	9	--	--
	Copper	2	19	33	25	110	37	80	36	1830	200	44
	Lead	2	35	44	21	230	26	84	110	2680	570	50
	Manganese	5	--	150	--	--	--	--	--	120	--	--
	Molybdenum	1	--	<1	--	--	--	--	--	2	--	--
	Nickel	1	3	7	19	7	13	11	15	12	16	17
	Selenium	2	--	<2	--	--	--	--	--	<2	--	--
	Silver	0.1	--	0.4	--	--	--	--	--	1.1	--	--
	Strontium	5	--	<5	--	--	--	--	--	100	--	--
	Thallium	1	--	<1	--	--	--	--	--	<1	--	--
	Tin	1	--	<1	--	--	--	--	--	19	--	--
	Vanadium	5	--	32	--	--	--	--	--	53	--	--
	Zinc	5	37	29	76	64	24	47	49	320	87	56

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41224	41226	41228	41229	41230	41231	41232	41233	41234	41235
Sample Identification			BH12	BH12	BH12	BH12	BH13	BH13	BH13	BH14	BH14	BH15
Depth (m)			0.5-1.0	2.5-3.0	4.5-5.0	7.0-7.5	0.5-1.0	6.0-6.5	7.0-7.5	1.0-1.5	7.0-7.5	0.1-0.6
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	4400	--	--	--	--	--	--	--	--	3800
	Antimony	1	1	--	--	--	--	--	--	--	--	2
	Arsenic	1	9	4	4	5	2	6	5	5	6	7
	Barium	5	240	--	--	--	--	--	--	--	--	300
	Beryllium	1	<1	--	--	--	--	--	--	--	--	<1
	Boron	5	<5	--	--	--	--	--	--	--	--	<5
	Cadmium	0.1	0.4	0.4	0.1	<0.1	0.1	0.3	0.1	0.3	<0.1	0.5
	Chromium	1	10	7	20	21	12	23	21	8	30	8
	Cobalt	1	9	--	--	--	--	--	--	--	--	13
	Copper	2	140	450	56	18	29	420	110	130	35	380
	Lead	2	330	420	86	15	45	390	120	240	36	450
	Manganese	5	180	--	--	--	--	--	--	--	--	110
	Molybdenum	1	2	--	--	--	--	--	--	--	--	3
	Nickel	1	12	10	16	16	9	14	17	15	23	11
	Selenium	2	<2	--	--	--	--	--	--	--	--	<2
	Silver	0.1	0.8	--	--	--	--	--	--	--	--	0.1
	Strontium	5	110	--	--	--	--	--	--	--	--	85
	Thallium	1	<1	--	--	--	--	--	--	--	--	<1
	Tin	1	5	--	--	--	--	--	--	--	--	9
	Vanadium	5	50	--	--	--	--	--	--	--	--	51
	Zinc	5	160	77	53	38	56	230	80	73	70	160

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41238	41240	41242	41243	41244	41245	41246	41247	41248	41249
Sample Identification			BH15	BH15	BH15	BH16	BH16	BH16	BH17	BH20	BH20	BH6
Depth (m)			2.0-2.5	4.0-4.5	7.0-7.3	0.5-1.0	3.0-3.5	7.0-7.5	1.0-1.5	0.2-0.5	1.0-1.5	1.0-1.5
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	3200	--	--	--	--	--	--	--	--	--
	Antimony	1	<1	--	--	--	--	--	--	--	--	--
	Arsenic	1	<1	2	7	4	5	3	5	3	3	7
	Barium	5	170	--	--	--	--	--	--	--	--	--
	Beryllium	1	1	--	--	--	--	--	--	--	--	--
	Boron	5	<5	--	--	--	--	--	--	--	--	--
	Cadmium	0.1	<0.1	<0.1	<0.1	0.6	0.1	<0.1	<0.1	0.1	0.1	0.5
	Chromium	1	5	7	35	12	9	17	4	7	6	10
	Cobalt	1	39	--	--	--	--	--	--	--	--	--
	Copper	2	37	16	25	420	32	8	71	32	32	620
	Lead	2	2	4	20	630	8	4	76	64	61	330
	Manganese	5	60	--	--	--	--	--	--	--	--	--
	Molybdenum	1	1	--	--	--	--	--	--	--	--	--
	Nickel	1	32	14	23	12	15	13	11	8	10	9
	Selenium	2	<2	--	--	--	--	--	--	--	--	--
	Silver	0.1	0.1	--	--	--	--	--	--	--	--	--
	Strontium	5	27	--	--	--	--	--	--	--	--	--
	Thallium	1	<1	--	--	--	--	--	--	--	--	--
	Tin	1	<1	--	--	--	--	--	--	--	--	--
	Vanadium	5	58	--	--	--	--	--	--	--	--	--
	Zinc	5	9	11	69	100	24	26	16	75	64	87

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Report No: E023976 **Page:** 27 of 38 Final

Client Name: Waste Solutions Australia plus cover page Certificate of Analysis

Contact Name: 73(2)Irrelevant **Date:** 20/10/05

Client Reference Paringa Road A399 This report supercedes reports issued on: N/A

Laboratory Identification			41250	41251	41252	41254	41255	41257	41258	41259	41261	41262
Sample Identification			BH6	BH7	BH7	BH7	BH8	BH8	BH1	BH1	BH1	BH2
Depth (m)			5.0-5.5	0.2-0.4	1.2-1.5	4.0-4.5	0.5-1.0	6.5-7.0	0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	--	--	--	--	3200	--	--	3700	--	--
	Antimony	1	--	--	--	--	<1	--	--	<1	--	--
	Arsenic	1	9	4	2	4	2	4	8	2	7	4
	Barium	5	--	--	--	--	280	--	--	350	--	--
	Beryllium	1	--	--	--	--	<1	--	--	<1	--	--
	Boron	5	--	--	--	--	<5	--	--	<5	--	--
	Cadmium	0.1	<0.1	0.1	0.2	<0.1	0.2	0.1	0.2	0.1	<0.1	0.1
	Chromium	1	27	11	7	17	4	17	7	7	24	17
	Cobalt	1	--	--	--	--	8	--	--	8	--	--
	Copper	2	40	13	22	18	36	51	20	25	24	27
	Lead	2	25	17	8	11	17	33	22	14	16	23
	Manganese	5	--	--	--	--	230	--	--	140	--	--
	Molybdenum	1	--	--	--	--	1	--	--	2	--	--
	Nickel	1	20	6	6	7	7	15	7	8	17	7
	Selenium	2	--	--	--	--	<2	--	--	<2	--	--
	Silver	0.1	--	--	--	--	0.5	--	--	0.5	--	--
	Strontium	5	--	--	--	--	100	--	--	100	--	--
	Thallium	1	--	--	--	--	<1	--	--	<1	--	--
	Tin	1	--	--	--	--	<1	--	--	<1	--	--
	Vanadium	5	--	--	--	--	29	--	--	33	--	--
	Zinc	5	61	51	21	36	24	40	54	20	56	64

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41263	41265	41266	41268	41269	41270	41272	41273	41274	41275
Sample Identification			BH2	BH2	BH3	BH3	BH3	BH4	BH4	BH4	BH18	BH18
Depth (m)			1.0-1.5	6.5-7.0	0.5-1.0	2.5-3.0	5.5-6.0	0.5-1.0	2.5-3.0	4.0-4.5	0.5-1.0	4.2-4.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	--	--	--	--	--	4900	3900	6500	4400	--
	Antimony	1	--	--	--	--	--	<1	<1	<1	<1	--
	Arsenic	1	2	2	3	3	3	9	5	7	3	3
	Barium	5	--	--	--	--	--	130	320	94	330	--
	Beryllium	1	--	--	--	--	--	<1	<1	1	<1	--
	Boron	5	--	--	--	--	--	<5	<5	8	<5	--
	Cadmium	0.1	0.2	<0.1	2.3	0.1	<0.1	0.3	0.6	0.2	0.2	0.3
	Chromium	1	7	4	13	31	7	12	29	18	4	14
	Cobalt	1	--	--	--	--	--	8	11	16	12	--
	Copper	2	24	15	37	28	27	90	57	32	230	25
	Lead	2	9	5	40	350	7	120	86	38	56	15
	Manganese	5	--	--	--	--	--	120	190	180	95	--
	Molybdenum	1	--	--	--	--	--	2	4	1	2	--
	Nickel	1	8	5	11	11	8	11	15	17	10	12
	Selenium	2	--	--	--	--	--	<2	<2	<2	<2	--
	Silver	0.1	--	--	--	--	--	0.6	0.2	0.2	0.5	--
	Strontium	5	--	--	--	--	--	34	80	40	82	--
	Thallium	1	--	--	--	--	--	<1	<1	<1	<1	--
	Tin	1	--	--	--	--	--	2	8	2	1	--
	Vanadium	5	--	--	--	--	--	31	35	40	39	--
	Zinc	5	22	22	52	43	20	75	570	140	36	36

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41276	41277	41278	41279	41281	41282	41283	41345	41346	41347
Sample Identification			BH19	BH19	BH19	BH19	SQA2	SQA3	SQA4	SP01	SP02	SP03
Depth (m)			0.5-1.0	1.0-1.5	2.5-3.0	6.0-6.5	--	--	--	--	--	--
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	2100	--	--	--	--	--	--	--	--	--
	Antimony	1	<1	--	--	--	--	--	--	--	--	--
	Arsenic	1	3	4	2	4	5	6	5	3	2	<1
	Barium	5	190	--	--	--	--	--	--	--	--	--
	Beryllium	1	<1	--	--	--	--	--	--	--	--	--
	Boron	5	<5	--	--	--	--	--	--	--	--	--
	Cadmium	0.1	0.2	0.2	0.1	0.1	0.2	2.2	0.2	0.4	0.2	<0.1
	Chromium	1	4	6	45	21	19	6	8	6	6	4
	Cobalt	1	47	--	--	--	--	--	--	--	--	--
	Copper	2	33	31	35	43	180	140	100	35	22	<2
	Lead	2	24	23	19	30	230	300	230	170	140	2
	Manganese	5	91	--	--	--	--	--	--	--	--	--
	Molybdenum	1	1	--	--	--	--	--	--	--	--	--
	Nickel	1	7	16	14	19	16	10	6	3	3	<1
	Selenium	2	<2	--	--	--	--	--	--	--	--	--
	Silver	0.1	0.7	--	--	--	--	--	--	--	--	--
	Strontium	5	36	--	--	--	--	--	--	--	--	--
	Thallium	1	<1	--	--	--	--	--	--	--	--	--
	Tin	1	<1	--	--	--	--	--	--	--	--	--
	Vanadium	5	22	--	--	--	--	--	--	--	--	--
	Zinc	5	24	95	57	56	120	69	64	170	160	<5

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41210d	41210r	41226d	41226r	41234d	41234r	41257d	41257r	41269d	41269r
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			17/10/05	--	17/10/05	--	17/10/05	--	18/10/05	--	18/10/05	--
Laboratory Analysis Date			17/10/05	--	18/10/05	--	18/10/05	--	18/10/05	--	18/10/05	--
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	4000	25%	--	--	--	--	--	--	--	--
	Antimony	1	<1	--	--	--	--	--	--	--	--	--
	Arsenic	1	2	40%	3	29%	5	18%	3	29%	2	40%
	Barium	5	150	54%	--	--	--	--	--	--	--	--
	Beryllium	1	<1	--	--	--	--	--	--	--	--	--
	Boron	5	<5	--	--	--	--	--	--	--	--	--
	Cadmium	0.1	0.2	0.0%	0.3	29%	<0.1	--	<0.1	>0.0%	<0.1	--
	Chromium	1	7	53%	9	25%	23	26%	14	19%	6	15%
	Cobalt	1	7	13%	--	--	--	--	--	--	--	--
	Copper	2	28	16%	310	37%	32	9%	39	27%	26	4%
	Lead	2	43	2%	470	11%	32	12%	25	28%	6	15%
	Manganese	5	80	61%	--	--	--	--	--	--	--	--
	Molybdenum	1	2	>67%	--	--	--	--	--	--	--	--
	Nickel	1	5	33%	9	11%	19	19%	13	14%	8	0%
	Selenium	2	<2	--	--	--	--	--	--	--	--	--
	Silver	0.1	0.3	29%	--	--	--	--	--	--	--	--
	Strontium	5	<5	--	--	--	--	--	--	--	--	--
	Thallium	1	<1	--	--	--	--	--	--	--	--	--
	Tin	1	<1	--	--	--	--	--	--	--	--	--
	Vanadium	5	7	128%	--	--	--	--	--	--	--	--
	Zinc	5	23	23%	61	23%	60	15%	37	8%	18	11%

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

R

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

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plus cover page
Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate of Analysis

Laboratory Identification			41276d	41276r	41210t	41226t	41276t	41214s	41238s	41261s	crm	crm
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			18/10/05	--	18/10/05	18/10/05	19/10/05	17/10/05	17/10/05	18/10/05	17/10/05	18/10/05
Laboratory Analysis Date			18/10/05	--	18/10/05	18/10/05	19/10/05	18/10/05	18/10/05	18/10/05	17/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	2100	0%	--	--	--	--	#	--	--	--
	Antimony	1	<1	--	--	--	--	--	116%	--	--	118%
	Arsenic	1	4	29%	3	3	4	88%	84%	82%	98%	106%
	Barium	5	220	15%	--	--	--	--	#	--	114%	90%
	Beryllium	1	<1	--	--	--	--	--	102%	--	106%	109%
	Boron	5	<5	--	--	--	--	--	102%	--	89%	89%
	Cadmium	0.1	0.2	0.0%	0.1	0.4	0.2	104%	104%	106%	99%	106%
	Chromium	1	4	0%	10	11	5	130%	111%	74%	100%	91%
	Cobalt	1	9	136%	8	9	10	--	93%	--	101%	90%
	Copper	2	34	3%	32	240	36	114%	94%	93%	102%	88%
	Lead	2	28	15%	43	330	25	103%	111%	106%	112%	113%
	Manganese	5	110	19%	--	--	--	--	96%	--	96%	90%
	Molybdenum	1	2	67%	1	3	2	--	97%	--	83%	95%
	Nickel	1	7	0%	7	10	8	124%	86%	85%	112%	88%
	Selenium	2	<2	--	<2	<2	<2	--	80%	--	95%	85%
	Silver	0.1	0.7	0.0%	--	--	--	--	103%	--	115%	104%
	Strontium	5	37	3%	--	--	--	--	91%	--	99%	85%
	Thallium	1	<1	--	--	--	--	--	102%	--	--	--
	Tin	1	<1	--	<1	--	<1	--	--	--	--	81%
	Vanadium	5	24	9%	--	--	--	--	#	--	109%	87%
	Zinc	5	24	0%	27	73	33	#	94%	80%	94%	88%

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			crm	lcs	lcs	lcs	mb	mb	mb			
Sample Identification			QC	QC	QC	QC	QC	QC	QC			
Depth (m)			--	--	--	--	--	--	--			
Sampling Date recorded on COC			--	--	--	--	--	--	--			
Laboratory Extraction (Preparation) Date			19/10/05	17/10/05	18/10/05	19/10/05	17/10/05	18/10/05	19/10/05			
Laboratory Analysis Date			19/10/05	17/10/05	18/10/05	19/10/05	17/10/05	18/10/05	19/10/05			
Method	**Acid extractable metals**	**EQL**										
E022.2	Aluminium	100	--	#	#	--	<100	<100	--			
	Antimony	1	--	105%	107%	--	<1	<1	--			
	Arsenic	1	100%	94%	92%	99%	<1	<1	<1			
	Barium	5	--	111%	100%	--	<5	<5	--			
	Beryllium	1	--	99%	88%	--	<1	<1	--			
	Boron	5	--	91%	81%	--	<5	<5	--			
	Cadmium	0.1	103%	104%	98%	102%	<0.1	<0.1	<0.1			
	Chromium	1	102%	95%	91%	107%	<1	<1	<1			
	Cobalt	1	--	105%	99%	--	<1	<1	--			
	Copper	2	98%	108%	101%	106%	<2	<2	<2			
	Lead	2	93%	113%	103%	104%	<2	<2	<2			
	Manganese	5	--	103%	94%	--	<5	<5	--			
	Molybdenum	1	--	102%	96%	--	<1	<1	--			
	Nickel	1	100%	108%	101%	104%	<1	<1	<1			
	Selenium	2	--	96%	101%	--	<2	<2	--			
	Silver	0.1	--	106%	102%	--	<0.1	<0.1	--			
	Strontium	5	--	103%	85%	--	<5	<5	--			
	Thallium	1	--	110%	102%	--	<1	<1	--			
	Tin	1	--	106%	95%	--	<1	<1	--			
	Vanadium	5	--	100%	114%	--	<5	<5	--			
	Zinc	5	94%	107%	99%	107%	<5	<5	<5			

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

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Laboratory Identification			41210	41220	41224	41235	41238	41255	41259	41270	41272	41273
Sample Identification			BH5	BH11	BH12	BH15	BH15	BH8	BH1	BH4	BH4	BH4
Depth (m)			1.5-2.0	0.5-1.0	0.5-1.0	0.1-0.6	2.0-2.5	0.5-1.0	1.0-1.5	0.5-1.0	2.5-3.0	4.0-4.5
Sampling Date recorded on COC			11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E020.2/E	Iron	10	10700	14900	17000	11400	4500	10600	12100	20400	24000	26100

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E020.2/E030.2: 0.5g digested with nitric/hydrochloric acid . Analysis by AAS and/or ICP-OES.

Laboratory Identification			41274	41276	41210d	41210r	41276d	41276r	41238s	lcs	lcs	mb
Sample Identification			BH18	BH19	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			0.5-1.0	0.5-1.0	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			11/10/05	11/10/05	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			18/10/05	18/10/05	17/10/05	--	18/10/05	--	17/10/05	17/10/05	18/10/05	17/10/05
Laboratory Analysis Date			18/10/05	18/10/05	18/10/05	--	18/10/05	--	18/10/05	18/10/05	18/10/05	18/10/05
Method	**Acid extractable metals**	**EQL**										
E020.2/E	Iron	10	8100	9200	11600	8%	9600	4%	75%	101%	102%	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E020.2/E030.2: 0.5g digested with nitric/hydrochloric acid . Analysis by AAS and/or ICP-OES.

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Laboratory Identification			mb									
Sample Identification			QC									
Depth (m)			--									
Sampling Date recorded on COC			--									
Laboratory Extraction (Preparation) Date			18/10/05									
Laboratory Analysis Date			18/10/05									
Method	**Acid extractable metals**	**EQL**										
E020.2/E	Iron	10	<10									

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E020.2/E030.2: 0.5g digested with nitric/hydrochloric acid . Analysis by AAS and/or ICP-OES.

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Laboratory Report No: E023976
Client Name: Waste Solutions Australia
Contact Name: 73(2)Irrelevant
Client Reference Paringa Road A399

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Date: 20/10/05
This report supercedes reports issued on: N/A

Final
Certificate of Analysis

Laboratory Identification			41209	41210	41214	41216	41217	41218	41219	41220	41222	41223
Sample Identification			BH5	BH5	BH5	BH9	BH10	BH10	BH10	BH11	BH11	BH11
Depth (m)			0.2-0.5	1.5-2.0	5.5-6.0	1.0-1.5	1.0-1.5	5.5-6.0	6.5-7.0	0.5-1.0	3.0-3.5	6.0-6.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	4	13	41	13	14	20	29	14	11	32

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification			41224	41226	41228	41229	41230	41231	41232	41233	41234	41235
Sample Identification			BH12	BH12	BH12	BH12	BH13	BH13	BH13	BH14	BH14	BH15
Depth (m)			0.5-1.0	2.5-3.0	4.5-5.0	7.0-7.5	0.5-1.0	6.0-6.5	7.0-7.5	1.0-1.5	7.0-7.5	0.1-0.6
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	12	11	27	32	12	25	29	14	40	8

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

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Laboratory Identification			41238	41240	41242	41243	41244	41245	41246	41247	41248	41249
Sample Identification			BH15	BH15	BH15	BH16	BH16	BH16	BH17	BH20	BH20	BH6
Depth (m)			2.0-2.5	4.0-4.5	7.0-7.3	0.5-1.0	3.0-3.5	7.0-7.5	1.0-1.5	0.2-0.5	1.0-1.5	1.0-1.5
Sampling Date recorded on COC			10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	10/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	20	46	40	10	15	26	11	4	6	7

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification			41250	41251	41252	41254	41255	41257	41258	41259	41261	41262
Sample Identification			BH6	BH7	BH7	BH7	BH8	BH8	BH1	BH1	BH1	BH2
Depth (m)			5.0-5.5	0.2-0.4	1.2-1.5	4.0-4.5	0.5-1.0	6.5-7.0	0.5-1.0	1.0-1.5	6.5-7.0	0.5-1.0
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	38	7	14	15	11	27	9	16	35	20

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

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Laboratory Identification			41263	41265	41266	41268	41269	41270	41272	41273	41274	41275
Sample Identification			BH2	BH2	BH3	BH3	BH3	BH4	BH4	BH4	BH18	BH18
Depth (m)			1.0-1.5	6.5-7.0	0.5-1.0	2.5-3.0	5.5-6.0	0.5-1.0	2.5-3.0	4.0-4.5	0.5-1.0	4.2-4.5
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	11	27	9	12	28	9	9	30	12	26

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification			41276	41277	41278	41279	41281	41282	41283	41345	41346	41347
Sample Identification			BH19	BH19	BH19	BH19	SQA2	SQA3	SQA4	SP01	SP02	SP03
Depth (m)			0.5-1.0	1.0-1.5	2.5-3.0	6.0-6.5	--	--	--	--	--	--
Sampling Date recorded on COC			11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
Laboratory Extraction (Preparation) Date			14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05	14/10/05
Laboratory Analysis Date			17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05	17/10/05
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	8	14	14	25	25	13	11	4	5	7

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

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Laboratory Identification			41210d	41210r	41226d	41226r	41234d	41234r	41257d	41257r	41269d	41269r
Sample Identification			QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)			--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC			--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date			14/10/05	--	14/10/05	--	14/10/05	--	14/10/05	--	14/10/05	--
Laboratory Analysis Date			17/10/05	--	17/10/05	--	17/10/05	--	17/10/05	--	17/10/05	--
Method	**Moisture**	**EQL**										
E005.2	Moisture	--	14	7%	12	9%	40	0%	24	12%	28	0%

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification			41276d	41276r
Sample Identification			QC	QC
Depth (m)			--	--
Sampling Date recorded on COC			--	--
Laboratory Extraction (Preparation) Date			14/10/05	--
Laboratory Analysis Date			17/10/05	--
Method	**Moisture**	**EQL**		
E005.2	Moisture	--	10	22%

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

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LabMark

Quality, Service, Support

Sample **Receipt** Notice (SRN)



Client Details		Laboratory Reference Information	
		Please have this information ready when contacting Labmark.	
Client Name:	Waste Solutions Australia	**Laboratory Report:**	**E023976**
Client Phone:	07 3366 5778	**Quotation Number:**	- Not provided, standard prices apply
Client Fax:	07 3366 7302	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Contact Name:	73(2)Irrelevant	**Phone:**	61 2 9476 6533
Contact Email:	73(2)I@wastesolutions.biz	**Fax:**	61 2 9476 8219
Client Address:	P.O. Box 514 Ashgrove QLD 4060	**Sample Receipt Contact:**	73(2)Irrelevan
		Email:	73(2)Irreleva@labmark.com.au
Project Name:	Paringa Road	**Reporting Contact:**	73(2)Irrelev
Project Number:	A399	**Email:**	73(2)Irrele@labmark.com.au
CoC Number:	S4814-4821		
Purchase Order:	- Not provided -		
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL		
Date Sampled (earliest date):	10/10/2005	**NATA Accreditation:**	13542
Date Samples Received:	13/10/2005	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	14/10/2005	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	19/10/2005	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200409998 (Sydney)

Sample Condition:
COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals intact .
Sample container & sample integrity suitable .

Comments:
SRN Re-issued. Samples SP01, 02 and 03 added to Coc and M8 analysis added as per client's email request. Bismuth removed from analysis as per client's request.

Holding Times:
Date received allows for sufficient time to meet Technical Holding Times.

Preservation:
Chemical preservation of samples satisfactory for requested analytes.

Important Notes:
Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $20/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

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73(2)Irrelevant

From: 73(2)Irrelevant@wastesolutions.biz>
To: 73(2)Irrelevant@labmark.com.au>
Sent: Friday, 14 October 2005 9:57 AM
Subject: Re: A399

Hello 73(2)

Please analyse the SP-XX samples for the suite of 8 metals.

Thanks,
73(2)

E023976

----- Original Message -----
From: 73(2)Irrelevant @labmark.com.au]
Sent: Thu, 13 Oct 2005 11:32:58 +1000
To: 73(2)Irreleva
Subject: A399

> 73(2)IThree extra samples were recieved with the latest
> batch of soils sent to us today (A399). These samples do not
> appear on the COC. Please contact me with the required
> analysis. Cheers 73(2)Irrelevant
>
> Labmark Pty Limited
> Unit 1, 8 Leighton Place
> Asquith, N.S.W, 2077
> Australia
>
> Phone no: + 61 2 9476 6533
> Fax no. + 61 2 9476 8219
> website: www.labmark.com.au
> email: 73(2)Irrelev@labmark.com.au

--
73(2)Irreleva
Senior Environmental Engineer
Mob: 73(2)Irrelevar

WASTE SOLUTIONS AUSTRALIA PTY LTD
PO Box 514
(Level 1, 254 Waterworks Road)
Ashgrove Q 4060

Phone: +61 7 3366 5778
Fax: +61 7 3366 7302
Email: wsa@wastesolutions.biz

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Rec'd 14/10/05
73(2)Irrel

R

14/10/2005

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S4814 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9586-7344
73(2)Irrelevant
73(2)Irrele @labmark.com.au
73(2)Irrelevant @labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: ~~USA~~, Waste Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA ROAD
Project Type (eg. Service Station): Power Stn
Project No: A399
Lab. Quote No:
Tel: 0733665778
Fx: 0733667302
Date Required: 19/~~12~~/10/05

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv (pdf)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	BTEX+vTPH(C6-9) PT-GC/FID/PID/elMS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	(circle) OC, OP, (PCB) GC/ECD/FPD	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	(circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_{2L}, NO_3, NO_2	(circle) TP, ortho-P, TKP	(circle) Cl^-, F^-, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41209	BH5	0.2-0.5	11-10-5														X																X	Metals (8 suite)
41210	BH5	1.5-2.0															X	X		X					X								X	TCLP 8 metals
41211	BH5	2.5-3.0																																		
41212	BH5	4.0-4.5																																		
41213	BH5	4.5-5.0																																		
41214	BH5	5.5-6.0															X																X			
41215	BH9	0.0-0.5	0.0-0.5																																	
41216	BH9	1.0-1.5															X																X	X		
41217	BH10	1.0-1.5															X																X			
41218	BH10	5.5-6.0															X																X			
Totals																																				

*Metals (circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. EC23976

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12-10-05 Received By: 73(2)Irrele Date: 13/10/05 Time: 9am

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4815 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev @labmark.com.au
73(2)Irrelevant @labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Tel: 07 33665778
Fx: 07 33667302
Project Name: PARINGA RD
Date Required: 19-10-05
Project Type (eg. Service Station): Sewer Stn Project No: A3999
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (.xls) .csv (.pdf)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Combo (circle) <7> <6> <14> <5> <4> <13> <3> <12> <2> <11> <1> <10> <9> <8>

Volatile Tests (125g)
- BTEX+vTPH(C6-9) PT-GC/FID/PID/ioMS — 2x43 ml
- VHC PT-GC/MS — 2x43ml
- THM PT-GC/MS — 2x43ml
- MTBE PT-GC/MS
- VAC PT-GC/MS
- VOC PT-GC/MS

Semi- & Non-Volatile Tests (125g (max. 4 tests))
- TPH (C10-36) GC/FID — 500 ml
- PAH's GC/MS — 600 ml
- Phenols GC/MS — 500 ml
- Aromatic/ Aliphatic TPH GC/FID — 500 ml
- (circle) OC OR PCB GC/ECD/FPD — 1 L
- SVOC GC/MS — 500 ml
- Phenoxy Acid Herbicides GC/MS — 125 ml
- Explosives HPLC
- (circle) Metals* (dissolved / total) — 250g
- TCLP (specify test - other)
- ZHE TCLP (specify test - other)

Nutrient Tests (125g (max. 4 tests); 0.1 - 1L (chemical groups))
- (circle) pH, EC
- (circle) NH_3, TKN, N_{org}, TN
- (circle) NO_{2x}, NO_3^-, NO_2^-
- (circle) TP, ortho-P, TKP
- (circle) Cl^-, F^-, SO_4^{2-}
- (circle) Total Alk, Speciated Alk
- (circle) Free CN, WAD, Total CN
- Total Phenolics
- (circle) Major Cations (Ca, Mg, Na, K)

Other (eg. TCLP tests here): 8 metals / suite; TCLP 8 metals

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix (soil / water / air / paint, filters / other)	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo	BTEX+vTPH	VHC	THM	MTBE	VAC	VOC	TPH	PAH's	Phenols	Aromatic/ Aliphatic TPH	OC OR PCB	SVOC	Phenoxy Acid Herbicides	Explosives	Metals*	TCLP	ZHE TCLP	pH, EC	NH_3, TKN, N_{org}, TN	NO_{2x}, NO_3^-, NO_2^-	TP, ortho-P, TKP	Cl^-, F^-, SO_4^{2-}	Total Alk, Speciated Alk	Free CN, WAD, Total CN	Total Phenolics	Major Cations (Ca, Mg, Na, K)	Other
41219	BH10	6.5-7.0	18.10.05										X																			X
41220	BH 11	0.5-1.0											X	X		X				X												X
41221	BH 11	1.5-2.0																														
41222	BH 11	3.0-3.5											X																			X
41223	BH 11	6.0-6.5											X																			X
41224	BH 12	0.5-1.0											X	X		X				X												X
41225	BH 12	1.5-2.0																														
41226	BH 12	2.5-3.0											X																			X
41227	BH 12	3.5-4.0																														
41228	BH 12	4.5-5.0											X																			X
Totals																																

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E0239776

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12.10.05 Received By: 73(2)Irrelev Date: 13/10/05 Time: 9.40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4816 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevant@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia
Tel: 07 33665778
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Fx: 07 33667302
Project Name: PARINGA RD
Date Required: 19-10-05
Project Type (eg. Service Station): Power Stn
Project No: A399
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type: Soil (G) Nat. Orange	0.5-1L (G) Nat. Orange	43ml VOA (G) Nat. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Nat. Green	0.1-0.2L (P) HNO3 Red Filtered YES/ NO	0.1-1L (P) NaOH, CdNO3 Blue	Other	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	BTEX+VTPH (C6-9) PT-GC/FID/PID/ELCD/MS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID (circle) (C6-C9) (C9-C10)	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	pH, EC	NH_3, TKN, N_{org}, TN	NO_x, NO_3^-, NO_2^-	TP, ortho-P, TKP	Cl^-, F^-, SO_4^{2-}	Total Alk, Speciated Alk	Free CN, WAD, Total CN	Total Phenolics	Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41229	BH2	7.0-7.5	10-10-5																																									8 metal Suite
41230	BH3	0.5-1.0																																											TCLP 8 metals
41231	BH3	6.0-6.5																																										
41232	BH3	7.0-7.5																																									
41233	BH9	1.0-1.5																																									
41234	BH9	7.0-7.5																																									
41235	BH15	0.1-0.6																																									
41236	BH15	0.6-0.9																																									
41237	BH15	1.0-1.5																																									
41238	BH15	2.0-2.5																																									
Totals																																										

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E023976

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12-10-05 Received By: 73(2)Irrele Date: 13/10/05 Time: 9.40 am

Relinquished by (print): Signed: Date: Received By: Date: Time:

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Published on DES Disclosure Log RTI Act 2009

S4817 **CHAIN OF CUSTODY**

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Mwst Solutions Australia P/L. Tel: 0733665778
Project Manager: 73(2)Irrelevant Sampler: 73(2)Irrelevant Fx: 0733667302
Project Name: PARINGA RD Date Required: 19-10-05
Project Type (eg. Service Station): POWER STN Project No: A399 Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ...... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv (pdf)). Please specify. —

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix	Container Type	TPH (C10-36) GC/FID	Metals* (dissolved / total)
41239	BH15 3.0-3.5		10.10.05				
41240	BH15 4.0-4.5		↓			X	X
41241	BH15 4.5-5.0		↓				
41242	BH15 7.0-7.5		↓			X	X
41243	BH16 0.5-1.0		↓			X	X
41244	BH16 3.0-3.5		↓			X	X
41245	BH16 7.0-7.5		↓			X	X
41246	BH17 1.0-1.5		↓			X	X
41247	BH20 0.2-0.5		↓			X	X
41248	BH20 1.0-1.5		↓			X	X
Totals							

Matrix: soil, water, air, paint, filters, other
Container Type (Nat. = unpreserved, G=glass, P=plastic): Soil (G) Nat. Orange; 0.5-1L (G) Nat. Orange; 43ml VOA (G) Nat. Orange; 43ml VOA (G) HCl Maroon; 0.1-1L (P) H2SO4 Purple; 0.1-1L (G) H2SO4 Purple; 0.1-1L (P) Nat. Green; 0.1-0.2L (P) HNO3 Red Filtered YES/NO; 0.1-1L (P) NaOH, CdNO3 Blue; Other

Analysis columns: Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>; Volatile Tests 125g: BTEX+vTPH(C6-9) PT-GC/FID/PID/or MS, VHC PT-GC/MS, THM PT-GC/MS, MTBE PT-GC/MS, VAC PT-GC/MS, VOC PT-GC/MS; Semi- & Non-Volatile Tests 125g (max. 4 tests): TPH (C10-36) GC/FID, PAH's GC/MS, Phenols GC/MS, Aromatic/ Aliphatic TPH GC/FID, (circle) OC, OP, PCB GC/ECD/FPD, SVOC GC/MS, Phenoxy Acid Herbicides GC/MS, Explosives HPLC, (circle) Metals* (dissolved / total); Leach 250g: TCLP (specify test - other), ZHE TCLP (specify test - other); Nutrient Tests 125g (max. 4 tests): (circle) pH, EC; (circle) NH_3, TKN, N_{org}, TN; (circle) NO_x, NO_3^-, NO_2^-; (circle) TP, ortho-P, TKP; (circle) Cl^-, F^-, SO_4^{2-}; (circle) Total Alk, Speciated Alk; (circle) Free CN, WAD, Total CN; Total Phenolics; (circle) Major Cations (Ca, Mg, Na, K); Other (eg. TCLP tests here)

*Metals (circle): (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg) Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E023976

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12.10.05 Received By: 73(2)Irrelev Date: 13/10/05 Time: 9:40
Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4818 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevglabmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia PL
Project Manage 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: A399
Tel: 07 33665778
Fx: 07 33667302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, fibers	other	Container Type (Nat. = unpreserved, Gs=glass, P=plastic): Soil (G) Nat. Orange	0.5-1L (G) Nat. Orange	43ml VOA (G) Nat. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Nat. Green	0.1-0.2L (P) HNO3 Red Filtered YES/ NO	0.1-1L (P) NaOH, CdNO3 Blue	Other	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests: BTEX+VTPH (C6-9) PT-GC/FID/PID/MS (2x43 ml)	VHC PT-GC/MS (2x43ml)	THM PT-GC/MS (2x43ml)	MTBE PT-GC/MS (2x43ml)	VAC PT-GC/MS	VOC PT-GC/MS	Semi- & Non-Volatile Tests (125g (max. 4 tests)): TPH (C10-36) GC/FID (500 ml)	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID (500 ml)	(circle) OC, OP, (PCB) GC/ECD/FPD (500 ml)	SVOC GC/MS (500 ml)	Phenoxy Acid Herbicides GC/MS (1 L)	Explosives HPLC (500 ml)	(circle) Metals* (dissolved / total) (125 ml)	Leach: TCLP (specify test - other) (250g)	ZHE TCLP (specify test - other)	Nutrient Tests (125g (max. 4 tests), 0.1 - 1L (chemical groups)): (circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_2, NO_3, NO_2	(circle) TP, ortho-P, TKP	(circle) Cl^-, F, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	(circle) Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here): 8 metal Scr	TCLP 8 metals
41249	BH6	1.0-1.5	11-10-05																					X																X	
41250	BH6	5.0-5.5																						X																X	
41251	BH7	0.2-0.4																						X																X	
41252	BH7	1.2-1.5																						X																X	
41253	BH7	2.5-3.0																						X																X	
41254	BH7	4.0-4.5																						X																X	
41255	BH8	0.5-1.0																						XX			X				X									X	X
41256	BH8	1.0-1.5																						*																	
41257	BH8	6.5-7.0																						X																X	
41258	BH1	0.5-1.0																						X																X	
Totals																																											

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E023976

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant Signed: 73(2)Irrelevant Date: 12-10-05 Received By: 73(2)Irrele Date: 13/10/05 Time: 9:40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4819 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrele@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Project Manager: 73(2)Irrelevant
Sampler 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: A399
Tel: 07 33665778
Fx: 07 3366 7302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv (pdf)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> / <8> <9> <10> <11> <12> <13> <14>	BTEX+vTPH(C6-9) PT-GC/FID/PID/o/MS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	(circle) OC, OP, PCB GC/ECD/FPD	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	(circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_2, NO_3; NO_2	(circle) TP, ortho-P, TKP	(circle) Cl, F, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	(circle) Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41259	BH1	1.0-1.5	11-10-05						Soil (G) Nat. Orange; 0.5-1L (G) Nat. Orange; 43ml VOA (G) Nat. Orange; 43ml VOA (G) HCl Maroon; 0.1-1L (P) H_2SO_4 Purple; 0.1-1L (G) H_2SO_4 Purple; 0.4-1L (P) Nat. Green; 0.1-0.2L (P) HNO_3 Red Filtered YES/ NO; 0.1-1L (P) NaOH, CdNO3 Blue; Other							X	X		X				X																X
41260	BH1	2.5-3.0																																		
41261	BH1	6.5-7.0															X																		X	
41262	BH2	0.5-1.0															X																		X	
41263	BH2	1.0-1.5															X																		X	
41264	BH2	2.5-3.0																																		
41265	BH2	6.5-7.0															X																		X	
41266	BH3	0.5-1.0															X																		X	
41267	BH3	1.0-1.5																																		
41268	BH3	2.5-3.0															X																		X	
Totals																																				

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. EO23976

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print) 73(2)Irrelevant Signed: Date: 12-10-05 Received By: 73(2)Irre Date: 13/10/05 Time: 9:40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4820 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-8533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev labmark.com.au
73(2)Irrelevant labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: A399
Tel: 07 3366 5778
Fx: 07 3366 7302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv (dif)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, Geglass, Plastic): Soil (G) Nat. Orange	0.5-1L (G) Nat. Orange	43ml VOA (G) Nat. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Nat. Green	0.1-0.2L (P) HNO3 Red Filtered YES/ NO	0.1-1L (P) NaOH, CdNO3 Blue	Other	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <10> <11> <12> <13> <14>	BTEX+vTPH(C6-9) PT-GC/FID/PID/MS (Volatile Tests 125g, 2x43ml)	VHC PT-GC/MS (2x43ml)	THM PT-GC/MS (2x43ml)	MTBE PT-GC/MS (2x43ml)	VAC PT-GC/MS (2x43ml)	VOC PT-GC/MS (2x43ml)	TPH (C10-36) GC/FID (Semi- & Non-Volatile Tests 125g (max. 4 tests) 500 ml)	PAH's GC/MS (500 ml)	Phenols GC/MS (500 ml)	Aromatic/ Aliphatic TPH GC/FID (circle) OCP, PCB GC/ECD/FPD (500 ml)	SVOC GC/MS (500 ml)	Phenoxy Acid Herbicides GC/MS (1 L)	Explosives HPLC (500 ml)	Metals* (dissolved / total) (circle) (125 ml)	TCLP (specify test - other) (Leach 250g)	ZHE TCLP (specify test - other)	pH, EC (circle) (Nutrient Tests 125g (max. 4 tests) 0.1 - 1L (chemical groups))	NH_3, TKN, N_{org}, TN (circle)	NO_x, NO_3^-, NO_2^- (circle)	TP, ortho-P, TKP (circle)	Cl^-, F, SO_4^{2-} (circle)	Total Alk, Speciated Alk (circle)	Free CN, WAD, Total CN (circle)	Total Phenolics (circle)	Major Cations (Ca, Mg, Na, K) (circle)	Other (eg. TCLP tests here)
41269	BH3	5.5-6.0	11.10.05																				X																X	Metals (12.5ml)
41270	BH4	0.5-1.0																					X	X		X			X										X	
41271	BH4	1.0-1.5																					X																	
41272	BH4	2.5-3.0																					X						X											
41273	BH4	4.0-4.5																					X						X											
41274	BH18	0.5-1.0																					X			X			X										X	
41275	BH18	4.2-4.5																					X						X									X		
41276	BH19	0.5-1.0																					X	X		X			X										X	
41277	BH19	1.0-1.5																					X																X	
41278	BH19	2.5-3.0																					X																X	
Totals																																																		

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E023776

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): Signed: 73(2)Irrelevant Date: 12.10.05 Received By: 73(2)Irrelevant Date: 13/10/05 Time: 9.40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4821 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): Power Stn
Project No: A399
Tel: 07 3366 5778
Fx: 07 3366 7302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: **1 day** **2 days** **3 days** ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	plant, fibers	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests: BTEX+vTPH(C6-9) PT-GC/FID/PID/dorMS; VHC PT-GC/MS; THM PT-GC/MS; MTBE PT-GC/MS; VAC PT-GC/MS; VOC PT-GC/MS	Semi- & Non-Volatile Tests: TPH (C10-36) GC/FID; PAH's GC/MS; Phenols GC/MS; Aromatic/ Aliphatic TPH GC/FID; OC, OP, PCB GC/ECD/FPD; SVOC GC/MS; Phenoxy Acid Herbicides GC/MS; Explosives HPLC; Metals* (dissolved / total); TCLP (specify test - other); ZHE TCLP (specify test - other)	Nutrient Tests: pH, EC; NH_3, TKN, N_{org}, TN; NO_x, NO_3^-, NO_2^-; TP, ortho-P, TKP; Cl^-, F^-, SO_4^{2-}; Total Alk, Speciated Alk; Free CN, WAD, Total CN; Total Phenolics; Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41279	BH9 6.0-6.5		11-10-5									X	X	
41280	SQA1													
41281	SQA2											X	X	
41282	SQA3											X	X	
41283	SQA4											X	X	
41284	SQA5													
41285	SQA6													
41286	SQA7													
41345	SP01													
41346	SP02													
41347	SP03													
Totals														

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. 40239.76

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant Signed: 73(2)Irrelevant Date: 12.10.05 Received By: 73(2)Irrelev Date: 13/10/05 Time: 9.40

Relinquished by (print): Signed: Date: Received By: Date: Time:

R

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LabMark

Quality, Service, Support

Sample **Receipt** Notice (SRN)

Client Details		Laboratory Reference Information	
Client Name:	Waste Solutions Australia	**Please have this information ready when contacting Labmark.**	
Client Phone:	07 3366 5778		
Client Fax:	07 3366 7302	**Laboratory Report:**	**E023976**
Contact Name:	73(2)Irrelevar	**Quotation Number:**	- Not provided, standard prices apply
Contact Email:	73(2@wastesolutions.biz	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Client Address:	P.O. Box 514 Ashgrove QLD 4060	**Phone:**	61 2 9476 6533
		Fax:	61 2 9476 8219
Project Name:	Paringa Road	**Sample Receipt Contact:**	73(2)Irrelevant
Project Number:	A399	**Email:**	73(2)Irrelevar@labmark.com.au
CoC Number:	S4814-4821	**Reporting Contact:**	73(2)Irrele
Purchase Order:	- Not provided -	**Email:**	73(2)Irrel@labmark.com.au
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL		
Date Sampled (earliest date):	10/10/2005	**NATA Accreditation:**	13542
Date Samples Received:	13/10/2005	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	13/10/2005	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	19/10/2005	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200409998 (Sydney)

Sample Condition:
COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals intact .
Sample container & sample integrity suitable .

Comments:
Bismuth removed from analysis as per client's request. Samples SP01, 02, 03 recieved and placed on hold.

Holding Times:
Date received allows for sufficient time to meet Technical Holding Times.

Preservation:
Chemical preservation of samples satisfactory for requested analytes.

Important Notes:
Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $20/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

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PAGE 1 OF 8

S4814 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevant@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: ~~GSA~~, Waste Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA ROAD
Project Type (eg. Service Station): Power Stn
Project No: A399
Lab. Quote No:
Tel: 07 3366 5778
Fx: 07 3366 7302
Date Required: 19/10/05

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax xls csv pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests: BTEX+vTPH (C6-9) PT-GC/FID/PID/MS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	Semi- & Non-Volatile Tests: TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	(circle) OC, OP, PCB GC/ECD/HPO	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	Nutrient Tests: (circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_2, NO_3, NO_2	(circle) TP, ortho-P, TKP	(circle) Cl^-, F^-, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41209	BH5	0.2-0.5	11-10-5														X																		X	
41210	BH5	1.5-2.0															X	X		X					X										X	
41211	BH5	2.5-3.0																																		
41212	BH5	4.0-4.5																																		
41213	BH5	4.5-5.0																																		
41214	BH5	5.5-6.0															X																		X	
41215	BH9	0.0-0.5	0-10-5																																	
41216	BH9	1.0-1.5															X																		X	
41217	BH10	1.0-1.5															X																		X	
41218	BH10	5.5-6.0															X																		X	
Totals																																				

*Metals (circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. EC239716

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print)	73(2)Irrelevant	Signed:	Date: 12-10-05	Received By:	73(2)Irre	Date: 13/10/05 Time: 9am
Relinquished by (print):		Signed:	Date:	Received By:		Date: Time:

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PAGE 2 OF 8

S4815 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevant@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Wask Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): Sewer Stn
Project No: A3599
Tel: 0733665778
Fx: 0733667302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (.xls) .csv (.pdf)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <8> <10> <11> <12> <13> <14> <5> <6> <7>	Volatile Tests: BTEX+vTPH (C6-9) PT-GC/FID/PID/MS; VHC PT-GC/MS; THM PT-GC/MS; MTBE PT-GC/MS; VAC PT-GC/MS; VOC PT-GC/MS	Semi- & Non-Volatile Tests: TPH (C10-36) GC/FID; PAH's GC/MS; Phenols GC/MS; Aromatic/ Aliphatic TPH GC/FID; (circle) OCP, PCB; SVOC GC/MS; Phenoxy Acid Herbicides GC/MS; Explosives HPLC; Metals* (dissolved / total); TCLP (specify test - other); ZHE TCLP (specify test - other)	Leach	Nutrient Tests: pH, EC; NH_3, TKN, N_{org}, TN; NO_x, NO_3, NO_2; TP, ortho-P, TKP; Cl, F, SO_4^{2-}; Total Alk, Speciated Alk; Free CN, WAD, Total CN; Total Phenolics; Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41219	BH10	6.5-7.0	10-10-05									X			X
41220	BH 11	0.5-1.0										X X	X	X	X
41221	BH 11	1.5-2.0													
41222	BH 11	3.0-3.5										X			X
41223	BH 11	6.0-6.5										X			X
41224	BH 12	0.5-1.0										X X	X	X	X
41225	BH 12	1.5-2.0													
41226	BH 12	2.5-3.0										X			X
41227	BH 12	3.5-4.0													
41228	BH 12	4.5-5.0										X			X
Totals															

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E0239776

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12-10-05 Received By: 73(2)Irrelevant Date: 13/10/05 Time: 9.40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4816 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrele @labmark.com.au
73(2)Irrelevant @labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): Power Stn
Project No: A399
Tel: 07 33665778
Fx: 07 33667302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: **1 day** **2 days** **3 days** ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	BTEX+vTPH (C6-9) PT-GC/FID/PID/ELCD/MS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID (circle) GC/ECD/FPD	PCB	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	pH, EC	NH_3, TKN, N_{org}, TN	NO_x, NO_3^-, NO_2^-	TP, ortho-P, TKP	Cl^-, F^-, SO_4^{2-}	Total Alk, Speciated Alk	Free CN, WAD, Total CN	Total Phenolics	Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
									Soil (G) Nat. Orange; 0.5-1L (G) Nat. Orange; 43ml VOA (G) Nat. Orange; 43ml VOA (G) HCl Maroon; 0.1-1L (P) H_2SO_4 Purple; 0.1-1L (G) H_2SO_4 Purple; 0.1-1L (P) Nat. Green; 0.1-0.2L (P) HNO_3 Red Filtered YES/ NO; 0.1-1L (P) NaOH, CdNO3 Blue; Other		2x43 ml	2x43ml	2x43ml			500 ml	500 ml	500 ml	500 ml	1 L	500 ml	125 ml	250g												
41229	BH12	7.0-7.5	10-10-05								X						X																	X
41230	BH13	0.5-1.0									X						X																	X
41231	BH13	6.0-6.5									X						X																	X
41232	BH13	7.0-7.5									X						X																	X
41233	BH14	1.0-1.5									X						X																	X
41234	BH14	7.0-7.5									X						X																	X
41235	BH15	0.1-0.6									X	X						X				X												X
41236	BH15	0.6-0.9																																	
41237	BH15	1.0-1.5																																	
41238	BH15	2.0-2.5									X	X						X				X												X
Totals																																			

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E0239716

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12.10.05 Received By: 73(2)Irrelevant Date: 13/10/05 Time: 9.40 am

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4817 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev@labmark.com.au
73(2)Irreleva@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: 1399
Lab. Quote No:
Tel: 0733667778
Fx: 0733667302
Date Required: 19-10-05

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Net. = unpreserved, G=glass, P=plastic): Soil (G) Net. Orange	0.5-1L (G) Net. Orange	43ml VOA (G) Net. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Net. Green	0.1-0.2L (P) HNO3 Red Filtered YES/ NO	0.1-1L (P) NaOH, CdNO3 Blue	Other	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests 125g: BTEX+vTPH(C6-9) PT-GC/FID/PID&/MS 2x43 ml; VHC PT-GC/MS 2x43ml; THM PT-GC/MS; MTBE PT-GC/MS 2x43ml; VAC PT-GC/MS; VOC PT-GC/MS	Semi- & Non-Volatile Tests 125g (max. 4 tests): TPH (C10-36) GC/FID 500 ml; PAH's GC/MS 500 ml; Phenols GC/MS 500 ml; Aromatic/ Aliphatic TPH GC/FID (circle) OC, OP, PCB GC/ECD&FPD 500 ml; SVOC GC/MS 1 L; Phenoxy Acid Herbicides GC/MS 500 ml; Explosives HPLC 125 ml	Leach: Metals* (dissolved / total) (circle); TCLP (specify test - other) 250g; ZHE TCLP (specify test - other)	Nutrient Tests 125g (max. 4 tests) 0.1 1L (chemical groups): (circle) pH, EC; (circle) NH_3, TKN, N_{org}, TN; (circle) NO_x, NO_3^-, NO_2^-; (circle) TP, ortho-P, TKP; (circle) Cl^-, F^-, SO_4^{2-}; (circle) Total Alk, Speciated Alk; (circle) Free CN, WAD, Total CN; (circle) Total Phenolics; (circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41239	BH15	3.0-3.5	10.10.05																						
41240	BH15	4.0-4.5																			X			X	
41241	BH15	4.5-5.0																							
41242	BH15	7.0-7.5																			X			X	
41243	BH16	0.5-1.0																			X			X	
41244	BH16	3.0-3.5																			X			X	
41245	BH16	7.0-7.5																			X			X	
41246	BH17	1.0-1.5																			X			X	
41247	BH20	0.2-0.5																			X			X	
41248	BH20	1.0-1.5																			X			X	
Totals																									

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E0223976

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): 73(2)Irrelevant Signed: 73(2)Irrelevant Date: 12.10.05 Received By: 73(2)Irrele Date: 13/10/05 Time: 9140

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4818 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev @labmark.com.au
73(2)Irrelevant @labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: Waste Solutions Australia P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: A399
Tel: 07 33665778
Fx: 07 33667302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: **1** day **2** days **3** days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	BTEX+vTPH (C6-9) PT-GC/FID/PID/DioMS 2x43 ml	VHC PT-GC/MS 2x43ml	THM PT-GC/MS 2x43ml	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID 500 ml	PAH's GC/MS 500 ml	Phenols GC/MS 500 ml	Aromatic Aliphatic TPH GC/FID 500 ml	(circle) OC/OP/PCB GC/ECD/FPD 500 ml	SVOC GC/MS 1 L	Phenoxy Acid Herbicides GC/MS 500 ml	Explosives HPLC 125 ml	(circle) Metals* (dissolved / total)	TCLP (specify test - other) 250g	ZHE TCLP (specify test - other)	(circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_2, NO_3, NO_2	(circle) TP, ortho-P, TKP	(circle) Cl, F, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)	
41249	BH6	1.0-1.5	11-10-05														X																X		Bonded Suite
41250	BH6	5.0-5.5															X																X		
41251	BH7	0.2-0.4															X																X		
41252	BH7	1.2-1.5															X																X		
41253	BH7	2.5-3.0															X																X		
41254	BH7	4.0-4.5															X																X		
41255	BH8	0.5-1.0															X	X			X				X									X
41256	BH8	1.0-1.5															X																		
41257	BH8	6.5-7.0															X																X		
41258	BH1	0.5-1.0															X																X		
Totals																																						

*Metals (circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. E023976

Security Seal Applied YES/NO
Security Seal Serial #

Relinquished by (print): 73(2)Irrelevant Signed: Date: 12-10-05 Received By: 73(2)Irrelev Date: 13/10/05 Time: 9:40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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S4819 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevant@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Project Name: PARINGA RD
Project Type (eg. Service Station): POWER STN
Project No: A399
Tel: 07 33665778
Fx: 07 3366 7302
Date Required: 19-10-05
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv (pdf)). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic): Soil (J) Nat. Orange	0.5-1L (G) Nat. Orange	43ml VOA (G) Nat. Orange	43ml VOA (G) HCl Maroon	0.1-1L (P) H2SO4 Purple	0.1-1L (G) H2SO4 Purple	0.1-1L (P) Nat. Green	0.1-0.2L (P) HNO3 Red Filtered YES/ NO	0.1-1L (P) NaOH, CdNO3 Blue	Other	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests: BTEX+vTPH (C6-9) PT-GC/FID/PID/MS (2x43 ml)	VHC PT-GC/MS (2x43ml)	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS (2x43ml)	Semi- & Non-Volatile Tests (125g (max. 4 tests)): TPH (C10-36) GC/FID (500 ml)	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	(circle) OC, OP, PCB GC/ECD/FPD	SVOC GC/MS (500 ml)	Phenoxy Acid Herbicides GC/MS (1 L)	Explosives HPLC (500 ml)	(circle) Metals^ (dissolved / total) (125 ml)	TCLP (specify test - other) (250g)	ZHE TCLP (specify test - other)	Nutrient Tests (125g (max. 4 tests)): (circle) pH, EC	(circle) NH_3, TKN, N_{org}, TN	(circle) NO_2, NO_3; NO_2	(circle) TP, ortho-P, TKP	(circle) Cl^-, F, SO_4^{2-}	(circle) Total Alk, Speciated Alk	(circle) Free CN, WAD, Total CN	Total Phenolics	(circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41259	BH1	1.0-1.5	11-10-05																				X	X			X		X													X
41260	BH1	2.5-3.0																																								
41261	BH1	6.5-7.0																					X																		X
41262	BH2	0.5-1.0																					X																		X
41263	BH2	1.0-1.5																					X																		X
41264	BH2	2.5-3.0																																							
41265	BH2	6.5-7.0																					X																		X
41266	BH3	0.5-1.0																					X																		X
41267	BH3	1.0-1.5																																							
41268	BH3	2.5-3.0																					X																		X
Totals																																									

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples):

Lab Report No. EO23976

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print): 73(2)Irrelevant
Signed: 73(2)Irrelevant
Date: 12-10-05
Received By: 73(2)Irrel
Date: 13/10/05 Time: 9.40

Relinquished by (print):
Signed:
Date:
Received By:
Date: Time:

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S4820 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-8533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelev@labmark.com.au
73(2)Irrelevan@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Tel: 0733665778
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Fx: 0733667302
Project Name: PARINGA KD
Date Required: 19-10-05
Project Type (eg. Service Station): POWER STN
Project No: A399
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: 1 day 2 days 3 days ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax (xls) .csv ctrl). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, G=glass, P=plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	BTEX+vTPH (C6-9) PT-GC/FID/PID/MS	VHC PT-GC/MS	THM PT-GC/MS	MTBE PT-GC/MS	VAC PT-GC/MS	VOC PT-GC/MS	TPH (C10-36) GC/FID	PAH's GC/MS	Phenols GC/MS	Aromatic/ Aliphatic TPH GC/FID	OCP & PCB (circle)	SVOC GC/MS	Phenoxy Acid Herbicides GC/MS	Explosives HPLC	Metals* (dissolved / total)	TCLP (specify test - other)	ZHE TCLP (specify test - other)	pH, EC	NH_3, TKN, N_{org}, TN	NO_X, NO_3, NO_2	TP, ortho-P, TKP	Cl^-, F^-, SO_4^{2-}	Total Alk, Speciated Alk	Free CN, WAD, Total CN	Total Phenolics	Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41269	BH3	5.5-6.0	11.10.05														X								X									X	Metals (12 Sites)
41270	BH4	0.5-1.0															X	X		X					X									X	TCLP Bags 1&5
41271	BH4	1.0-1.5																																			
41272	BH4	2.5-3.0															X								X											
41273	BH4	4.0-4.5															X								X											
41274	BH18	0.5-1.0															X								X									X		
41275	BH18	4.2-4.5															X								X									X		
41276	BH19	0.5-1.0															X	X		X					X									X		
41277	BH19	1.0-1.5															X																	X		
41278	BH19	2.5-3.0															X																	X		
Totals																																					

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples): 73(2)Irrelevant

Lab Report No. 502076

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print):	Signed:	Date: 12.10.05	Received By: 73(2)Irrel	Date: 13/10/05	Time: 9.40
Relinquished by (print):	Signed:	Date:	Received By:	Date:	Time:

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S4821 CHAIN OF CUSTODY

Combination Prices only apply if Combo request is circled on COC.

Form QS0073, Rev.8 : Date Issue 12/05/2004.

LABMARK

NATA 13542, AQIS N0356

Dispatch samples to:
Unit1/ 8 Leighton Place
Asquith NSW 2077
or
116 Mooray Street
South Melbourne VIC 3205

Tel (SYD): 612-9476-6533
Fax (SYD): 612-9476-8219
Tel (MEL): 613-9686-8344
Fax (MEL): 613-9686-7344
73(2)Irrelevant
73(2)Irrelevant@labmark.com.au
73(2)Irrelevant@labmark.com.au

Client Details

Safety Precaution: laboratory sample bottles may contain preservation acid / chemicals, refer to SAFETEY label on bottle.

Company & Address: WASTE SOLUTIONS AUSTRALIA P/L
Tel: 07 3366 5778
Project Manager: 73(2)Irrelevant
Sampler: 73(2)Irrelevant
Fx: 07 3366 7302
Project Name: PARINGA RD
Date Required: 19-10-05
Project Type (eg. Service Station): Power Stn
Project No: A399
Lab. Quote No:

Global Specifications I require (default is Not required if Not ticked):

YES (tick)

1. Urgent TAT required? (please circle: **1 day** **2 days** **3 days** ..... days)
2. Fast TAT Guarantee required? (Surcharge may apply - Receipt cutoff time 3.00pm)
3. Do you wish sediment present in waters to be included in organic/ inorganic extractions?
4. Additional QA/QC reported where sample batches submitted are < 10 samples?
5. Do you require DIFFERENT standard EQL's from those stated in the current LabMark price catalogue?
6. Do you wish chromatograms to be supplied? (Additional fee applies).
7. Electronic data transfer (circle: fax .xls .csv .pdf). Please specify.

Note1: Additional water sample must be submitted for lab. duplicate & spike analysis.
Note2: Contact lab if consolidating multiple analyses into a single sample container.

Analysis Request

Lab. Number	Sample ID	Sample Depth	Sampling Date	Matrix: soil	water	air	paint, filters	other	Container Type (Nat. = unpreserved, Glegless, Plastic)	Combo (circle) <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> <11> <12> <13> <14>	Volatile Tests 125g: BTEX+vTPH(C6-9) PT-GC/FID/PID/MS (2x43 ml); VHC PT-GC/MS (2x43ml); THM PT-GC/MS (2x43ml); MTBE PT-GC/MS; VAC PT-GC/MS; VOC PT-GC/MS	Semi- & Non-Volatile Tests 125g (max. 4 tests): TPH (C10-36) GC/FID (500 ml); PAH's GC/MS (500 ml); Phenols GC/MS (500 ml); Aromatic/ Aliphatic TPH GC/FID (500 ml); (circle) OC, OP, PCB GC/ECD/FPD (500 ml); SVOC GC/MS (1 L); Phenoxy Acid Herbicides GC/MS (500 ml); Explosives HPLC (125 ml); (circle) Metals* (dissolved / total); TCLP (specify test - other); ZHE TCLP (specify test - other) (250g)	Leach	Nutrient Tests 125g (max. 4 tests) - 0.1 - 1L (chemical groups): (circle) pH, EC; (circle) NH_3, TKN, N_{org}, TN; (circle) NO_3, NO_2; (circle) TP, ortho-P, TKP; (circle) Cl^-, F^-, SO_4^{2-}; (circle) Total Alk, Speciated Alk; (circle) Free CN, WAD, Total CN; Total Phenolics; (circle) Major Cations (Ca, Mg, Na, K)	Other (eg. TCLP tests here)
41279	BH9 6.0-6.5		11-10-05									X		X
41280	SQA1											X		X
41281	SQA2											X		X
41282	SQA3											X		X
41283	SQA4											X		X
41284	SQA5													
41285	SQA6													
41286	SQA7													
41345	SP01													
41346	SP02													
41347	SP03													
Totals														

*Metals (circle): As, Cd, Cr, Cu, Ni, Pb, Zn, Hg Cr^{6+}, Cr^{3+}, Fe^{2+}, Fe^{3+}, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Tl, Bi, Sb

Comments (Highly contaminated samples):

Lab Report No. E023976

Security Seal Applied: YES/NO
Security Seal Serial #:

Relinquished by (print) 73(2)Irrelevant Signed: 73(2)Irrelevant Date: 12-10-05 Received By: 73(2)Irrelevant Date: 13/10/05 Time: 9.40

Relinquished by (print): Signed: Date: Received By: Date: Time:

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ANALYTICAL SERVICES DIVISION
ABN 30 008 127 802
Correspondence to:
PO Box 331
HUNTER REGIONAL MAIL
CENTRE NSW 2310

99 Mitchell Rd
CARDIFF NSW 2285
Telephone: (02) 4902 4800
Facsimile: (02) 4902 4899

CERTIFICATE OF ANALYSIS

Contents :
1. Cover Pages (2)
2. Analysis Report Pages
3. QA/QC Appendix
4. Additional Reports - External (if applicable)
5. Chain of Custody (if applicable)

Report No.	:	5E3707
Attention	:	73(2)Irrelevant
Client	:	Waste Solutions Australia Pty Ltd
	:	PO Box 514
	:	ASHGROVEQLD 4060
Samples	:	6
Reference/Order	:	A399
Project	:	PERRINGA ROAD
Received Samples	:	14/10/05 Instructions : 17/10/05
Date Reported	:	26/10/05

PLEASE SEE FOLLOWING PAGES FOR METHOD LISTING AND RESULTS

RESULTS

All samples were analysed as received. This report relates specifically to the samples as received. Results relate to the source material only to the extent that the samples as supplied are truly representative of the sample source. This report replaces any preliminary results issued. Note that for methods indicated with "#", NATA accreditation does not cover the performance of this service. Three significant figures (or 2 for <10PQL) are reported for statistical purposes only. Where "Total" concentrations are reported for organic suites of compounds this is the summation of the individual compounds and the PQL is noted for reporting purposes only. This report has been authorized by the NATA signatories listed in the method descriptions section on the following page.

73(2)Irrelevant
73(2)Irrelevant Ass. Dip. Applied Sc.(Chem.)
Team Leader - Metals

73(2)Irrelevant
73(2)Irrelevant B.Sc.(Chem.)
Senior Chemist - Inorganics

73(2)Irrelevant
73(2)Irrelevant B.Sc.
Team Leader - SVOC

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Report No. : 5E3707

Please note: Where samples are collected/submitted over several days, the date on which the last samples were analysed or extracted is reported.
Unless Ferrous Iron is determined on site, the possibility of a ferrous-ferric ratio change may occur.

Method	Description	Extracted	Analysed	Authorised	
E2600	pH	18/10/05	18/10/05	DBL	101
E2430	Conductivity	18/10/05	18/10/05	DBL	101
E4870	Dissolved Metals by ICP-MS	19/10/05	19/10/05	DLU	093
E4850	Mercury	19/10/05	19/10/05	DLU	093
E0221F	TPH (C10-C36)	19/10/05	20/10/05	GTO	094
E2570	Total Nitrogen	25/10/05	25/10/05	DBL	101
E2770	TKN	19/10/05	24/10/05	DBL	101
E2551	NOX	20/10/05	20/10/05	DBL	101
E2640	Phosphorus-Total	19/10/05	19/10/05	DBL	101
E0081	Organochlorine Pesticides and Total PCBs	19/10/05	20/10/05	MFA	095
E0230	TPH C6-C9 by purge & trap	18/10/05	20/10/05	GTO	094
E0010	BTEX in Water	18/10/05	20/10/05	GTO	094

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NATA Signatory

Initials	Name	Sections/Methods
73(2)Irr	73(2)Irrelevant	094, 095, 096
		094, 096
		093, 096
		101, 096
		101, 096
		101, 096
		101, 096
		101, 096, 097, 098

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Job Number : 5E3707
Client : Waste Solutions Australia Pty Ltd
Reference : A399
Project : PERRINGA ROAD

Analyte	Lab No	E227030	E227031	E227032		
		MW1	MW2	MW3		
	Sample Id	11/10/05	11/10/05	11/10/05		
	PQL					
E2600 pH in Water						
pH	0.1	6.9	7.8	7.5		
E2430 Conductivity (uS/cm at 25.0 C)						
Electrical Conductivity	5	12000	9200	18000		
Total Nitrogen	0.1	11	12	23		
E2770 Kjeldahl Nitrogen in Water						
Kjeldahl Nitrogen	0.1	10	12	23		
E25501 Nitrate as N in Water						
NOx	0.02	0.96	0.06	0.08		
E2640 Total Phosphorus in Water						
Phosphorus	0.02	1.55	5.14	2.63		

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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Job Number : 5E3707

Page 2 of 5

Client : Waste Solutions Australia Pty Ltd

plus Cover Page

Reference : A399

Project : PERRINGA ROAD

Analyte	Lab No	E227030	E227031	E227032	E227033	E227035
		MW1	MW2	MW3	WQA1	RI_1
	Sample Id	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
	PQL					
E4870 Dissolved Metals in Waters						
Arsenic	0.001	0.001	0.002	0.003	0.003	nd
Cadmium	0.0001	0.0003	0.0002	0.0002	0.0001	nd
Chromium	0.001	0.001	0.003	0.002	0.003	0.002
Copper	0.001	0.010	0.024	0.007	0.002	nd
Nickel	0.001	0.013	0.003	0.008	0.008	0.001
Lead	0.001	0.003	0.012	0.003	nd	nd
Zinc	0.002	0.320	0.415	0.157	0.095	0.005
Selenium	0.002	nd	nd	nd	nd	nd
Molybdenum	0.001	0.019	0.011	0.013	0.013	0.001
Vanadium	0.001	0.035	0.006	0.007	0.008	nd
E4850 Dissolved Mercury in Waters						
Mercury	0.001	nd	nd	nd	nd	nd

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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Job Number : 5E3707

Client : Waste Solutions Australia Pty Ltd

Reference : A399

Project : PERRINGA ROAD

Analyte	Lab No	E227030	E227031	E227032	E227033	E227034
		MW1	MW2	MW3	WQA1	TB
	Sample Id	11/10/05	11/10/05	11/10/05	11/10/05	11/10/05
	PQL					
E0221 TPH in Water (ug/L)						
C10-C14 Fraction	20	nd	nd	320	200	--
C15-C28 Fraction	100	nd	nd	nd	nd	--
C29-C36 Fraction	100	nd	nd	nd	nd	--
E0230 TPH in Water by P&T/GC-MS (ug/L)						
C6-C9 Fraction	20	--	--	--	--	nd
E0010 BTEX (P&T) in Water (ug/L)						
Benzene	0.5	nd	nd	nd	--	--
Toluene	1	nd	nd	nd	--	--
Ethylbenzene	1	nd	nd	nd	--	--
m&p-Xylene	2	nd	nd	nd	--	--
o-Xylene	1	nd	nd	nd	--	--
4-Bromofluorobenzene-SURROGATE	1	99%	99%	104%	--	--

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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Job Number : 5E3707
Client : Waste Solutions Australia Pty Ltd
Reference : A399
Project : PERRINGA ROAD

Analyte	Lab No / Sample Id / PQL	E227035 RI_1 11/10/05				
E0221 TPH in Water (ug/L)						
C10-C14 Fraction	20	nd				
C15-C28 Fraction	100	nd				
C29-C36 Fraction	100	nd				
E0230 TPH in Water by P&T/GC-MS (ug/L)						
C6-C9 Fraction	20	--				
E0010 BTEX (P&T) in Water (ug/L)						
Benzene	0.5	--				
Toluene	1	--				
Ethylbenzene	1	--				
m&p-Xylene	2	--				
o-Xylene	1	--				
4-Bromofluorobenzene-SURROGATE	1	--				

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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Job Number : 5E3707

Client : Waste Solutions Australia Pty Ltd

Reference : A399

Project : PERRINGA ROAD

Analyte	Lab No	E227030	E227031	E227032	E227035	
		MW1	MW2	MW3	RI_1	
	Sample Id	11/10/05	11/10/05	11/10/05	11/10/05	
	PQL					
E0081 OC's & Total PCB's in Water (ug/L)						
HCB	1	nd	nd	nd	nd	
a-BHC	1	nd	nd	nd	nd	
g-BHC	1	nd	nd	nd	nd	
Heptachlor	1	nd	nd	nd	nd	
Aldrin	1	nd	nd	nd	nd	
b-BHC	1	nd	nd	nd	nd	
d-BHC	1	nd	nd	nd	nd	
Oxychlordane	1	nd	nd	nd	nd	
Heptachlor epoxide	1	nd	nd	nd	nd	
Endosulfan 1	1	nd	nd	nd	nd	
Chlordane-Trans	1	nd	nd	nd	nd	
Chlordane-Cis	1	nd	nd	nd	nd	
trans-Nonachlor	1	nd	nd	nd	nd	
DDE	1	nd	nd	nd	nd	
Dieldrin	1	nd	nd	nd	nd	
Endrin	1	nd	nd	nd	nd	
DDD	1	nd	nd	nd	nd	
Endosulfan 2	1	nd	nd	nd	nd	
DDT	1	nd	nd	nd	nd	
Endosulfan sulfate	1	nd	nd	nd	nd	
Methoxychlor	1	nd	nd	nd	nd	
Total Polychlorinated biphenyl	10	nd	nd	nd	nd	
2.4.5.6-TCMX-SURROGATE	1	76%	83%	74%	77%	

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW.

Job No. 5E3707

General

1. Laboratory QA/QC including Method Blanks, Duplicates, Matrix Spikes, Laboratory Control Samples or CRM's are included in this QA/QC appendix. (Where applicable)
2. Inter-Laboratory proficiency trial results are available upon request.
3. PQLs are matrix dependent and are increased accordingly where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spike or surrogate recoveries.
5. Where 3 and 2 significant figures are reported for >10x PQL and <10x PQL respectively, the last figure is uncertain and is provided for statistical purposes only.
6. Samples duplicated or spiked are from this job only and are identified in the following QA/QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered samples, unless noted otherwise.

Maximum Holding Times for Soils, Sediments and Waters

Parameter	Holding Times
Soils	
Volatile and Semi-Volatile Organic Analysis.	Extracted in 14 days, analysed within 40 days.
Metals	Extracted and analysed within 28 days-6 months.
Inorganics*	Extracted and analysed within 7-28 days.
TCLPs*	Extracted and analysed within 14 days, (Zero Headspace-TCLP 7 days).
Waters	
Volatile Organic Analysis	Analysed within 7 days (USEPA requires 14 days).
Semi-Volatile Organic Analysis	Extracted in 7 days, analysed within 40 days.
Inorganics*	Analysed within 24 hrs-28 days.
Metals (dissolved metals should be supplied field filtered)	Prepared and analysed within 28 days.

* Please refer to 'Preservation Information Chart for Soils, Sediments & Waters' for further information. (ISFORM.098). Holding times may be extended with the use of preservation bottles and/or freezing samples. Holding times can be calculated from dates reported in the body of the report. Tests clearly exceeding holding times will be noted when sufficient information is provided.
Reference: USEPA SW846 and AMDEL SPM-01 (incorporating NEPM Guidelines).

Chain of Custody and Sample Integrity	Yes/NO/NA
Chain of Custody / instructions received with samples	Yes
Custody seals were received intact, if used	NA
Samples were received chilled and in good condition	Yes
Samples received appropriately preserved for all tests	Yes
VOC/SVOC samples were received in teflon lined containers	Yes
Samples received with Zero Headspace	Yes
Chain of Custody completed and attached (if applicable)	Yes

Chromatography Calibration/Acceptence Criteria (if applicable)

Retention time window meets acceptance criteria (+/-2%)	Yes
Reference standard meets acceptance criteria (+/-10%)	Yes
Recalibration standard meets acceptance criteria (+/-15%)	Yes
Internal standard recovery acceptable.	Yes

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW Cont..

Amdel QA/QC Compliance Assessment

	Compliance
Surrogates performed on all appropriate GC analyses and meet acceptance limits (70% - 130% recovery*).	Please see body of report
Matrix Spikes performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* or 80% - 120% recovery* for inorganics in water.)	Please see body of report
Laboratory Control samples performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* in soil or 70%-130%/90-110% recovery* for waters.)	Yes
Laboratory Duplicate samples performed once per process batch and at least 1 in 10 samples	Yes
Laboratory duplicates meet acceptance criteria <4 PQL - +/- 2 PQL 4-10 PQL - 25-50 or 50% RPD >10 PQL - 10-30 or 30% RPD	Please see body of report
Method Blanks performed once per process batch and at least 1 in 20 samples (Results not detected at the PQL).	Yes

N/A=Not Applicable.

* Phenols 50% - 130% recovery
* SVOCs 60% - 130% recovery
* Phenoxy Acid Herbicides 60% - 140% recovery

QA/QC Appendix

Please refer to the following pages for the QA/QC data.
For further information on samples or non-conformance in QC protocols please see notations in the body of the report plus comments on the following page.

Additional Comments

73(2)Irrelevant
73(2)Irrelevant Ass. Dip. Applied Sc.(Chem.)
Team Leader - Metals

73(2)Irrelevant
73(2)Irrelevant B.Sc.(Chem.)
Senior Chemist - Inorganics

73(2)Irrelevant
73(2)Irrelevant B.Sc.
Team Leader - SVOC

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AMDEL STANDARD LABORATORY QUALIFIER CODES.

Job NO. 5E3707

Qualifier Codes	Description
*	PQLs are raised due to matrix interference.
@	PQLs are raised due to insufficient sample provided for analysis.
$	The mass imbalance indicates the presence of other ions not measured as part of this procedure.
nd	<PQL
--	Not applicable
LNR	The sample was listed on the COC, but not received.
IS	Insufficient sample was supplied to conduct this analysis.
AN	The analysis indicates the presences of an analyte that has been 'tentatively' identified, and the associated numerical value represents it's approximate concentration.
A	Sample results are reported on an 'as received' basis (not moisture corrected).
B	The sample was not received in a suitable timeframe to allow completion within the recommended holding time.
C	This sample was received with headspace.
D	This sample was received with the incorrect preservation for this analysis.
E	The raw data indicates the absence of 0.055g of Copper Sulphate in the sample.
F	This sample contained significant amounts of solids and was therefore analysed by settling and decanting the aqueous phase to avoid including the solid in the analysis portion.
G	This test was performed outside the recommended holding time.
H	This sample contained significant material >5mm which was removed prior to analysis.
ISD	Insufficient sample was supplied to conduct duplicate analyses.
ISM	Insufficient sample was supplied to conduct matrix spike analyses.
W	The spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
J	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause.
K	The matrix spike concentration is less than five times the background concentration in the sample, and therfore the spike recovery can not be determined.
L	The surrogate recovery is outside of the recommended acceptance criteria, due to matrix interference.
M	The surrogate recovery is outside of the recommended acceptance criteria. Insufficent sample remains to perform re-analysis.
N	Results are expressed in mg/L (ppm) due to the high concentration of the analyte.
O	The results reported are 'recoverable organics' for this fraction, as the chromatogram and peak shape indicates the presence of a significant concentration of polar compounds.
P	The concentration reported is mainly due to a single peak.
Q	This samples contains volatile halogenated oxygenated or other compounds that are included and quantitated as part of TPH C6-9.
R	Theoretically the total result should be greater or equal to the dissolved concentration. However the difference reported is within the uncertainty of the individual tests.
S	The mass imbalance was equal to or less than 0.2 milli-equivalents.
T	During Kjeldahl digestion, nitrate (>10mg/L) can oxidise ammonia resulting in a negative TKN interference, which may have occurred for this sample.
U	Theoretically the TKN result should be greater or equal to ammonia concentration. However the difference reported is within the uncertainty of the individual tests.
V	This sample contained significant amounts of sediment which was included in the analysis portion as requested.
SUR	Surrogate recoveries could not be determined due to the dilution required to quantify the analyte.

IS Form 187. (Issue Date - 19/05/03)

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Job Number : 5E3707

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
E2600 pH in Water							
pH	7.4	7.5			101%		
E2430 Conductivity (uS/cm at 25.0 C)							
Electrical Conductivity	303	310	310		101%	102%	
E2770 Kjeldahl Nitrogen in Water							
Kjeldahl Nitrogen	1	1.2			115%		
E25501 Nitrate as N in Water							
NOx	2.00	2.14			107%		
E2640 Total Phosphorus in Water							
Phosphorus	0.40	0.39			97%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = <PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Laboratory Duplicate(s)

Analyte	Dupl A	Dupl B	Average	RPD (%)	Dupl A	Dupl B	Average	RPD (%)
E2640 Total Phosphorus in Water (E227030)								
Phosphorus	1.68	1.55	1.62	8%				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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Job Number : 5E3707

QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
E2430 Conductivity (uS/cm at 25.0 C)						
Electrical Conductivity	5	nd				
E2770 Kjeldahl Nitrogen in Water						
Kjeldahl Nitrogen	0.1	nd				
E25501 Nitrate as N in Water						
NOx	0.02	nd				
E2640 Total Phosphorus in Water						
Phosphorus	0.02	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Matrix Spike(s)

Analyte	Spike Level	Level Detected		Recovery Details			
		Spike 1	Spike 2	Rec 1 (%)	Rec 2 (%)	Average (%)	RPD (%)
E4870 Dissolved Metals in Waters (E227030)							
Arsenic	0.100	0.107		107%			
Cadmium	0.1000	0.094		94%			
Chromium	0.100	0.102		102%			
Copper	0.100	0.097		97%			
Nickel	0.100	0.099		99%			
Lead	0.100	0.094		94%			
Zinc	0.100	0.090		90%			
Selenium	0.100	0.108		108%			
Molybdenum	0.100	0.104		104%			
Vanadium	0.100	0.106		106%			
E4850 Dissolved Mercury in Waters (E227030)							
Mercury	0.010	0.010		100%			

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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Job Number : 5E3707

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
E4870 Dissolved Metals in Waters							
Arsenic	0.100	0.102			102%		
Cadmium	0.1000	0.097			97%		
Chromium	0.100	0.103			103%		
Copper	0.100	0.100			100%		
Nickel	0.100	0.100			100%		
Lead	0.100	0.099			99%		
Zinc	0.100	0.102			102%		
Selenium	0.100	0.104			104%		
Molybdenum	0.100	0.101			101%		
Vanadium	0.100	0.103			103%		
E4850 Dissolved Mercury in Waters							
Mercury	0.010	0.010			100%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = <PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Laboratory Duplicate(s)

Analyte	Dupl A	Dupl B	Average	RPD (%)	Dupl A	Dupl B	Average	RPD (%)
E4870 Dissolved Metals in Waters (E227030)								
Arsenic	0.002	0.001	0.002	66%				
Cadmium	0.0003	0.0003	0.0003	0%				
Chromium	0.001	0.001	0.001	0%				
Copper	0.010	0.010	0.010	0%				
Nickel	0.013	0.013	0.013	0%				
Lead	0.003	0.003	0.003	0%				
Zinc	0.315	0.320	0.318	1%				
Selenium	nd	nd						
Molybdenum	0.020	0.019	0.020	5%				
Vanadium	0.035	0.035	0.035	0%				
E4850 Dissolved Mercury in Waters (E227030)								
Mercury	nd	nd						

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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Job Number : 5E3707

QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
E4870 Dissolved Metals in Waters						
Arsenic	0.001	nd				
Cadmium	0.0001	nd				
Chromium	0.001	nd				
Copper	0.001	nd				
Nickel	0.001	nd				
Lead	0.001	nd				
Zinc	0.002	nd				
Selenium	0.002	nd				
Molybdenum	0.001	nd				
Vanadium	0.001	nd				
E4850 Dissolved Mercury in Waters						
Mercury	0.001	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Matrix Spike(s)

Analyte	Spike Level	Level Detected		Recovery Details			
		Spike 1	Spike 2	Rec 1 (%)	Rec 2 (%)	Average (%)	RPD (%)
E0221 TPH in Water (ug/L) (E227030)							
C15-C28 Fraction	5500	ISM					

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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Job Number : 5E3707

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
E0221 TPH in Water (ug/L)							
C15-C28 Fraction	5500	4770			87%		
E0230 TPH in Water by P&T/GC-MS (ug/L)							
C6-C9 Fraction	200	220			113%		
E0010 BTEX (P&T) in Water (ug/L)							
Benzene	10	10			103%		
Toluene	10	9			93%		
Ethylbenzene	10	8			84%		
m&p-Xylene	20	19			93%		
o-Xylene	10	10			96%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = <PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Laboratory Duplicate(s)

Analyte	Dupl A	Dupl B	Average	RPD (%)	Dupl A	Dupl B	Average	RPD (%)
E0221 TPH in Water (ug/L) (E227030)								
C15-C28 Fraction	ISD	nd						

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
E0221 TPH in Water (ug/L)						
C15-C28 Fraction	100	nd				
E0230 TPH in Water by P&T/GC-MS (ug/L)						
C6-C9 Fraction	20	nd				
E0010 BTEX (P&T) in Water (ug/L)						
Benzene	0.5	nd				
Toluene	1	nd				
Ethylbenzene	1	nd				
m&p-Xylene	2	nd				
o-Xylene	1	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
E0081 OC's & Total PCB's in Water (ug/L)							
HCB							
a-BHC	10	11			107%		
g-BHC	10	11			108%		
Heptachlor	10	10			95%		
Aldrin	10	10			97%		
b-BHC	10	10			101%		
d-BHC	10	12			117%		
Oxychlordane							
Heptachlor epoxide	10	10			98%		
Endosulfan 1	10	10			98%		
Chlordane-Trans	10	10			103%		
Chlordane-Cis	10	10			101%		
trans-Nonachlor							
DDE	20	21			105%		
Dieldrin	10	10			103%		
Endrin	10	10			101%		
DDD	20	21			107%		
Endosulfan 2	10	10			101%		
DDT	20	22			108%		
Endosulfan sulfate	10	10			99%		
Methoxychlor	10	9			94%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = <PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707

QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
E0081 OC's & Total PCB's in Water (ug/L)						
HCB	1	nd				
a-BHC	1	nd				
g-BHC	1	nd				
Heptachlor	1	nd				
Aldrin	1	nd				
b-BHC	1	nd				
d-BHC	1	nd				
Oxychlordane	1	nd				
Heptachlor epoxide	1	nd				
Endosulfan 1	1	nd				
Chlordane-Trans	1	nd				
Chlordane-Cis	1	nd				
trans-Nonachlor	1	nd				
DDE	1	nd				
Dieldrin	1	nd				
Endrin	1	nd				
DDD	1	nd				
Endosulfan 2	1	nd				
DDT	1	nd				
Endosulfan sulfate	1	nd				
Methoxychlor	1	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Amdel Ltd
585 Blackburn Road, Notting Hill Vic 3168
Tel: (03) 9562 5898 Fax (03) 9562 0336

Environmental Analysis Request - Chain of Custody Record

Page 1 of 1

Company: WASTE SOLUTIONS AUSTRALIA	Project Name: Perringa Rd
Address: PO BOX 514, Ashgrove Q 4060	Project Number: A399
	Quote Reference:
	Results Required By:
Contact: 73(2)Irrelevant	Send Results To: 73(2)Irr @ wastesolutions.biz
Telephone (07) 3366 5778	Results to be provided by:
Fax: 3366 7302	Mail [ ] Fax [ ] Email [✓]
Email: 73(2)Irre @ wastesolutions.biz	

	Date Sampled	Time	Sample No	Composite No.	Sample Type - Matrix	Comments#	Composite	pH + EC	Metals (8) Field Filtered	TPH C10–C36	Total N	Total P	OC	PCB	TPH/BTEX	Se, Mo, V
227030	11/10/05	15:00	MW1		water			X	X	X	X	X	X	X		X
031	↓	↓	MW2		"			X	X	X	X	X	X	X		X
032			MW3		"			X	X	X	X	X	X	X		X
033			WDA1		"			■	X	X						X
034			TB		"										X	
035			RIN 1		"				X	X			X	X		X

Totals

Relinquished by: 73(2)Irrelevant — Date/Time: 11/10/05 17:00

Received by: 73(2)Irrelevant — Date/Time: 14/10 1:06pm

Notes: Samples will be kept for 3 months unless otherwise advised.
please provide Field PID Readings where possible.

Special Requirements

Sample Receipt Advice: (Lab Use Only)	
All Samples Received in Good Condition	✓
All Documentation is proper order	✓
Samples received Properly Chilled	✓
Samples Received within Recommended Holding Times	✓
For All Enquiry's please quote Batch No:	5E3707

RECEIVED 14 OCT 2005 5E3707

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~~AMDEL~~ ANALYTICAL SERVICES

FORM NAME: INTERLABORATORY ANALYSIS REQUEST

Known 04/08/05

Document Number: AS-FOR-ADM-042 Document Prepared by: 73(2)Irrelevant Date: 10 Mar 2005

	BRISBANE Fax: (07) 3902 4646	MELBOURNE Fax: (03) 9538 2266	NEWCASTLE Fax: (02) 4902 4899	ADELAIDE Fax: (08) 8234 0355
Dispatching Laboratory:	☑	☐	☐	☐
Receiving Laboratory:	☐	☐	☑	☐

Job No. A399	Account No:	Forwarded Job ☑	*Subcontracted Job ☐

Waste Solutions Aust.

Fax SRA/Samack/Results to:	Client as per COC ☑	Client Services Amdel ☐
Address Report to:	Client as per COC ☑	Client Services Amdel ☐
Address Invoice to:	Client as per COC ☑	Client Services Amdel ☐

Digital Reporting: CSV ☐ SMPRO ☐ MrED ☐ EQUIS ☐

Note - Please tick appropriate boxes above.

Date / Time results required	Shipped Via: AAE.	Date Dispatched
Std	Con Note No: AC025089.	14/10/05.

*Analyses Required: As Per COC.

NOTE: A copy of the clients Chain Of Custody **MUST** be attached to this form.

Samples forwarded (Use client ID) NOTE: This section does not need to be completed when entire Jobs are Forwarded and all samples are listed on the COC.	Containers provided for analysis (please tick)									
	40 mL H_2SO_4 or HCl Preserved Vial	500 or 1000 mL Unpreserved Glass Bottle	500 mL H_2SO_4 Preserved Glass	40 mL Unpreserved Vial – Half Full	1 L Unpreserved Plastic	100 mL HNO_3 - Plastic	100 mL NaOH - Plastic	100 mL H_2SO_4 Preserved Plastic	250 mL Unpreserved Plastic	Other	125 or 250 mL Soil Jar

RECEIVED 14 OCT 2005 5E3707

Name 73(2)Irrelevant Signature: 73(2)Irrelevant Date: 14/10/05.

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ANALYTICAL SERVICES DIVISION
ABN 30 008 127 802
Correspondence to:
PO Box 331
HUNTER REGIONAL MAIL
CENTRE NSW 2310

99 Mitchell Rd
CARDIFF NSW 2285
Telephone: (02) 4902 4800
Facsimile: (02) 4902 4899

CERTIFICATE OF ANALYSIS

Contents :
1. Cover Pages (2)
2. Analysis Report Pages
3. QA/QC Appendix
4. Additional Reports - External (if applicable)
5. Chain of Custody (if applicable)

Report No.	:	5E3707A
Attention	:	73(2)Irrelevant
Client	:	Waste Solutions Australia Pty Ltd
	:	PO Box 514
	:	ASHGROVEQLD 4060
Samples	:	3
Reference/Order	:	A399
Project	:	PERRINGA ROAD
Received Samples	:	14/10/05
Instructions	:	02/11/05
Date Reported	:	04/11/05

PLEASE SEE FOLLOWING PAGES FOR METHOD LISTING AND RESULTS

RESULTS

All samples were analysed as received. This report relates specifically to the samples as received. Results relate to the source material only to the extent that the samples as supplied are truly representative of the sample source. This report replaces any preliminary results issued. Note that for methods indicated with "#", NATA accreditation does not cover the performance of this service. Three significant figures (or 2 for <10PQL) are reported for statistical purposes only. Where "Total" concentrations are reported for organic suites of compounds this is the summation of the individual compounds and the PQL is noted for reporting purposes only. This report has been authorized by the NATA signatories listed in the method descriptions section on the following page.

73(2)Irrelevant
73(2)Irrelevant Ass. Dip. Applied Sc.(Chem.)
Team Leader - Metals

73(2)Irrelevant
73(2)Irrelevant B.Sc.(Chem.)
Senior Chemist - Inorganics

73(2)Irrelevant
73(2)Irrelevant B.Sc.
Team Leader - SVOC

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Report No. : 5E3707A

Please note: Where samples are collected/submitted over several days, the date on which the last samples were analysed or extracted is reported.
Unless Ferrous Iron is determined on site, the possibility of a ferrous-ferric ratio change may occur.

Method	Description	Extracted	Analysed	Authorised
E2530	Total Hardness	03/11/05	03/11/05	DLU 093

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NATA Signatory

Initials	Name	Sections/Methods
73(2)Irrel	73(2)Irrelevant	094, 095, 096
		094, 096
		093, 096
		101, 096
		101, 096
		101, 096
		101, 096
		101, 096, 097, 098

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Job Number : 5E3707A
Client : Waste Solutions Australia Pty Ltd
Reference : A399
Project : PERRINGA ROAD

Analyte	Lab No	E227030	E227031	E227032		
		MW1	MW2	MW3		
	Sample Id	11/10/05	11/10/05	11/10/05		
	PQL					
E2530 Total Hardness						
Total Hardness as CaCO3	0.5	1400	1000	3400		

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW.

Job No. 5E3707A

General

1. Laboratory QA/QC including Method Blanks, Duplicates, Matrix Spikes, Laboratory Control Samples or CRM's are included in this QA/QC appendix. (Where applicable)
2. Inter-Laboratory proficiency trial results are available upon request.
3. PQLs are matrix dependent and are increased accordingly where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spike or surrogate recoveries.
5. Where 3 and 2 significant figures are reported for >10x PQL and <10x PQL respectively, the last figure is uncertain and is provided for statistical purposes only.
6. Samples duplicated or spiked are from this job only and are identified in the following QA/QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered samples, unless noted otherwise.

Maximum Holding Times for Soils, Sediments and Waters

Parameter	Holding Times
Soils	
Volatile and Semi-Volatile Organic Analysis.	Extracted in 14 days, analysed within 40 days.
Metals	Extracted and analysed within 28 days-6 months.
Inorganics*	Extracted and analysed within 7-28 days.
TCLPs*	Extracted and analysed within 14 days, (Zero Headspace-TCLP 7 days).
Waters	
Volatile Organic Analysis	Analysed within 7 days (USEPA requires 14 days).
Semi-Volatile Organic Analysis	Extracted in 7 days, analysed within 40 days.
Inorganics*	Analysed within 24 hrs-28 days.
Metals (dissolved metals should be supplied field filtered)	Prepared and analysed within 28 days.

* Please refer to 'Preservation Information Chart for Soils, Sediments & Waters' for further information. (ISFORM.098). Holding times may be extended with the use of preservation bottles and/or freezing samples. Holding times can be calculated from dates reported in the body of the report. Tests clearly exceeding holding times will be noted when sufficient information is provided.
Reference: USEPA SW846 and AMDEL SPM-01 (incorporating NEPM Guidelines).

Chain of Custody and Sample Integrity	Yes/NO/NA
Chain of Custody / instructions received with samples	Yes
Custody seals were received intact, if used	NA
Samples were received chilled and in good condition	Yes
Samples received appropriately preserved for all tests	Yes
VOC/SVOC samples were received in teflon lined containers	NA
Samples received with Zero Headspace	NA
Chain of Custody completed and attached (if applicable)	Yes

Chromatography Calibration/Acceptence Criteria (if applicable)

Retention time window meets acceptance criteria (+/-2%)	NA
Reference standard meets acceptance criteria (+/-10%)	NA
Recalibration standard meets acceptance criteria (+/-15%)	NA
Internal standard recovery acceptable.	NA

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW Cont..

Amdel QA/QC Compliance Assessment

	Compliance
Surrogates performed on all appropriate GC analyses and meet acceptance limits (70% - 130% recovery*).	Please see body of report
Matrix Spikes performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* or 80% - 120% recovery* for inorganics in water.)	Please see body of report
Laboratory Control samples performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* in soil or 70%-130%/90-110% recovery* for waters.)	Yes
Laboratory Duplicate samples performed once per process batch and at least 1 in 10 samples	Yes
Laboratory duplicates meet acceptance criteria <4 PQL - +/- 2 PQL 4-10 PQL - 25-50 or 50% RPD >10 PQL - 10-30 or 30% RPD	Please see body of report
Method Blanks performed once per process batch and at least 1 in 20 samples (Results not detected at the PQL).	Yes

N/A=Not Applicable.

* Phenols 50% - 130% recovery
* SVOCs 60% - 130% recovery
* Phenoxy Acid Herbicides 60% - 140% recovery

QA/QC Appendix

Please refer to the following pages for the QA/QC data.
For further information on samples or non-conformance in QC protocols please see notations in the body of the report plus comments on the following page.

Additional Comments

73(2)Irrelevant

73(2)Irrelevant

73(2)Irrelevant

73(2)Irrelevant Ass. Dip. Applied Sc.(Chem.)
Team Leader - Metals

73(2)Irrelevant

73(2)Irrelevant B.Sc.(Chem.)
Senior Chemist - Inorganics

73(2)Irrelevant

73(2)Irrelevant B.Sc.
Team Leader - SVOC

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AMDEL STANDARD LABORATORY QUALIFIER CODES.

Job NO. 5E3707A

Qualifier Codes	Description
*	PQLs are raised due to matrix interference.
@	PQLs are raised due to insufficient sample provided for analysis.
$	The mass imbalance indicates the presence of other ions not measured as part of this procedure.
nd	<PQL
--	Not applicable
LNR	The sample was listed on the COC, but not received.
IS	Insufficient sample was supplied to conduct this analysis.
AN	The analysis indicates the presences of an analyte that has been 'tentatively' identified, and the associated numerical value represents it's approximate concentration.
A	Sample results are reported on an 'as received' basis (not moisture corrected).
B	The sample was not received in a suitable timeframe to allow completion within the recommended holding time.
C	This sample was received with headspace.
D	This sample was received with the incorrect preservation for this analysis.
E	The raw data indicates the absence of 0.055g of Copper Sulphate in the sample.
F	This sample contained significant amounts of solids and was therefore analysed by settling and decanting the aqueous phase to avoid including the solid in the analysis portion.
G	This test was performed outside the recommended holding time.
H	This sample contained significant material >5mm which was removed prior to analysis.
ISD	Insufficient sample was supplied to conduct duplicate analyses.
ISM	Insufficient sample was supplied to conduct matrix spike analyses.
W	The spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
J	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause.
K	The matrix spike concentration is less than five times the background concentration in the sample, and therfore the spike recovery can not be determined.
L	The surrogate recovery is outside of the recommended acceptance criteria, due to matrix interference.
M	The surrogate recovery is outside of the recommended acceptance criteria. Insufficent sample remains to perform re-analysis.
N	Results are expressed in mg/L (ppm) due to the high concentration of the analyte.
O	The results reported are 'recoverable organics' for this fraction, as the chromatogram and peak shape indicates the presence of a significant concentration of polar compounds.
P	The concentration reported is mainly due to a single peak.
Q	This samples contains volatile halogenated oxygenated or other compounds that are included and quantitated as part of TPH C6-9.
R	Theoretically the total result should be greater or equal to the dissolved concentration. However the difference reported is within the uncertainty of the individual tests.
S	The mass imbalance was equal to or less than 0.2 milli-equivalents.
T	During Kjeldahl digestion, nitrate (>10mg/L) can oxidise ammonia resulting in a negative TKN interference, which may have occurred for this sample.
U	Theoretically the TKN result should be greater or equal to ammonia concentration. However the difference reported is within the uncertainty of the individual tests.
V	This sample contained significant amounts of sediment which was included in the analysis portion as requested.
SUR	Surrogate recoveries could not be determined due to the dilution required to quantify the analyte.

IS Form 187. (Issue Date - 19/05/03)

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Job Number : 5E3707A

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
E2530 Total Hardness							
Total Hardness as CaCO3	66.2	65			98%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = <PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5E3707A

QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
E2530 Total Hardness						
Total Hardness as CaCO3	0.5	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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NSW Sample Receipt

From: 73(2)Irrelevant @wastesolutions.biz]
Sent: Tuesday, 1 November 2005 5:13 PM
To: NSW Sample Receipt
Cc: 73(2)Irrelevant @wastesolutions.biz; 73(2) @wastesolutions.biz
Subject: additional analysis 5E3707-WSA Job no.399

Good afternoon,

As requested in our telephone conversation this afternoon, please analyse samples MW1, MW2 and MW3 for hardness (Ca:Mg ratio). Please let me know if you have any problems with this additional analysis.

E227030 E227031 E227032

Regards,

73(2)Irrelevant

WASTE SOLUTIONS AUSTRALIA PTY LTD
PO Box 514
(Level 1, 254 Waterworks Road)
Ashgrove Q 4060

Phone: +61 7 3366 5778
Fax: +61 7 3366 7302
Email: wsa@wastesolutions.biz

CONFIDENTIALITY NOTICE: The information contained in and accompanying this communication is confidential and intended solely for the use of the intended recipient/s. If you have received this communication in error or are not the intended recipient, please delete and destroy all copies and notify WSA at wsa@wastesolutions.biz immediately. Any views expressed in this communication are those of the individual sender except where the sender specifically states them to be the views of WSA.



73(2)Irrelevant

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AMDEL LTD

INDUSTRIAL AND ENVIRONMENTAL SERVICES DIVISION

Amdel Limited
Correspondence to:
PO BOX 331
HUNTER REGIONAL MAIL
CENTRE NSW 2310

ABN 38 0081 27 802
99 Mitchell Rd
CARDIFF NSW 2285
Telephone: (02) 4902 4800
Facsimile: (02) 4902 4899

SAMPLE RECEIPT ACKNOWLEDGMENT

TO: Waste Solutions Australia Pty Ltd

ATTN: FAX NO: (07) 3366 7302

FROM: Client Services Cardiff

DATE: 14/10/05 PAGES: 1 of 1

If you have any queries or wish to make any adjustments to analyses performed, please contact this laboratory immediately.

Reference/Order:	A399
Project:	PERRINGA ROAD
Our Reference Number :	5E3707
Date Received by Amdel :	14/10/05

ANALYSIS REQUESTED	AMDEL METHOD CODE	NUMBER OF SAMPLES	ESTIMATED REPORT DATE (COB)
pH	E2600	3	
Conductivity	E2430	3	
Dissolved Metals by ICP-MS	E4870	5	
Mercury	E4850	5	
TPH (C10-C36)	E0221F	5	
Total Nitrogen	E2570	3	
TKN	E2770	3	
NOX	E2551	3	
Phosphorus-Total	E2640	3	
Organochlorine Pesticides and Total PCB E0081		4	
TPH C6-C9 by purge & trap	E0230	1	
BTEX in Water	E0010	3	
Australian GST	GST		

Sample integrity upon receipt

*	Samples were received chilled/chilling (refer to COC for temperature records(if space provided)).	YES
*	Samples received in good condition and appropriately preserved for all tests.	YES
*	VOC/SVOC samples were received in teflon lined lids.	YES
*	VOC samples were received with Zero Headspace.	YES
*	Samples were recieved in sufficient time to allow us to meet holding time requirements.	YES
*	Some analysis has been Subcontracted	NO

** We have received the samples referenced above and they are now being processed in our laboratory. Samples received after 4pm are considered as recieved the next working day for turnaround purposes. Surcharges for urgent turn-around requests may apply.

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UNLESS ADVISED OTHERWISE - Sample analysis will be commenced regardless of integrity issues. Any non-comformance will be recorded on the final report.

ASForm. 223

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ANALYTICAL SERVICES DIVISION
ABN 30 008 127 802
Correspondence to:
1/21 Smallwood Place
MURARRIE QLD 4172
Telephone: (07) 3902 4600
Facsimile: (07) 3902 4646

CERTIFICATE OF ANALYSIS

Contents :
1. Cover Pages (2)
2. Analysis Report Pages
3. QA/QC Appendix
4. Additional Reports - External (if applicable)
5. Chain of Custody (if applicable)

Report No.	:	5B0887
Attention	:	73(2)Irrelevant
Client	:	Waste Solutions Australia Pty Ltd
	:	PO Box 514
	:	ASHGROVEQLD 4060
Samples	:	5
Reference/Order	:	A399
Project	:	
Received Samples	:	07/11/05
Instructions	:	07/11/05
Date Reported	:	08/11/05

PLEASE SEE FOLLOWING PAGES FOR METHOD LISTING AND RESULTS

RESULTS

All samples were analysed as received. This report relates specifically to the samples as received. Results relate to the source material only to the extent that the samples as supplied are truly representative of the sample source. This report replaces any preliminary results issued. Note that for methods indicated with "#", NATA accreditation does not cover the performance of this service. Three significant figures (or 2 for <10PQL) are reported for statistical purposes only. Where "Total" concentrations are reported for organic suites of compounds this is the summation of the individual compounds and the PQL is noted for reporting purposes only. This report has been authorized by NATA signatories for PDF format. Refer to the method descriptions for further information.

73(2)Irrelevant

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Senior Environmental Analyst

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Report No. : 5B0887

Please note: Where samples are collected/submitted over several days, the date on which the last samples were analysed or extracted is reported.
Unless Ferrous Iron is determined on site, the possibility of a ferrous-ferric ratio change may occur.

Method	Description	Extracted	Analysed	Authorised	
M0512A	PAHs-Method 0512-GCMS	08/11/05	08/11/05	EBU	353

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NATA Signatory

Initials	Name	Sections/Methods
73(2)Irre	73(2)Irrelevant	353

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Job Number : 5B0887
Client : Waste Solutions Australia Pty Ltd
Reference : A399
Project :

Analyte	Lab No	BE17728	BE17729	BE17730	BE17731	BE17732
		BH5	BH17	BH20	QA100	TRIPBLANK
	Sample Id	7/11/05	7/11/05	7/11/05	7/11/05	7/11/05
	PQL					
M0512A Priority PAH's in Water (ug/L)						
Naphthalene	1	nd	nd	nd	nd	nd
Acenaphthylene	1	nd	nd	nd	nd	nd
Acenaphthene	1	nd	nd	nd	nd	nd
Fluorene	1	nd	nd	nd	nd	nd
Phenanthrene	1	nd	nd	nd	nd	nd
Anthracene	1	nd	nd	nd	nd	nd
Fluoranthene	1	nd	nd	nd	nd	nd
Pyrene	1	nd	nd	nd	nd	nd
Benzo(a)anthracene	1	nd	nd	nd	nd	nd
Chrysene	1	nd	nd	nd	nd	nd
Benzo(b) & (k)fluoranthene	1	nd	nd	nd	nd	nd
Benzo(a)pyrene	1	nd	nd	nd	nd	nd
Indeno(1.2.3-cd)pyrene	1	nd	nd	nd	nd	nd
Dibenz(a.h)anthracene	1	nd	nd	nd	nd	nd
Benzo(g.h.i)perylene	1	nd	nd	nd	nd	nd
Pyrene-d10- PAH Surrogate	1	71%	95%	99%	94%	101%

PQL = Practical Quantitation Limit
LNR = Samples Listed not Received
nd = <PQL
-- = Not Applicable

Soils : mg/kg (ppm) dry weight unless otherwise specified
Waters : mg/L (ppm) unless otherwise specified in Method Header
Leachates : mg/L (ppm) in leachate unless otherwise specified in Method Header

Refer to Amdel standard laboratory qualifier codes for comments.

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW.

Job No. 5B0887

General

1. Laboratory QA/QC including Method Blanks, Duplicates, Matrix Spikes, Laboratory Control Samples or CRM's are included in this QA/QC appendix. (Where applicable)
2. Inter-Laboratory proficiency trial results are available upon request.
3. PQLs are matrix dependent and are increased accordingly where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spike or surrogate recoveries.
5. Where 3 and 2 significant figures are reported for >10x PQL and <10x PQL respectively, the last figure is uncertain and is provided for statistical purposes only.
6. Samples duplicated or spiked are from this job only and are identified in the following QA/QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered samples, unless noted otherwise.

Maximum Holding Times for Soils, Sediments and Waters

Parameter	Holding Times
Soils	
Volatile and Semi-Volatile Organic Analysis.	Extracted in 14 days, analysed within 40 days.
Metals	Extracted and analysed within 28 days-6 months.
Inorganics*	Extracted and analysed within 7-28 days.
TCLPs*	Extracted and analysed within 14 days, (Zero Headspace-TCLP 7 days).
Waters	
Volatile Organic Analysis	Analysed within 7 days (USEPA requires 14 days).
Semi-Volatile Organic Analysis	Extracted in 7 days, analysed within 40 days.
Inorganics*	Analysed within 24 hrs-28 days.
Metals (dissolved metals should be supplied field filtered)	Prepared and analysed within 28 days.

* Please refer to 'Preservation Information Chart for Soils, Sediments & Waters' for further information. (ISFORM.098). Holding times may be extended with the use of preservation bottles and/or freezing samples. Holding times can be calculated from dates reported in the body of the report. Tests clearly exceeding holding times will be noted when sufficient information is provided.
Reference: USEPA SW846 and AMDEL SPM-01 (incorporating NEPM Guidelines).

Chain of Custody and Sample Integrity

	Yes/No/NA
Chain of Custody / instructions received with samples	Yes
Custody seals were received intact, if used	NA
Samples were received chilled and in good condition	Yes
Samples received appropriately preserved for all tests	Yes
VOC/SVOC samples were received in teflon lined containers	Yes
Samples received with Zero Headspace	Yes
Chain of Custody completed and attached (if applicable)	Yes

Chromatography Calibration/Acceptence Criteria (if applicable)

Retention time window meets acceptance criteria (+/-2%)	Yes
Reference standard meets acceptance criteria (+/-10%)	Yes
Recalibration standard meets acceptance criteria (+/-15%)	Yes
Internal standard recovery acceptable.	Yes

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AMDEL INTERNAL QUALITY ASSURANCE REVIEW Cont..

Amdel QA/QC Compliance Assessment

	Compliance
Surrogates performed on all appropriate GC analyses and meet acceptance limits (70% - 130% recovery*).	Please see body of report
Matrix Spikes performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* or 80% - 120% recovery* for inorganics in water.)	Please see body of report
Laboratory Control samples performed once per process batch and at least 1 in 20 samples (Results meet acceptance limits - 70% - 130% recovery* in soil or 70%-130%/90-110% recovery* for waters.)	Yes
Laboratory Duplicate samples performed once per process batch and at least 1 in 10 samples	Yes
Laboratory duplicates meet acceptance criteria <4 PQL - +/- 2 PQL 4-10 PQL - 25-50 or 50% RPD >10 PQL - 10-30 or 30% RPD	Please see body of report
Method Blanks performed once per process batch and at least 1 in 20 samples (Results not detected at the PQL).	Yes

N/A=Not Applicable.

* Phenols 50% - 130% recovery
* SVOCs 60% - 130% recovery
* Phenoxy Acid Herbicides 60% - 140% recovery

QA/QC Appendix

Please refer to the following pages for the QA/QC data.
For further information on samples or non-conformance in QC protocols please see notations in the body of the report plus comments on the following page.

Additional Comments

73(2)Irrelevant

73(2)Irrelevant

Senior Environmental Analyst

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AMDEL STANDARD LABORATORY QUALIFIER CODES.

Job NO. 5B0887

Qualifier Codes	Description
*	PQLs are raised due to matrix interference.
@	PQLs are raised due to insufficient sample provided for analysis.
$	The mass imbalance indicates the presence of other ions not measured as part of this procedure.
nd	<PQL
--	Not applicable
LNR	The sample was listed on the COC, but not received.
IS	Insufficient sample was supplied to conduct this analysis.
AN	The analysis indicates the presences of an analyte that has been 'tentatively' identified, and the associated numerical value represents it's approximate concentration.
A	Sample results are reported on an 'as received' basis (not moisture corrected).
B	The sample was not received in a suitable timeframe to allow completion within the recommended holding time.
C	This sample was received with headspace.
D	This sample was received with the incorrect preservation for this analysis.
E	The raw data indicates the absence of 0.055g of Copper Sulphate in the sample.
F	This sample contained significant amounts of solids and was therefore analysed by settling and decanting the aqueous phase to avoid including the solid in the analysis portion.
G	This test was performed outside the recommended holding time.
H	This sample contained significant material >5mm which was removed prior to analysis.
ISD	Insufficient sample was supplied to conduct duplicate analyses.
ISM	Insufficient sample was supplied to conduct matrix spike analyses.
W	The spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
J	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause.
K	The matrix spike concentration is less than five times the background concentration in the sample, and therfore the spike recovery can not be determined.
L	The surrogate recovery is outside of the recommended acceptance criteria, due to matrix interference.
M	The surrogate recovery is outside of the recommended acceptance criteria. Insufficent sample remains to perform re-analysis.
N	Results are expressed in mg/L (ppm) due to the high concentration of the analyte.
O	The results reported are 'recoverable organics' for this fraction, as the chromatogram and peak shape indicates the presence of a significant concentration of polar compounds.
P	The concentration reported is mainly due to a single peak.
Q	This samples contains volatile halogenated oxygenated or other compounds that are included and quantitated as part of TPH C6-9.
R	Theoretically the total result should be greater or equal to the dissolved concentration. However the difference reported is within the uncertainty of the individual tests.
S	The mass imbalance was equal to or less than 0.2 milli-equivalents.
T	During Kjeldahl digestion, nitrate (>10mg/L) can oxidise ammonia resulting in a negative TKN interference, which may have occurred for this sample.
U	Theoretically the TKN result should be greater or equal to ammonia concentration. However the difference reported is within the uncertainty of the individual tests.
V	This sample contained significant amounts of sediment which was included in the analysis portion as requested.
SUR	Surrogate recoveries could not be determined due to the dilution required to quantify the analyte.

IS Form 187. (Issue Date - 19/05/03)

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Job Number : 5B0887

QAQC : Laboratory Control Sample(s)

Analyte	Level	Level Detected			Recovery Details		
		Result1	Result2	Result3	Rec 1 (%)	Rec 2 (%)	Rec 3 (%)
M0512A Priority PAH's in Water (ug/L)							
Naphthalene	4.0	3			74%		
Acenaphthylene	4.0	4			91%		
Acenaphthene	4.0	3			87%		
Fluorene	4.0	4			92%		
Phenanthrene	4.0	4			99%		
Anthracene	4.0	3			83%		
Fluoranthene	4.0	4			95%		
Pyrene	4.0	4			93%		
Benzo(a)anthracene	4.0	3			83%		
Chrysene	4.0	4			97%		
Benzo(b) & (k)fluoranthene	8.0	9			117%		
Benzo(a)pyrene	4.0	4			102%		
Indeno(1.2.3-cd)pyrene	4.0	5			120%		
Dibenz(a.h)anthracene	4.0	4			89%		
Benzo(g.h.i)perylene	4.0	4			109%		

PQL = Practical Quantitation Limit
-- = Not Applicable
nd = < PQL

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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Job Number : 5B0887

QAQC : Laboratory Duplicate(s)

Analyte	Dupl A	Dupl B	Average	RPD (%)	Dupl A	Dupl B	Average	RPD (%)
M0512A Priority PAH's in Water (ug/L) (BE17728)								
Naphthalene	nd	nd						
Acenaphthylene	nd	nd						
Acenaphthene	nd	nd						
Fluorene	nd	nd						
Phenanthrene	nd	nd						
Anthracene	nd	nd						
Fluoranthene	nd	nd						
Pyrene	nd	nd						
Benzo(a)anthracene	nd	nd						
Chrysene	nd	nd						
Benzo(b) & (k)fluoranthene	nd	nd						
Benzo(a)pyrene	nd	nd						
Indeno(1.2.3-cd)pyrene	nd	nd						
Dibenz(a.h)anthracene	nd	nd						
Benzo(g.h.i)perylene	nd	nd						

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

The number in brackets after the method header identifies the sample tested.

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Job Number : 5B0887

QAQC : Method Blank(s)

ANALYTE	Sample ID PQL	Blank1	Blank2	Blank3	Blank4	Blank5
M0512A Priority PAH's in Water (ug/L)						
Naphthalene	1	nd				
Acenaphthylene	1	nd				
Acenaphthene	1	nd				
Fluorene	1	nd				
Phenanthrene	1	nd				
Anthracene	1	nd				
Fluoranthene	1	nd				
Pyrene	1	nd				
Benzo(a)anthracene	1	nd				
Chrysene	1	nd				
Benzo(b) & (k)fluoranthene	1	nd				
Benzo(a)pyrene	1	nd				
Indeno(1.2.3-cd)pyrene	1	nd				
Dibenz(a.h)anthracene	1	nd				
Benzo(g.h.i)perylene	1	nd				

PQL = Practical Quantitation Limit
nd = <PQL
-- = Not Applicable

(S) Soils : mg/kg (ppm) dry weight
(W) Waters : mg/L (ppm) unless otherwise specified

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AMDEL LTD

INDUSTRIAL AND ENVIRONMENTAL SERVICES DIVISION

Amdel Limited
Correspondence to:
ABN 38 0081 27 802
1/21 Smallwood Place
MURARRIE QLD 4825
Telephone: (07) 3902 4600
Facsimile: (07) 3902 4646

SAMPLE RECEIPT ACKNOWLEDGMENT

TO: Waste Solutions Australia Pty Ltd

ATTN: 73(2)Irrelevar FAX NO: (07) 3366 7302

FROM: Client Services Murarrie

DATE: 07/11/05 PAGES: 1 of 2

If you have any queries or wish to make any adjustments to analyses performed, please contact this laboratory immediately.

Reference/Order: A399
Project:
Our Reference Number : 5B0887
Date Received by Amdel : 07/11/05

ANALYSIS REQUESTED	AMDEL METHOD CODE	NUMBER OF SAMPLES	ESTIMATED REPORT DATE (COB)
PAHs-Method 0512-GCMS	M0512A	5	
Ammonia as N	E2330	4	___ 1 Working Day
Australian GST	GST		___ 2 Working Days
			3—5 Working Days
			___ Working Days

Sample integrity upon receipt

* Samples were received chilled/chilling (refer to COC for temperature records(if space provided)). (Yes) / No / N/A

* Samples received in good condition and appropriately preserved for all tests. (Yes) / No / N/A

* VOC/SVOC samples were received in teflon lined lids. (Yes) / No / N/A

* VOC samples were received with Zero Headspace. (Yes) / No / N/A

* Samples were recieved in sufficient time to allow us to meet holding time requirements. (Yes) / No / N/A

** We have received the samples referenced above and they are now being processed in our laboratory. Samples received after 4pm are considered as recieved the next working day for turnaround purposes. Surcharges for urgent turn-around requests may apply.

** Clients should be aware that Amdel requires sufficient notice of analytical requirements and timely delivery of samples to satisfy standard holding times.
To ensure holding times are satisfied, notification of analytical intentions must be given at least 6 working hours prior to sample receipt deadlines for samples received on the last day of holding time. Should clients not provide the required information in this timeframe suitably qualified results may still be reported.
Sample receipt deadline for Brisbane is 4pm.

UNLESS ADVISED OTHERWISE - Sample analysis will be commenced regardless of integrity issues. Any non-comformance will be recorded on the final report.

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Amdel Ltd
585 Blackburn Road, Notting Hill Vic 3168
Tel: (03) 9562 5899 Fax (03) 9562 0336

Environmental Analysis Request - Chain of Custody Record

Page...1...of...1.....

Company: WASTE SOLUTIONS AUSTRALIA Pty Ltd.	Project Name:
Address: PO Box 514, Ashgrove Q 4060	Project Number: A399
	Quote Reference: EQ041044 BP
	Results Required By: 48 hr. turnaround 9/11/05
	Send Results To:
Contact: 73(2)Irrelevant	
Telephone 07 33665778	
Fax:	Results to be provided by: Mail ☐ Fax ☐ Email ☑
Email: WSA@WASTESOLUTIONS.BIZ	

Sample description						Analysis Required			
Date Sampled	Time	Sample No	Composite No.	Sample Type - Matrix	Comments*	Composite	PAHs	Ammonia	
	17728	BH5		WATER			✓	✓	
	17729	BH17		WATER			✓	✓	
	17730	BH20		WATER			✓	✓	
	17731	QA100		WATER			✓	✓	
	17732	TRIP BLANK		WATER			✓	✓	
Totals									

RECEIVED 7 NOV 05 SB0887.

Relinquished by: 73(2)Irrelevant	Date/Time:	Special Requirements	Sample Receipt Advice: (Lab Use Only)
Received by: 73(2)Irrelevant	Date/Time: 7/11 11am.		All Samples Received in Good Condition
Notes: Samples will be kept for 3 months unless otherwise advised. # please provide Field PID Readings where possible.			All Documentation in proper order
			Samples received Properly Chilled
			Samples Received within Recommended Holding Times
			For All Enquiry's please quote Batch No:

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FORM NAME: INTERLABORATORY ANALYSIS REQUEST

73(2)Irrelevan 04/08/05

Document Number: AS-FOR-ADM-042 Document Prepared by 73(2)Irrelevant Date: 10 Mar 2005

	BRISBANE Fax: (07) 3902 4646	MELBOURNE Fax: (03) 9538 2266	NEWCASTLE Fax: (02) 4902 4899	ADELAIDE Fax: (08) 8234 0355
Dispatching Laboratory:	☑	☐	☐	☐
Receiving Laboratory:	☐	☑	☐	☐

Job No. SB0887.	Account No:	Forwarded Job ☐	*Subcontracted Job ☑

WSA.

Fax SRA/Samack/Results to:	Client as per COC ☐	Client Services Amdel ☑
Address Report to:	Client as per COC ☐	Client Services Amdel ☑
Address Invoice to:	Client as per COC ☐	Client Services Amdel ☑

Digital Reporting: CSV ☐ SMPRO ☐ MrED ☐ EQUIS ☐

Note - Please tick appropriate boxes above.

Date / Time results required	Shipped Via: AAE	Date Dispatched
24hrs.	Con Note No: AC025557.	07/11/05.

*Analyses Required: Ammonia.

4 x sulfuric acid pres plastic bottles.

NOTE: A copy of the clients Chain Of Custody **MUST** be attached to this form.

Samples forwarded (Use client ID) NOTE: This section does not need to be completed when entire Jobs are Forwarded and all samples are listed on the COC.	Containers provided for analysis (please tick)										
	40 mL H_2SO_4 or HCl Preserved Vial	500 or 1000 mL Unpreserved Glass Bottle	500 mL H_2SO_4 Preserved Glass	40 mL Unpreserved Vial – Half Full	1 L Unpreserved Plastic	100 mL HNO_3 - Plastic	100 mL NaOH - Plastic	100 mL H_2SO_4 Preserved Plastic	250 mL Unpreserved Plastic	Other	125 or 250 mL Soil Jar

AMDQLD Rec:08/11/05
QA100
0512609/004

Name 73(2)Irrelevant Signature 73(2)Irrelevant Date: 07/11/05.

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Amdel Ltd
585 Blackburn Road, Notting Hill Vic 3168
Tel: (03) 9562 5899 Fax (03) 9562 0336

Environmental Analysis Request - Chain of Custody Record

Page...1...of...1.....

Company: WASTE SOLUTIONS AUSTRALIA Pty Ltd.	Project Name:
Address: PO Box 514 ASHGROVE Q 4060	Project Number: A399
	Quote Reference: EQ041044 BP
	Results Required By: 48 hr. turnaround 9/11/05
	Send Results To:
Contact: 73(2)Irrelevant	
Telephone 07 33665778	
Fax:	Results to be provided by:
Email: WSA@WASTESOLUTIONS.biz	Mail ☐ Fax ☐ Email ☑

Sample description						Analysis Required																								
Date Sampled	Time	Sample No	Composite No.	Sample Type - Matrix	Comments*	Composite	PAHs	Ammonia																						
		BH5		WATER			✓	✓																						
		BH17		WATER			✓	✓																						
		BH20		WATER			✓	✓																						
		QA100		WATER			✓	✓																						
		TRIP BLANK		WATER			✓	✓																						
Totals																														

RECEIVED 7 NOV 2005

Relinquished by: 73(2)Irrelevant	Date/Time:
Received By: 73(2)Irrelevant	Date/Time: 7/11 11am.

Notes: Samples will be kept for 3 months unless otherwise advised.
please provide Field PID Readings where possible.

Special Requirements

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition	
All Documentation in proper order	
Samples received Properly Chilled	
Samples Received within Recommended Holding Times	
For All Enquiry's please quote Batch No:	

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REPORT

Explosives
Water & Waste Water
Environmental
Food & Pharmaceuticals
Micro Biological

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www.amdel.com
A subsidiary of the Gribbles Group
A.B.N. 56 625 960 402
585 Blackburn Road Notting Hill,
Victoria, Australia 3168
Telephone (03) 9562 5899 Fax (03) 9562 0336

Analytical Report

AMDEL PHARMACUETICAL QLD.
UNIT 1/21 SMALLWOOD PLACE
MURARRIE

QLD 4172

Contact : 73(2)Irrelevant
Batch Number : **0512609**
Job Ref : **5B0887**
Sample(s) Received : **08/11/2005**
Report No : **154913**

Methods:

240 Ammonia by Distillation/Titration, mg/L

Attached Results Approved by:

73(2)Irrelevant
73(2)Irrelevant
B.App.Sci. (Environmental)
Laboratory Manager

73(2)Irrelevant
73(2)Irrelevant
B.Sc. (Chemistry)
Teamleader - Waters

This Laboratory is accredited by the National Association of Testing Authorities, Australia. The tests reported herin have been performed in accordance with its terms of accreditation.

NATA ENDORSED DOCUMENT

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NATA Accreditation No. 1645 (Chemical Testing) NATA Accreditation No. 14278 (Biological Testing)

**** This is the Final Report which supersedes any reports previously issued relating to the sample(s) included.***

All samples tested as submitted by client.

 # Denotes methods not covered by NATA terms of accreditation

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585 Blackburn Road Notting Hill,
Victoria, Australia 3168
Telephone (03) 9562 5699 Fax (03) 9562 0336

Results

Report No: 154913

	0512609/001 BH5 WATER 7/11/05	0512609/002 BH17 WATER 7/11/05	0512609/003 BH20 WATER 7/11/05	0512609/004 QA100 WATER 7/11/05
AMMONIA by DISTILLATION				
Method: 240 Units: mg N/L				
Ammonia as Nitrogen	16	3.4	1.2	<1.0

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APPENDIX I

HISTORICAL REPORT REVIEW

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Reports and Correspondence Summarised:

The following is a list of reports and correspondence that were reviewed and relate to Lot 2 on RP813014 and Lot 294 on SL8781:

- Preliminary Contamination Assessment, Bulimba 'A' Power Station Site, Murarrie, Queensland. GeoEng Australia Pty Ltd. Report to AUSTA Energy, March 2000.
- Preliminary Groundwater Contamination Assessment, Bulimba 'A' Power Station Site, Murarrie, Queensland. GeoEng Australia Pty Ltd. Report to Queensland Power Trading Corporation, August 2000.
- GeoEng Letter to EPA to address issues raised in EPA Letter of 1 August 2001. 24 August 2001.
- Bulimba 'A' Power Station Site Contamination Assessment, Murarrie, Queensland. GeoEng Australia Pty Ltd, Report 3682/56253/15 November 2001.
- Letter to EPA from Enertrade 30 November 2001.
- Monitoring Results for Bulimba 'A' Power Station, Murarrie. PPK Environment and Infrastructure. Letter report to Enertrade, 10 April 2002.
- Queensland Environmental Protection Agency Notice to Supply Additional Information dated 2 July 2002 ref: BNE3112.
- Methane Assessment - Bulimba 'A' Power Station, Murarrie, Queensland (2002) PPK Environment and Infrastructure. Letter report to Enertrade, 30 August 2002.
- Soil Gas Assessment of Methane Generation at Former Bulimba 'A' Power Station, Murarrie, Queensland (2002). Parsons Brinckerhoff. Letter Report to Enertrade, 28 November 2002.
- Enertrade Letter to EPA dated 14 January 2003.
- Qld EPA Letter BNE3112 dated 26 February 2003.
- Qld EPA Letter dated 16 July 2003. Capping requirements for the former Bulimba 'A' Power Station located on land described as Lot 2 on RP813014 and Lot 294 on SL8781.
- Former Bulimba a Power station, Murarrie. Desktop Geotechnical Study Review (2002) Parsons Brinckerhoff. Report to Enertrade, February 2004.

Summary of GeoEng Preliminary Contamination Assessment March 2000

Preliminary Contamination Assessment, Bulimba 'A' Power Station Site, Murarrie, Queensland. GeoEng Australia Pty Ltd. Report to AUSTA Energy, March 2000.

Report Summary

The site was initially submerged below the high tide level of the Brisbane River and was slowly backfilled and reclaimed with predominantly furnace ash from the power station. A small melting furnace was established to the west of the previously existing workshop/stores building. Scrap lead, copper and brass materials were reportedly melted down into ingots for re-sale. There was unsubstantiated anecdotal advice that some lead and copper ingots may have been buried on site.

A water-abandoned underground fuel storage tank (UST) was reportedly to possibly be present beneath the site.

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During site investigations, asbestos, chromium, copper, lead and hydrocarbons are the prime contaminants. These were detected in soils and/or groundwater samples from the power station building area where demolition wastes were buried. Lead, chromium and copper are all within the power station building area, not the subject site.

The power station (situated off the subject site) was demolished during the period 1978-1981, with large quantities of rubble being buried on site in voids and pits associated with the boiler and turbine buildings, including large quantities of asbestos lagging materials. Other wastes from off-site were also deposited within the building rubble, including reject glass cullet and a large quantity of tainted margarine.

Old site photographs and advice from site members indicated that an underground storage tank(s) (USTs) was used until about 1985 and may have stored diesel and/or petroleum products. A past employee involved in the site supervision of government-owned generating facilities believed that the UST(s) would have been filled with water to remove any residual petroleum products and left in the ground. An old site photograph reportedly appeared to show safety construction barricades set up in the area of the UST(s), which would indicate that the tanks might have been removed or modified. Surface manual excavation of the likely location of the tank(s) covers was unable to unearth any surface fittings associated with the tank(s). The tank fittings may have been removed as part of the decommissioning process. Residual hydrocarbons and lead additives may still be present in the adjacent soil profile.

Elevated hydrocarbon levels were also reported within soils at the power station site. Hydrocarbon contamination in groundwater samples were likely from the dumped margarine.

Anecdotal evidence suggested that a significant amount of asbestos exists within the soils at the power station site.

Groundwater samples collected from the power station building area (off-site) all showed significant contamination with metals.

Summary of Preliminary Groundwater Assessment, August 2000

Preliminary Groundwater Contamination Assessment, Bulimba 'A' Power Station Site, Murarrie, Queensland. GeoEng Australia Pty Ltd. Report to Queensland Power Trading Corporation, August 2000. This is south and adjacent to the subject site.

Nine groundwater wells were analysed for TPH, BTEX and a suite of 8 metals. Dissolved heavy metals were reported to be present at concentrations up to two orders of magnitude above the NEPM EILs.

Groundwater was expected to be flowing from the power station (south of the subject site), in a northerly direction.

Summary of GeoEng Australia Pty Ltd Contaminated Site Assessment Report November 2001

GeoEng Australia Pty Ltd, Bulimba 'A' Power Station Site Contamination Assessment, Murarrie, Queensland Report 3682/56253/15 November 2001.

The report draws the following conclusions:

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The volume of waste has been estimated using historical plans and stated assumptions. The estimated volumes of waste are as follows:

Volume of Void	12,700m^3
Volume of Ash	3,700m^3
Volume of Fill	9,00m^3

Groundwater samples, all collected from off-site wells, show metals concentrations to be below the relevant NEPM EIL criteria for all analytes except Cu and Zn. It is considered that groundwater at the site is a low threat to the environment.

The generation of methane gas from margarine in the off-site fill is considered to be possible, but the production of gas would be very slow and in small quantities.

Off-site soil samples showed concentrations of metals and PAH which were generally less than the NEPM EIL criteria, except one sample containing vanadium. NEPM residential or industrial criteria for levels of vanadium have not been defined.

Summary of Monitoring Results for Bulimba 'A' Power Station, Murarrie. PPK Environment and Infrastructure. 10April 2002

Monitoring Results for Bulimba 'A' Power Station, Murarrie. PPK Environment and Infrastructure. Letter report to Enertrade, 10 April 2002, relating to the power station site, not the subject site.

Nine groundwater wells were constructed and samples by GeoEng in July 2000. A subsequent round of field filtered samples were sampled by GeoEng in October 2001 and reported in November 2001.

Results of recommended groundwater monitoring are summarised below:
Contaminant levels are slightly above NEPM Guidelines for copper, nickel and zinc at some sites, but more significantly above ANZECC 2000 trigger levels for 99% level of species protection.

Summary of Methane Assessment - Bulimba 'A' Power Station, Murarrie, Queensland, 30 August 2002

Methane Assessment - Bulimba 'A' Power Station, Murarrie, Queensland (2002) PPK Environment and Infrastructure. Letter report to Enertrade, 30 August 2002.

Assessment of potential for methane generation from margarine deposited at the former Bulimba 'A' Power Station. In response to a notice to supply additional information from the Queensland EPA (ref: BNE 3112) associated with the site at Lot 2 RP813014 and Lot 294 on SL8781. Investigation works were carried out on Lot 2 on RP813014, adjacent and south of the subject site.

Results

- No detectable methane was recorded in either monitoring wells or vapour probes.
- CO_2 concentrations were measured between 0.3 and 6.5 per cent.
- Oxygen concentrations ranged from 11.9 to 20.6 per cent.

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- Elevated carbon dioxide concentrations around the former recreation room, lunch room and administration building could be present due to either oxidised methane from the margarine deposited at the site or biodegradation from other compounds deposited at the site.
- Elevated CO_2 concentrations (>2.5 per cent) may indicate a steady supply of methane that is being oxidised.

Summary of Soil Gas Assessment of Methane 28 Nov 2002

Soil Gas Assessment of Methane Generation at Former Bulimba 'A' Power Station, Murarrie, Queensland (2002). Parsons Brinckerhoff. Letter Report to Enertrade, 28 November 2002.

Background
Assessment of potential for methane generation from margarine deposited at the Former Bulimba 'A' Power Station. In response to a notice to supply additional information from the Queensland EPA (ref: BNE 3112) associated with the site at Lot 2 RP813014 and Lot 294 on SL8781. All vapour monitoring was carried out south of the subject site. The results of vapour monitoring of groundwater monitoring wells and shallow soil vapour probe holes included:

- No methane was detected in monitoring wells or in soil vapour probes;
- Based upon data recorded, the elevated carbon dioxide concentrations (possibly derived from oxidised methane) have not allowed the potential that methane is being generated at the site to be discounted; and
- However, lack of methane and low carbon dioxide concentrations in near surface environment suggested the current near surface risks from methane generation is low.

Conclusion
Soil gas monitoring conducted in November 2002, indicated that methane impacts to soils are not present at the site. Initial elevated PID readings (320ppm) were recorded in the first monitoring, round, however PID results were not detectable during further monoitoring.

Results suggest that methane generation at the site does not occur at the sample points at no ongoing methane generation was present.

Summary of Qld EPA Letter BNE3112 dated 26 February 2003

No ongoing methane generation was indicated by the most recent soil gas assessment.

Summary Qld EPA Letter dated 16 July 2003

Qld EPA Letter dated 16 July 2003. Capping requirements for the former Bulimba 'A' Power Station located on land described as Lot 2 on RP813014 and Lot 294 on SL8781.

The EPA has determined that there is insufficient data provided to specify capping requirements at this site until proposed future use of land is determined.

Summary of Desktop Geotechnical Study Review, Parsons Brinckerhoff February 2004

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Former Bulimba 'A' Power Station, Murarrie. Desktop Geotechnical Study Review (2002) Parsons Brinckerhoff. Report to Enertrade, February 2004.

Introduction
Parsons Brinckerhoff (PB) was commissioned by Enertrade to conduct a geotechnical review and desktop study of the former Bulimba A Power Station.

Site Background
The former Bulimba A Power Station is located at 55 Paringa Road, Murarrie, Brisbane, Queensland. The site comprised Lot 2 RP813014 and Lot 294 SP135357.

The power station and substation was built in the 1920's on Lot 2 and furnace ash used to reclaim land on Lot 294 as the power station was extended in the 1940's.

A large amount of material was buried on the site in the building voids following the decommissioning of the power station in 1970 and demolition in 1978-1981. The material was reported to include asbestos lagging, glass cullet and dumped tainted margarine.

Following demolition of the power station the site has opertated up to 2001 as chemical, physical testing and analytical laboratories.

During site operation, potentially impacting activities included:
- Ash handling and disposal;
- Melting and metals (copper (Cu), lead (Pb) and brass which comprises Cu/Zn);
- PCB oils from transformers;
- Oil filled cable drums;
- A diesel underground storage tank;
- discharge of chemicals to septic tanks until 1990;
- Boiler refractory materials containing chromium;
- Pesticide use; and
- Asbestos lagging.

Groundwater contaminants
In August 2000, no detectable TPH, BTEX were reported.

In November 2001, filtered samples reported the following elevated levels and uncertainties:
- Detection limits for lead and cadmium in samples GW35, GW36, and GW37 exceeded the criteria;
- Copper concentrations exceeded the guideline of 1.3ug/L;
- Zinc concentrations exceeded the guideline of 15ug/L in all samples;
- Zinc and copper were present in the tap water on site. Therefore, there was uncertainty with respect to the source of reported copper and zinc levels; and
- It is noted that petroleum hydrocarbons were not analysed at all wells and few wells were analysed for polycyclic aromatic hydrocarbons (PAH) or polychlorinated biphenyls (PCB).

Soil contaminants
Voids beneath the former high pressure boiler house and turbine hall were reportedly backfilled with demolition and imported waste following demolition of the site.

The switchyard area was identified as potentially containing PCB.

Previous investigations assessed heavy metal, petroleum hydrocarbons, pesticides and asbestos. One water sample and three soil samples were assessed for PCB. One sample was analysed for PAH.

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Soil results for metals were within the Qld Environmental Protection agency (EPA) environmental investigation levels (EIL) where they exist for the compound. Vanadium and cobalt do not have prescribed Qld EPA EILs. The recorded vanadium concentration of 250mg/kg exceeds the Dutch guidelines of 42mg/kg and the recorded cobalt concentration of 240mg/kg exceeds the Dutch guideline of 9mg/kg. The results are however substantially below the indicator of significant contamination.

Volume of waste material

There is an estimate of 12,700m^3 of voids containing 3,700m^3 of ash and 9,000m^3 of fill.

The northern part of the site (encompassing the Snowday site) is underlain by topsoil/filling/ash overlying alluvium and marine clay to undefined depths that could exceed 20m.

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APPENDIX J

QUALITY ASSURANCE QUALITY CONTROL REVIEW

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55 PARINGA ROAD, MURARRIE, QLD
LABORATORY ANALYTICAL RESULTS QUALITY ASSURANCE

			SOIL									WATER				
Sample Identification			BH10	SQA-4	*RPD*	BH13	SQA2	*RPD*	BH14	SQA-3	*RPD*			MW3/BH5	WQA1	*RPD*
Lab Batch No.			E023976	E023976		E023976	E023976		E023976	E023976				5E3707	5E3707	
Date Sampled			10/10/05	10/10/05		10/10/05	11/10/05		10/10/05	10/10/05				11/10/05	11/10/05	
Depth (m)			1.0-1.5			6.0-6.5	--		1.0-1.5							
	Unit	**LOR**		Duplicate of BH10 1.0-1.5	*Relative Percent Difference*		Dulpicate of BH13 6.0-6.5	*Relative Percent Difference*		Dulpicate of BH14 1.0-1.5	*Relative Percent Difference*	**Unit**	**LOR**		Dulpicate of MW3/BH5	*Relative Percent Difference*
Total Metals																
Arsenic	mg/kg	1	2	5	*85.7*	6	5	*18.2*	5	6	*18.2*	mg/L	0.001	0.003	0.003	*0.0*
Cadmium	mg/kg	0.1	0.2	0.2	*0.0*	0.3	0.2	*40.0*	0.3	2.2	*152.0*	mg/L	0.0001	0.0002	0.0001	*66.7*
Chromium	mg/kg	1	4	8	*66.7*	23	19	*19.0*	8	6	*28.6*	mg/L	0.001	0.002	0.003	*40.0*
Copper	mg/kg	2	37	100	*92.0*	420	180	*80.0*	130	140	*7.4*	mg/L	0.001	0.007	0.002	*111.1*
Lead	mg/kg	2	26	230	*159.4*	390	230	*51.6*	240	300	*22.2*	mg/L	0.001	0.008	0.008	*0*
Nickel	mg/kg	1	13	6	*73.7*	14	16	*13.3*	15	10	*40.0*	mg/L	0.001	0.003	<LOR	*ND*
Zinc	mg/kg	5	24	64	*90.9*	230	120	*62.9*	73	69	*5.6*	mg/L	0.002	0.157	0.095	*49.2*
Selenium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	mg/L	0.002	<LOR	<LOR	*ND*
Molybdenum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	mg/L	0.001	0.013	0.013	*0*
Vanadium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	mg/L	0.001	0.007	0.008	*13.3*
Mercury	mg/kg	0.05	<0.05	0.07	*ND*	0.05	0.08	*46.2*	0.09	0.13	*36.4*	mg/L	0.001	<LOR	<LOR	*ND*
Total Petroleum Hydrocarbons																
C6 - C9 Fraction	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10 - C14 Fraction	mg/kg	50	<50	<50	*ND*	<50	<50	*ND*	<50	<50	*ND*	mg/L	0.02	0.320	0.200	*46.2*
C15 - C28 Fraction	mg/kg	100	<100	<100	*ND*	<100	<100	*ND*	<100	<100	*ND*	mg/L	0.1	<LOR	<LOR	*ND*
C29 - C36 Fraction	mg/kg	100	<100	<100	*ND*	160	210	*27.0*	<100	<100	*ND*	mg/L	0.1	<LOR	<LOR	*ND*
Sum of TPH C10 - C36	mg/kg	--	--	--	--	160	210	*27.0*	--	--	--	mg/L	--	0.320	0.200	*46.2*

Notes
NA = Not analysed
ND = Not determined
LOR = Laboratory limit of reporting
RPD = Relative percent difference

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1 QA/QC REVIEW

1.1 Introduction

The objective of this data assessment is to evaluate and identify quality data for the site assessment works for 55 Paringa Road, Murarrie. This process shall ensure that sample data is of the highest calibre. All laboratory sample and QA/QC data packages have been issued as finalised and checked laboratory reports by the following NATA Registered Laboratories for this project, unless otherwise stated:

Primary Laboratory: Soil: Labmark Pty Ltd, Asquith, NSW.
Water: Amdel Ltd, Brisbane, Murrarie Qld.

1.2 Definitions

This section outlines various definitions, which shall be adopted throughout this assessment report. The following definitions are in accordance with current NEPM (1999), USEPA SW-846 methods (1994) and those that are described by Keith, *Environmental Sampling and Analysis, A Practical Guide* (1991).

The Practical Quantitation Limit 'PQL', Limit of Reporting 'LOR', and Estimated Quantitation Limit 'EQL' all refer to the concentration above which reported results can be expressed with a minimum 95% confidence level. For the purposes of this report, all references to PQL's, LOR's, and EQL's shall be referred to as the laboratory reporting limit and shall all be considered to be equivalent. The laboratory reporting limits are generally set at 2-10 times the SD for the Method Detection Limit 'MDL' for specific analytes.

Users of laboratory data should be aware that values measured at or near the LOR might have two inherent limitations. "The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit", Keith (1991).

Accuracy

The nearness of an averaged result to the true value, where all random errors have been statistically removed. Unless the true value is known, accuracy may take on a meaning equivalent to the term bias due to the existence of systematic errors. Accuracy is measured by percent recovery '%R'. Unless otherwise stated, accuracy data for matrix spike and matrix spike duplicates are expected to vary within the range of:

- General analytes 70-130 %R.
  Accuracy data shall be treated as an estimate or be rejected on the following assessment criteria:
  % Range: - if 10%R < result < 19%R, then treat the result as an estimate value;
  - if < 10% R, then data value should be rejected.

Precision

The degree to which data generated from replicate or repetitive measurements differ from one another due to random errors. Precision is measured using the standard

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deviation 'SD' or Relative Percent Difference '%RPD'. Replicate data existing in the %RPD range presented below shall be accepted as quality data, whereas data outside of the acceptance criteria shall require further discussion.

%RPD Range: -
- if result > 10 x EQL, the maximum of 50% RPD;
- if result 5-10 x EQL, the maximum of 75% RPD; and
- if result < 5 x EQL, the maximum of 100% RPD.

Blanks

Laboratory method and blanks are designed to check for artefacts and interferences during the sampling and analysis stages, which may lead to the reporting of false positive results. In the event that a positive blank is reported for this project, the following remedies shall proceed:

- Laboratory to review data;
- Positive blank results may not be subtracted from sample results;
- No further action necessary if sample results reported less than laboratory reporting limit;
- Analyse additional blanks if taken and within holding times;
- Positive results may be reported if analyte concentrations are significantly greater than the amount reported in the blank (ten times for laboratory reagents such as methylene chloride, chloroform, and acetone etc., and five times for all other analytes). Alternatively, the laboratory LOR may be raised to accommodate blank anomalies provided that regulatory guidelines are not compromised by any adjustment made to the laboratory reporting limit; and
- Professional expertise is used in all cases and may require additional testing to be performed.

Matrix Spikes

Environmental samples are spiked with laboratory grade standards to determine the interactive effects between the sample matrix and the analytes being measured. Matrix Spikes 'MS' are reported as a percent recovery %R, 1 in every 20 samples for this project. Sample batches submitted of less than 20 samples may be reported with an MS spike from another batch.

- Percent Recovery is expressed as: $\%R = \frac{(SSR-SR)}{SA} \times 100$

where: SSR = spiked sample result
SR = sample result (blank)
SA = spike added

Laboratory Duplicates

Laboratory duplicate samples measure precision, which is calculated as standard deviation SD or Relative Percent Difference %RPD. Duplicates are collected in a single sample container in the field and are analysed as two separate extractions, 1 in every 20 samples in the laboratory for this project.

- Relative Percent Difference is expressed as: $\%\ RPD = \frac{(D1-D2)}{(D1+D2)/2} \times 100$

where: D1=sample concentration

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D2=duplicate sample concentration

Laboratory Surrogates
Surrogates are QC monitoring spikes, which are added at the beginning of the sample extraction process in the laboratory where applicable. Surrogates are measured as Percent Recovery %R.

- Percent Recovery is expressed as: $\%R = \frac{(SSR)}{SA} \times 100$

where: SSR = spiked sample result
SA = spike added

Surrogate spike recoveries indicate the presence of sample specific interferences.

Blind Replicate Samples (field duplicates)
Field generated check samples, which measure repeatability over a short time period. Duplicate samples are collected from the same sampling point, removed by a single action, where possible, for blind analysis at the same laboratory (intra-laboratory precision). Blind replicate samples are collected at a rate of 1 duplicate for every 10 primary samples.

Data Set Comparability
The data set comparability concept compares inter-relationships existing between individual data points. For example, inter-relationships exist between samples analysed for BTEX and volatile.

TPH C_6-C_9. Similarly, there is an inter-relationship existing between dissolved metals and total metals in groundwater samples. Data set comparability assesses variations between separate methods or data points as a whole.

1.4 Analytical Procedures
The laboratory selected to provide analytical services for this project was:

- Amdel Laboratories Pty Ltd. Brisbane.

Waste Solutions Australia (WSA) selected these laboratories based on the following criteria:

- NATA registration for routine test methods and commonly encountered sample matrices;
- Qualifications and experience of laboratory staff; and
- Satisfactory compliance to WSA quality objectives for this project.

1.5 Laboratory Methodologies
Laboratory methods used are specified in the laboratory reports in *Appendix G*.

1.6 Data Validation
Data assessment was undertaken on samples documented on the WSA chain of custody forms provided in addition to the laboratory results in *AppendixG*.

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Sample Integrity and Containers
Chain of custody documentation were signed and dated by laboratories stating that all samples were in good order, and were presented in adequate sample containers.

Holding Times
Holding times for analyses undertaken by the selected laboratories were reported by the NATA certified laboratories to be checked and acceptable for the analysis undertaken in all instances.

Matrix Spike and Matrix Spike Duplicates
Laboratory matrix spike QA/QC tests were not carried out on Amdel Report 5E3707, due to insufficient sample.

Labmark matrix spike QA/QC test results were within acceptable levels.

Laboratory Controls
Results of Laboratory Control Samples meet acceptance limits of 70% to 130% recovery in soil.

Laboratory Duplicates
In accordance with the NEPM (1999) guidelines, the laboratories conducted analyses of laboratory duplicates. To assess laboratory precision the relative percent difference was calculated for the duplicate samples. All Reports that carried out laboratory duplicates were found to be acceptable.

Blind Replicate and Field Split Samples

Field Split samples were taken for:
- soil samples BH10 1.0-1.5, BH13 6.0-6.5 and BH14 1.0-1.5; and
- water sample MW3.

Soil sample results were varied and outside the acceptable levels, as detailed in Australian Standards AS4482.1-1997. This is likely due to the heterogeneous nature of the ash fill material.

As per sampling guidelines, duplicate samples are split in the field but are not mixed (homogenised) due to the potential for loss of volatile (and even semi-volatile) compounds.
Coarse or fill materials are not removed from the sample in order to ensure that it remains representative of sub-surface conditions in the field.

The RPD values for these results are also appended in this document.

Blanks
Laboratory test blanks are used to calibrate testing equipment. All laboratory testing is acceptable with an asterisk recording a non-detect.

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2 *Conclusions*

Analytical data reported by the selected laboratory was judged to have met the essential criteria for data quality commissioned by WSA for the assessment of the project. In summary, data assessment examined laboratory results, COC documentation, and field QA/QC. The following comments can be viewed as an overall summary of the quality of the analytical component for this project.

- Sample integrity and container requirements were documented as acceptable.
- Holding time compliances were documented as acceptable.
- Matrix Spikes spike results were generally found to be within acceptable control limits.
- Laboratory duplicate %RPD results were outside the acceptance criteria. However, it is considered that this is due to the heterogeneous nature of the soil and will not affect the overall outcomes of the investigation.
- All laboratory QA/QC method blanks were found to have analytical concentrations below the laboratory detection limits and thus found to be acceptable.

Field replicate RPD values indicated that replicate soil results that varied from acceptable control limits can be attributed to the following:

- known inherently erratic behaviour of some analytes;
- background concentrations of a given analyte within the sample;
- the distribution of the analyte through the sample and physical composition of the sample; and
- analyte degradation, adsorption; and the slight variation in sample depth between the primary and the replicate sample.

In summary, the QA/QC data reported by the selected laboratory for the documented soil samples were assessed to be of sufficient quality to be considered acceptable to comply with the WSA's quality protocols for the project.

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