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Report on
Detailed Site Investigation for Contamination

Proposed Residential Subdivision, Part Lot 1, DP 1180181 and Lot 2, DP 1180181
Flowers Drive, Catherine Hill Bay

Prepared for
Wallalong Land Developments Pty Limited

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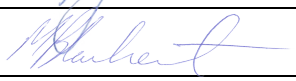
Reviewer		16 April 2019

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Executive Summary

This report presents the results of a detailed site investigation for contamination undertaken for a proposed residential subdivision at Part Lot 1, DP 118081 and Lot 2 DP 118081, Flowers Drive, Catherine Hill Bay. The site is shown on Drawing 1 in Appendix G.

The DSI for the site was undertaken with reference to NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (August 2011) and the National Environment Protection (Site Contamination) Measure 1999 (amended 2013 – NEPM 2013).

Summary of Relevant Previous Investigations
Previous investigation by DP included a site history review, site inspection, systematic sampling across the majority of the site, laboratory analysis and preparation of a report discussing the findings and recommendations for further work. A number of the potential sources of contamination from former site uses were identified including fill materials from unknown sources, oil and grease from the coal mining operations, ash associated with boilers and power generator, asbestos lining from buildings, fences and fly tipping, possible PCBs from the substation and power transformer, herbicides and pesticides associated with spraying the rail corridor and high nutrient run-off from grazed fields and septic tanks.

A total of 48 pits and five boreholes to depths up to 3 m to 7 m respectively, were sampled and analysed as part of the previous investigation on the subject site and encountered filling (generally clay with layers of coal/chitter and some building rubble) to depths ranging from 0.3 m to 3.2 m, overlying predominantly residual clay to depths ranging from 0.4 m to 6 m and sandstone or claystone beneath the residual clay. Water charged filling and alluvial soils were encountered in the northern and eastern parts of Area B and in the southern part of Area A.

Assessment of the presence of combustible material was undertaken during the previous investigation. The results of the assessment indicated that coal reject filling, which was encountered over the majority of the filled area, returned total combustible concentrations above the adopted 40% limit (with results ranging from <5% to about 60%). The report indicated placement of a suitable non-combustible capping over this material may be required to facilitate future development.

DP has also undertaken a number of previous investigations in relation to the mine workings under the site. The previous work allowed delineation of the depth of mine workings across the site, as shown in Figure 7 below. The results of the mine workings investigation may have an impact on the remediation options for contaminated areas of the site, particularly in relation to the suitability of a cap of ‘clean’ material.

Present Investigations
The assessment comprised a review of the existing pertinent information for the site, together with subsurface investigation (57 test pits and bores) and laboratory testing of retrieved samples from the areas of environmental concern identified in the previous investigation as well as systematic sampling across the site to allow further characterisation.

Based on the available site history information and observations made during the investigation, the principal on-site sources of potential contamination were modified to include:

- Imported filling across the site, as encountered in the majority of the investigation locations to depths up to approximately 3 m. It is likely that the majority of the filling is associated with the former coal extraction activities at the site (as encountered in the pits and bores as coal reject). It is noted, however, that some filling may have been sourced from off-site locations (including black slag materials previously identified in the PSI) with unknown origins. Such filling may contain hydrocarbons, asbestos, heavy metals, PCB, pesticides etc depending on the source;
- Coal reject placement on the site, which may contain TRH, BTEX, PAH, heavy metals and may be acidic or acid generating and / or be susceptible to combustion (spontaneous or external ignition);
- Possible presence of asbestos containing materials (ACM) or other hazardous building materials in areas of previous building demolition or during renovations of existing buildings. It is noted that numerous historical buildings and fences (known to be constructed using ACM) were present across the site which have been removed;
- Localised contamination (spills of oil, asbestos, pesticides and ash) associated with the former railway line in addition to general filling;
- Possible localised hydrocarbon impact from drips / spills of previous vehicle movements/servicing or above/in-ground tanks which were present on the site;
- Oil and grease from the former coal mining operations across the site;
- Fuel storage on site during previous operations;
- Ash associated with the former boilers, power generator and locomotives (the location of which is unknown) which may contain metals and PAHs;
- Possible PCBs, hydrocarbons, heavy metals, asbestos from former substations and power transformers;
- Possible pesticide, heavy metal, hydrocarbon impacts from pesticide application;
- Former tunnel entrances and vent shaft which may have been backfilled with contaminated fill and subject to the decommissioning process may be a source of hazardous mine gases including methane;
- Blacksmiths for care of the horses historically used on site, with associated contaminants including metals, PAHs and hydrocarbons;
- Effluent disposal systems, which may export nutrients, microbiological contaminants in additional to metals; and
- Former haul roads, which may include imported filling, asphalt.

Assessment of contamination of the groundwater beneath the site has not been undertaken. It is assumed that a covenant precluding extraction of groundwater at the site would apply to any future development.

A targeted subsurface investigation and sampling programme was undertaken to target these areas of environmental concern. A total of eighty-six (86) soil samples (including 3 duplicates) were submitted to the laboratory for testing for a range of potential contaminants. The results were compared against NEPM for Health Based Investigation / Screening Levels, Ecological Investigation / Screening Levels, Total Petroleum Hydrocarbon Management Limits for a residential land use.

The majority of samples tested were below the relevant criteria for:

- Health investigation and screening levels;
- Ecological investigation and screening levels; and
- Total petroleum hydrocarbon management limits.

A number of exceedances of the adopted site criteria were recorded. The location of the exceedances are shown on Drawings 3 to 5 in Appendix G. The exceedances of the adopted HSLs are located within the filled section of Area B (northern cleared section) and are predominantly related to minor exceedances of the F2 hydrocarbon fraction. The exceedances of the adopted ESLs are more wide spread covering the filled areas of the site and were found for both hydrocarbons and metals, with the metals more contained within the central filled section of Area B, although some isolated exceedances were recorded in filling around the southern area.

The proposed development includes creation of a residential subdivision across the site. Given the exceedances encountered in a number of the pits across the site (ecological investigation levels and health investigation levels) remediation of the impacted areas should be undertaken.

Given the contamination issues identified and the geotechnical constraints regarding combustibility issues and the anticipated bulk earthworks requirements for the proposed development, the impacted areas could be remediated by removal of the affected soils and placement within a designated area elsewhere on the site (i.e. on-site management), which is appropriately capped with VENM / ENM material or permanent pavement/building slabs subject to additional investigation to confirm the leachability characteristics of the soil/fill with elevated contaminant concentrations. Further assessment will be required in the areas identified as having chemical concentrations exceeding the adopted site assessment criteria to identify the extent of the impacted soils, the volume of soil required to be removed to a designated containment area on the site and the leachability characteristics of the material as discussed above. The remainder of the filled area of the site should be capped with clean material (i.e. non-combustible material with chemical contamination concentrations below designated remediation acceptance criteria suitable for residential landuse).

It is noted that previous assessment of the combustibility of the coal reject filling encountered over the majority of the filled area returned total combustible concentrations above the adopted 40% limit (with results ranging from <5% to about 60%). Placement of a suitable non-combustible capping over this material may be required. Furthermore, given the presence of asbestos at the surface of the site, management of the site may include capping with clean (VENM) material.

For preliminary design purposes, and subject to additional analysis, it is suggested that a cap of 1 m thickness is adopted for the impacted areas (i.e. areas with contamination impacted soils and combustible material). It is noted that some of the existing filling may be suitable to act as capping material subject to specific additional investigation during bulk earthworks. In areas of shallow filling (where contamination has not been identified), say less than 0.7 m, it may be possible to blend clean VENM material with the existing filling to form a lower combustibility capping layer.

Prior to development of the remediation action plan (RAP) for the site, it is recommended that additional investigation to assess groundwater and surface water contamination should be undertaken, particularly within the area of the site adjacent to Camp Creek. Further investigation is also recommended to assess the decommissioning undertaken for former mine tunnels and shafts to confirm potential contaminants associated with backfill, potential hazardous mine gases which may be leaking from the former tunnels/shafts and requirements of the mine subsidence board in relation to building over or in the vicinity of these structures. Based on previous experience on similar sites, excavation, installation of a suitable plug, re-compaction of backfill and building exclusion zones may be required in these areas.

Following the additional investigations outlined above, it is recommended that a RAP is prepared for this site to address the identified contaminants, in particular the hydrocarbon, heavy metal and asbestos impacted soils in the filled areas of the site. It is noted that following capping of the site restrictions may be placed on the types of development permissible, such as a restriction of deep rooted plants, limits on excavation in order to maintain the minimum thickness of capping material (unless additional localised remediation is undertaken) and prohibition on groundwater extraction. It is further noted that the appropriate remediation strategy is somewhat dependent on the final layout of the proposed subdivision and hence several iterations of the remediation action plan may be required for this site.

Following additional investigation as discussed above and appropriate remediation of the hydrocarbon, heavy metal and asbestos impacted soils, it is anticipated that the site could be rendered suitable for the proposed residential development. It should be noted that significant areas of the site were inaccessible during the present investigation owing to dense vegetation. Therefore, supplementary investigation should be undertaken within these vegetated areas once clearing of the site has occurred. This is particularly relevant in the eastern part of Area B, where deep filling with significant anthropogenics was present within the pits undertaken in accessible areas. Similarly, significant stockpiles of coal reject and concrete were observed in the dense vegetation within the south-eastern part of Area A.

Due to the previous development history on parts of the site, it is recommended that an unexpected finds protocol is incorporated in conjunction with construction activities during development as a precautionary measure.

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Report on Detailed Site Investigation for Contamination

Proposed Residential Subdivision, Part Lot 1, DP 1180181 and Lot 2, DP 1180181

Flowers Drive, Catherine Hill Bay

1. Introduction

This report presents the results of a detailed site investigation for contamination undertaken for a proposed residential subdivision at Part Lot 1, DP 118081 and Lot 2 DP 118081, Flowers Drive, Catherine Hill Bay. The investigation was commissioned in a signed service order dated 7 September 2018 by Darren Nicholson of Wallalong Land Developments Pty Limited and was undertaken with reference to Douglas Partners Pty Ltd (DP) proposal NCL180191.P.003.Rev0 dated 14 August 2018.

It is understood that the development of the site will include the creation of a future residential subdivision, the layout of which has not been confirmed at this stage, but will include residential allotments together with green space.

The detailed site investigation (DSI) was undertaken to further assess areas of environmental concern identified during the previous preliminary site investigation (PSI) undertaken at the site (Ref 1).

The scope of work for the DSI comprised the following:

- Data review of existing information pertinent to the site;
- Brief supplementary site history;
- Site inspection;
- Underground service checks at proposed test locations;
- Excavation of fifty-seven (57) test pits to depths ranging from 0.25 m to 3.1 m;
- Laboratory testing for a range of potential organic and inorganic contaminants; and
- Preparation of this report.

The DSI for the site was undertaken with reference to NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (August 2011) (Ref 3) and the National Environment Protection (Site Contamination) Measure 1999 (amended 2013 – NEPM 2013) (Ref 4).

For the purposes of the assessment the client supplied several concept layouts for the proposed residential subdivision.

2. Site Identification

This report comprises an assessment of the proposed development areas which are within Part Lot 1, DP 1180181 and Lot 2, DP 1180181, 1A Flowers Drive, Catherine Hill Bay (formerly part of Lot 223, DP110298), within the Lake Macquarie City Council area.

The extent of each of the potential development areas is shown on Figure 1 below. Each area is described as follows:

- Area A (Part Lot 1, DP118081) is located on the eastern side of Flowers Drive with an overall area of about 1.2 ha;
- Area B (Lot 2, DP118081) includes the former Pit E and is situated north of the Middle Camp township on the western side of Flowers Drive. The area has an irregular shape with an overall area of about 20.88 ha.

Figure 1: Identification of Site

Adjacent land use comprises the following:

- North – bushland, upslope of site;
- South – residential adjacent to Flowers Drive and bushland falling to the south from a ridge line which runs along the southern boundary;
- East – residential / cemetery / beach, generally falling to the east;
- West – bushland, upslope of the site.

3. Review of Available Mapping

3.1 Regional Geology

The 1:100,000 scale Newcastle Coalfield Regional Geology map indicates the site is generally underlain by the Triassic Age Narrabeen Group (green areas) and the underlying Permian Age Moon Island Beach Subgroup (purple areas) of the Newcastle Coal Measures, which typically comprise conglomerate, sandstone, siltstone, coal and tuff. A weathered residual soil zone would be expected near the surface, with rock depths generally shallow. On the eastern parts of the site these formations are expected to be overlain by thin Quaternary sandy alluvial deposits (yellow areas). A tongue of alluvial soils is situated across the northern part of Area B, associated with the creek flowing east to Middle Camp Beach. The mapped surface geology is shown in Figure 2.

Figure 2: Extract from 1:100 000 Geological Sheet

3.2 Soil Landscape Mapping

Reference to the soil landscape map for Gosford-Lake Macquarie indicates the soils at the site fall into three typical landscapes as shown in Figure 3 and discussed below.

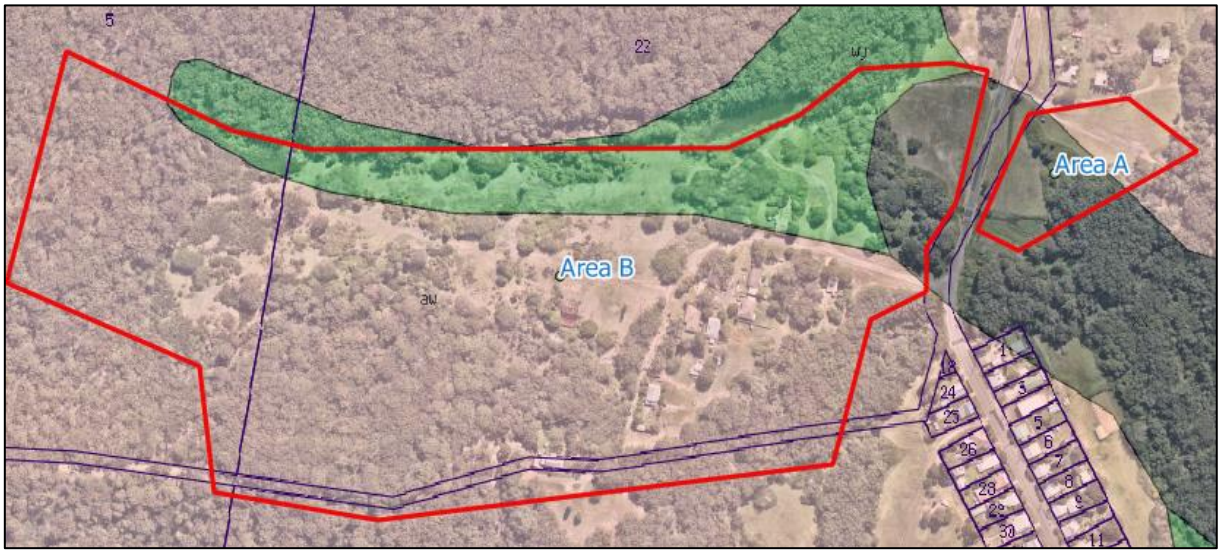

Figure 3: Soil Landscape Mapping

Awaba (pink areas): The majority of the site soils in the areas of Narrabeen Group and Moon Island Beach Subgroup surface geology are mapped as the Awaba Landscape and typical limitations include the following:

- Localised steep slopes with localised mass movements;
- High erosion hazard;
- Strongly acidic.

Wyong (green areas): The alluvial soils are mapped as the Wyong Landscape and typical limitations include the following:

- Seasonal / permanent water logging;
- Foundation hazard;
- Stream bank erosion;
- Acid sulphate potential;
- Strongly acidic; and
- Saline subsoils.

Disturbed (grey areas): The landscape associated with the former mine area known as Pit E in Area B is mapped as a disturbed landscape (described as extensively disturbed by human activity, with landfill including soil, rock building and waste materials). Possible limitations include the following:

- Mass movement hazards;
- Foundation hazard;
- Unconsolidated low wet bearing strength;
- Poor drainage;
- Erosion hazard; and

- Toxic materials.

3.3 Acid Sulfate Soil Mapping

Reference to the Catherine Hill Bay Acid Sulfate Soil Risk Map prepared by the Department of Land & Water Conservation indicates that there is an area mapped as low probability acid sulfate soil within the alluvial soils associated with the creek flowing east to Middle Camp Beach, between 1 m and 3 m below the ground surface (green and orange areas in Figure 4). The acid sulfate soil risk map indicates that there is no known occurrence of acid sulphate soil materials across the remainder of the site.

Figure 4: Acid sulfate soil mapping

3.4 Regional Groundwater Mapping

The groundwater flow regime is probably to the east and north-east of the site, towards Middle Camp Gully (creek) and the Pacific Ocean, which is approximately 0.5 km from the site. Middle Camp Gully is considered to be the nearest sensitive receptor (refer Figure 5).

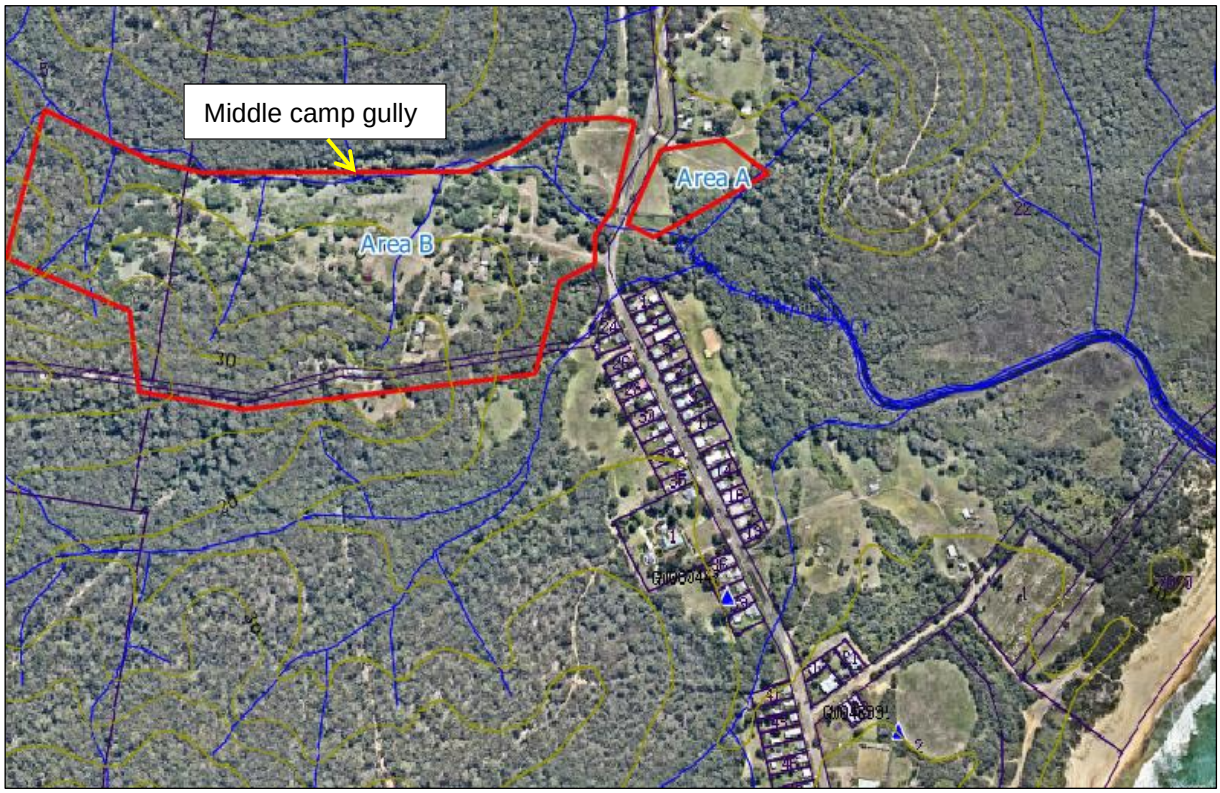

Figure 5: Mapped watercourses (blue) with 10 m contours (orange)

The nearest registered groundwater wells are shown in Figure 5 and are described below:

- GW080447 (N6331601, E371981). Authorised for Domestic and Stock Use. Located south east of the subject site to the west of Flowers Drive. The drillers log indicates the bore was drilled to a depth of 30 m in 2002 with a soil profile (clay, sand, gravel) to 22.3 m underlain by 'coal dust' (assume coal seam) from 22.3 m to termination at 30 m (assume water bearing zone). No details regarding water bearing zones, well installation details or water quality were published; and
- GW048991 (N6331423, E372207) Authorised for Stock and intended for Domestic Use. Located south east of the site to the east of Flowers Drive. The drillers log indicates the bore was drilled to a depth of 36.6 m in 1978 with a soil profile (soil, clay) to 15.8 m underlain by coal, sandstone and shale to termination: A water bearing zone was logged from 30.50 m to 33.60 m depth within Shale, with a static water Level at 9.0 m depth. Salinity was recorded as 'Good'.

The depth to groundwater will vary across the site, ranging from relatively shallow on the eastern parts of the site (alluvial soils), to significant depth on the higher portions of the site such as the Southern Area (residual soils where groundwater is anticipated in the underlying coal seams). A shallow perched groundwater table may also be present at the base of fill materials. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

Review of the digital NSW 10 m contours indicates that the ground surface at the site varies from about RL 40 m in the south-western corner to about RL 5 m adjacent to Middle Camp Gully in the eastern portion of the site.

4. Previous Douglas Partners Reports

Douglas Partners Pty Ltd (DP) has carried out a number of previous contamination investigations which have incorporated the subject site, the most relevant of which are as follows:

- Project 39662C-01 (2007) (Ref 1): Preliminary Contamination and Geotechnical Assessment;
- Project 39662C (2008) (Ref 2): Additional Contamination Assessment and Remediation Requirements.

The previous investigation (Ref 1) included a site history review, site inspection, systematic sampling across the majority of the site to address the potential sources of contamination identified, laboratory analysis and preparation of a report discussing the findings and recommendations for further work.

Details of the site history review and site inspection are included in Section 5, below for completeness. Based on the site history review and site inspection, however, a number of the potential sources of contamination from former site uses were identified including the following:

- Fill materials (source unknown), which may contain a range of contaminants including asbestos, hydrocarbons, heavy metals etc. Filling is present in areas marked as mounded filling and disturbed ground as well as minor filling within cleared or developed areas;
- Oil and grease from the coal mining operations including disturbed and cleared areas;
- Ash associated with boilers and power generator (the location of which is unknown) which may contain dioxins, furons, metals or PAHs;
- Asbestos lining from buildings, fences and fly tipping. This may be present in filling, disturbed ground or cleared areas;
- Possible PCBs from the substation and power transformer;
- Herbicides and pesticides associated with spraying the rail corridor; and
- High nutrient run-off from grazed fields and septic tanks.

A total of 48 pits and five boreholes to depths up to 3 m to 7 m respectively, were sampled and analysed as part of the previous investigation on the subject site.

Based on the 53 test pits and bores undertaken within the subject site, the typical soil profile comprised the following:

FILLING	Generally clay with layers of coal/chitter with some building rubble. The filling was encountered to depths ranging from 0.3 m to 3.2 m.
CLAY	Stiff to very stiff, predominantly residual clay to depths ranging from 0.4 m to 6 m.
SANDSTONE/CLAYSTONE	Encountered below the residual clay and generally extremely low strength.

Groundwater was encountered in some bores / pits from depths of 0.5 m to 2.9 m and was generally encountered within filling (i.e. perched groundwater) with the exception of groundwater encountered with alluvial soils in two pits.

There was no visual or olfactory evidence (ie. staining or odours) to suggest the presence of gross contamination within the soils investigated. Seepage water was observed in some of the pits. There was no visual or olfactory evidence (i.e. staining or odours) to suggest the presence of gross contamination within seepage water.

Assessment of the presence of combustible material was undertaken during the previous investigation. The results of the assessment indicated that coal reject filling, which was encountered over the majority of the filled area returned total combustible concentrations above the adopted 40% limit (with results ranging from <5% to about 60%). The report indicated placement of a suitable non-combustible capping over this material may be required to facilitate future development.

The soil and terrain units across the site were categorised during the previous investigation, as shown in Figure 6 below, with the following terrain units identified:

- Yellow hatched area: alluvial soils;
- Green hatched area: residual soils over bedrock;
- Red hatched area: filling over residual soils; and
- Purple hatched area: filling over alluvial soils.

These preliminary terrain boundaries were based on the previous information and have not been adjusted to account for the subsurface conditions encountered during the present investigation.

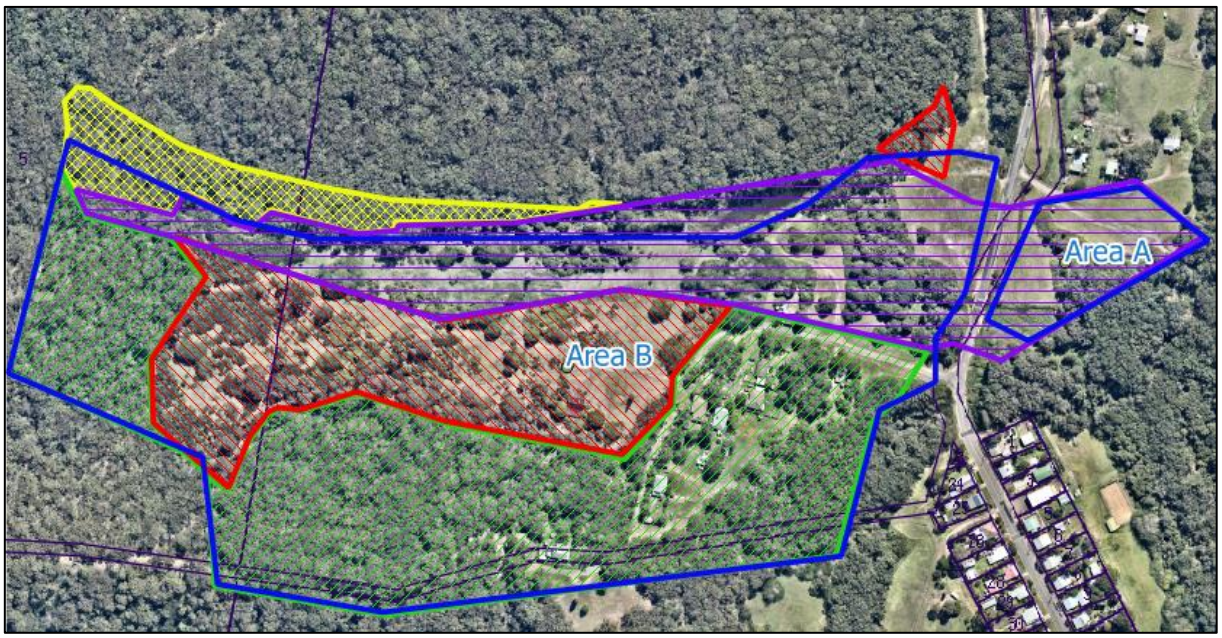

Figure 6: Mapping of anticipated subsurface conditions from previous investigation

DP has also undertaken a number of previous investigations in relation to the mine workings under the site. The previous work allowed delineation of the depth of mine workings across the site, as shown in Figure 7 below. The results of the mine workings investigation may have an impact on the remediation options for contaminated areas of the site, particularly in relation to the suitability of a cap of 'clean' material.

Figure 7: Inferred extent of mine workings (south of green line) and inferred angle of draw of 20 m cover over mine workings through site (blue line)

5. Site History

5.1 Extent of Site History Review

A brief desktop review, including review of aerial photography since the 2007 PSI (Ref 1), was undertaken for the current investigation. The results of the brief review of site history conducted for the PSI (Ref 1) has been included below for completeness.

The review of site history comprised the following:

- Review of interview(s) with former mine manager, Mr Greg Cole-Clark, and local resident and former mine employee, Mr Joe Warren, undertaken during the previous investigation;
- Review of historical aerial photos;
- Lake Macquarie City Council Property Enquiry;
- Historical title deed search; and
- Searches with NSW EPA registers.

Details are presented in the following sections.

5.2 Interviews with Personnel Familiar with the Site

Mr Joe Warren

An interview was conducted on site with Joe Warren on 17 January 2007. Mr Warren indicated that his family had been in Catherine Hill Bay for three generations and had lived there all his life (since 1949). Mr Warren grew up in a house near Pit E, on the northern part of land proposed for development, however never worked from Pit E.

- The former coal mine Pit E was located in Area B, to the west of Flowers Drive;
- Various structures and fences were asbestos and were demolished, however, he cannot remember what was done with the asbestos;
- He did not recall any local refuse tip in the area;
- Coal was stockpiled in various locations in the 1950s due to the low price of coal, mostly either side of Flowers Drive, near Pit E, including the southern parts of Area A;
- He identified the location of various former structures associated with the former Pit E in Area B, including the following, which have been marked on Figure 13, below and Drawing 8 attached:
    - Stables;
    - Stone lined well;
    - Locomotive shed;
    - Electrical transformer;
    - Bathhouse;
    - Rail lines and sidings;
    - Fitters shed.
- The well on site was fed by a pipeline running from a dam to the north of the site;
- There were three coal fired steam locomotives which ran coal to the wharf at the southern end of the ocean beach;
- The bathhouse water ran into the creek;
- The pit was decommissioned in the 1960s. The structures were mostly metal and were taken to the wharf and shipped away for scrap;
- Once the mining operations in Pit E were ceased and the Crangan Bay pit was developed (several kilometres to the west of the site), the screening plant was retained and a bitumen sealed haul road was constructed to bring coal from the Crangan Bay Pit. The coal was then transferred to the wharf via the rail line. The haul road ran from near the former fitters shop, in a south westerly direction to the southern site boundary;
- Site regrading occurred in the 1980s, and comprised reshaping and grassing the surface. Many of the concrete footings were left in place, including the transformer foundations.

Mr Greg Cole-Clark

Greg Cole-Clark was under mine manager at Wallarah Colliery from 1979 to 1980 and from 1989 to 1994 was mine manager at Chain Valley Colliery, while living at Catherine Hill Bay. Mr Cole-Clark indicated the following in January 2007:

- The screening plant at Pit E was no longer present in 1982 on a visit to Catherine Hill Bay;
- There was a water supply pipeline from Moonee Colliery to the south;
- The bath-house probably had an asbestos roof;
- A new substation was constructed to the south of the former pit entries, with power supply coming from underground;

- The site was re-contoured in 1980-81 by Hugh Liddell;
- The fan shaft to the east of the tunnel entries was used for inspections and was probably filled during the early 1980s; and
- The mine entries were probably filled by collapsing the entry and contouring the surface.

5.3 Review of Historical Aerial Photos

During the previous investigations (Ref 1) on the site, a number of historical aerial photos were reviewed and are shown in Table 1 below. A number of recent images since 2006 were reviewed for this present assessment and are discussed below:

Table 1: Aerial Photo Review

Year	Approximate Scale	Black and White / Colour
1955	1:40000	Black and White
1966	1:38000	Black and White
1975	1:40000	Black and White
1984	1:40000	Black and White
1996	1:50000	Colour
2006	1:25000	Colour
2010	Not To Scale	Colour
2016	Not To Scale	Colour
2018	Not To Scale	Colour

The results of the review of the historical aerial photos are discussed below.

1955 Aerial Photograph (Figure 8***)***

- Existing houses present along Flowers Drive;
- Most of existing houses present at south east and east parts of Areas A and B;
- Most houses have fences;
- Pit E infrastructure present including numerous buildings, tracks, cleared areas and railway lines with coal cars evident, as shown in Figure 8 below;
- Creek is close to existing alignment, widened ‘dam’ not evident;
- Quarry evident east of Area A; and
- Dam present to north of Area B.

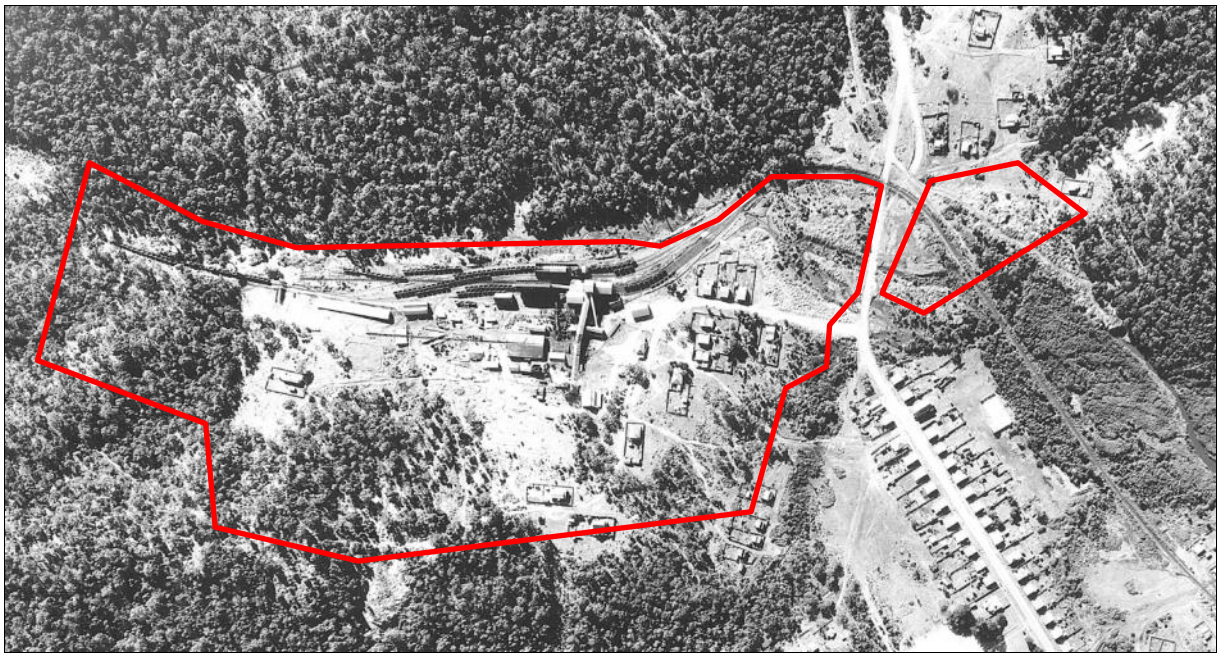

Figure 8: Aerial image from 1955

1966 Aerial Photograph

- Pit E present, but no activity evident (no coal cars);
- Additional area of cleared ground around Pit E, including possible haul roads running up to western boundary;
- Fences around houses are no longer evident; and
- Extensive clearing at quarry east of Area A.

1975 Aerial Photograph

- Possible ponded water in creek alignment at Area A;
- Pit E infrastructure gone; and
- Some regrowth of cleared areas.

1984 Aerial Photograph

- Haul road from former Pit E site to Pacific Highway clearly evident;
- Additional clearing around Pit E Area B; and
- Widening of creek to form 'dam' in Area B evident.

1996 Aerial Photograph

- Area B/Pit E mostly grassed;
- Regrowth of cleared areas.

2006 Aerial Photograph

- No significant changes.

March 2010 Aerial Photograph (refer* Figure 9*)

- No significant changes.

***October 2016 Aerial* Photograph (refer Figure 10)**

- No significant changes.

***December 2018 Aerial* Photograph (refer Figure 11)**

- No significant changes.

Figure 9: Image from March 2010 (approximate outline in red)

Figure 10: Image from October 2016 (approximate outlined in red)

Figure 11: Image from December 2018 (approximate outline in red)

The review of aerial photos was difficult due to the relatively small scale and poor resolutions.

5.4 Lake Macquarie City Council Property Enquiry

A property enquiry in March 2019 for Lots 1 and 2 DP 1180181 on Lake Macquarie City Council's website indicated the following:

- Comprises bush fire prone land;
- Presence of acid sulfate soils (Class 4 and 5);
- Within a coastal zone;
- Within DCP14 Area Plan 11.8 Catherine Hill Bay Heritage Conservation Area;
- Low lying land present; and
- Within Mine Subsidence District.

5.5 Section 149 Planning Certificate

At the time of preparing this report, the Section 10.7 (2 and 5) planning certificate was not available for review.

5.6 Historical Title Search

A historic title deeds search was carried out by Infotrack Pty Ltd, the results of which are provided in Appendix F.

Reference should be made to Figure 12 for the location of the historical lots. The searches indicate that the site has generally been used for mining purposes, before being purchased by the current owner.

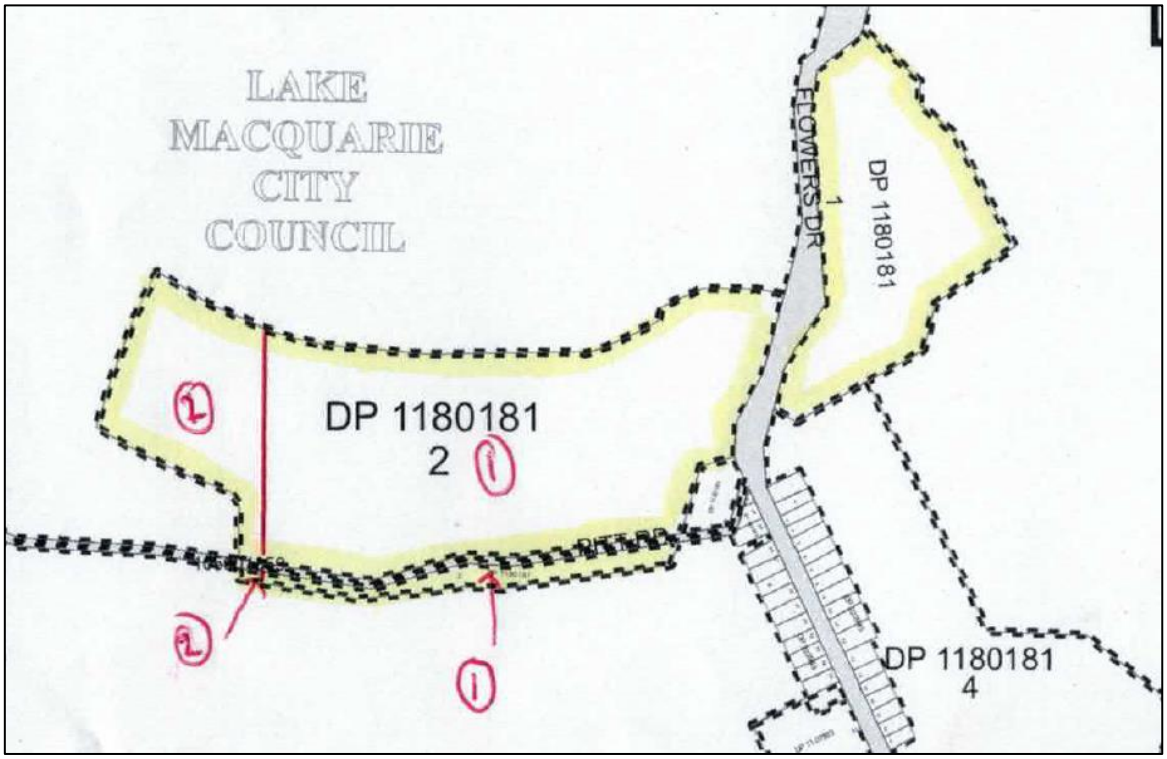

Figure 12: Historical allotment layout

The titles history of the site is presented in Table 2 to 5.

Table 2: Historical Title Search – Lot 1 DP1180181

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available
23.05.1896 (1896 to 1957)	The Wallarah Coal Company Limited
24.01.1957 (1957 to 2009)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited
04.03.2009 (2009 to 2017)	Catherine Hill Bay Land Pty Ltd
31.07.2017 (2017 to date)	# Wallalong Land Developments Pty Limited

# Denotes Current Registered Proprietor

A lease in relation to the Council of the Shire of Lake Macquarie (1934) was found, however the details of the lease were not further investigated.

No easements were found on the property. It is noted, however, that a Telstra service is shown on the Telstra plans to pass through Area B.

Table 3: Historical Title Search – Area Number 1 on Figure 12

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available
23.05.1896 (1896 to 1957)	The Wallarah Coal Company Limited
24.01.1957 (1957 to 2009)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited
04.03.2009 (2009 to 2017)	Catherine Hill Bay Land Pty Ltd

# Denotes Current Registered Proprietor

A lease in relation to the Council of the Shire of Lake Macquarie (1934) was found, however the details of the lease were not further investigated.

No easements were found on the property. It is noted, however, that a Telstra service is shown on the Telstra plans to pass through Area B.

Table 4: Historical Title Search – Part 2 on Figure 12

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available
29.02.1912 (1912 to 1957)	The Wallarah Coal Company Limited
19.08.1957 (1957 to 2017)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited

Table 5: Historical Title Search – Whole of Lot 2 DP 1180181

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available
01.08.2017 (2017 to date)	# Wallalong Land Developments Pty Limited

# Denotes Current Registered Proprietor

No leases were discovered.

An easement 24.04.2013 (D.P. 1180181) Easement for Electricity and other purposes 15 wide and variable was found.

5.7 NSW EPA Search

A review of the NSW EPA contaminated land management register indicated the site and surrounds have no notices issued under the Contaminated Land Management Register.

A review of the list of contaminated sites notified to the NSW EPA indicated the site and immediately surrounding properties were not listed. It is noted that the coal Handling and Preparation Plant, which has the address of 1A Keene Street, Catherine Hill Bay is on the list. This is approximately 2 km to the south of the site but may have been associated with the former mine top facilities (i.e. coal from the site travelled along the former railway to the handling and preparation plant and are considered to pose a low risk of contamination to the site due to the distance from the subject site).

A search of the NSW EPA POEO Public Register indicated that there are no POEO Licences for the site or immediately nearby properties.

5.8 Summary of Site Development

As discussed in the sections above, Pit E of the Wallarah Colliery was situated on the northern part of the site, west of Flowers Drive. Figure 13 shows an aerial photo of the site from 1954, together with key structures, the former railway line and site boundaries. Figure 14 presents an aerial image from 2018 with the former structures (as identified in the 1954 photo) shown. A number of the former site features have been identified from discussions with people familiar with the former site activities (as discussed in Section 5.2) including a local resident, former resident and mine manager.

Infrastructure on the site included the following:

- Pit head with overhead coal stackers;
- Series of rail sidings and a rail line running to the wharf. The extent of the rail lines is shown in yellow. There were four steam locomotives on the site, which were kept in a locomotive shed;
- Horse stables;
- Brick well, which is still present, to the east of the stable sheds;
- Former fitters sheds, shown on Drawing 2;
- Former power transformer, on thick concrete slab. The slab is still present;
- Workshop building with concrete floor and fibro lining, which is still present on the site;
- Bathhouse with coal fired boilers;
- Numerous other unidentified infrastructure;
- Several houses;
- Electrical substation; and
- Former haul roads (refer Drawing 9).

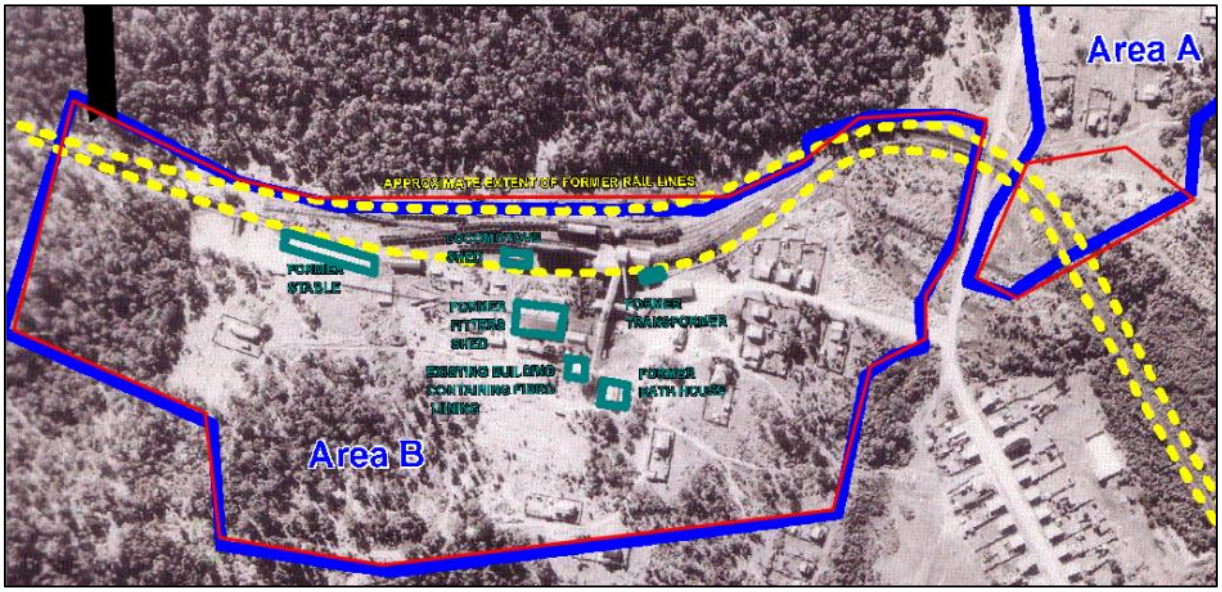

Figure 13: Aerial image from 1954 with key site structures, former railway line and site areas shown

Figure 14: View of site (2018) showing an overlay of the structures visible (black outlines) in the 1954 photo image

Figure 15: 1986 1:4000 Orthophoto showing haul roads

6. Site Condition

Several site walk over surveys were undertaken by a senior engineer over the period extending from December 2018 to March 2019. Photos from the site inspections are provided in Plates A1 to A17 in Appendix B with locations and orientations of the photos shown on Drawing 6 in Appendix G. The following observations were made.

Topography

Area B is the site of the former Pit E, it follows a valley feature which falls to the east. Area A is located on the eastern side of Flowers Drive and includes the lower portions of the gully. Slopes on the north and south sides of the valley are generally in the order of 5° to 15° and locally up to 25° in the south-east corner. Surface levels range from about 40 m AHD in the south-west corner to 4 m AHD along the creek line.

A creek runs along the northern boundary in the western part of the site, with a widening forming a 'dam' feature (Photo 18 in Appendix B), and then heads south east diagonally across the site and passes though culverts below Flowers Drive, continuing to the east.

Vegetation

Most of the site has a locally undulating surface with a grassy ground cover however dense vegetation encroaches onto the western, southern and eastern boundaries of the western parts of the site (Photos 4, 6, 8, 11, 14, 19, 20 and 34 in Appendix B). The western parts, in particular, contain dense weeds, suggesting prior disturbance.

Existing Development

Much of the site, mostly the central western grassed areas, is used for the grazing of horses (Photos 23, 7, 8, 14, 15, 16 in Appendix B).

The south-eastern slopes of the gully contains existing sparse residential development, with bitumen sealed access roads, no kerb and guttering, and single and two storey buildings of varying construction (Photos 21 to 26 in Appendix B). The houses have tank water and septic tanks for sewage disposal (Photo 26 in Appendix B). Some of the grassed areas around the houses had been terraced / regraded.

Former Pit E Site

The former Pit E site is located on the central-western parts of Area B, where the site is mostly grassed. The surface is locally undulating, suggesting a previous disturbance and fill platforms are evident in places. Various concrete footings and slabs are visible across the area, as well as the following features:

- Existing shed (possibly former Bathhouse), with concrete floor, steel external cladding and fibro internal cladding (Photo 1 in Appendix B);
- Buried water pipelines, probably from the Moonee Colliery site to the south;
- Remnant bitumen haul road surface running from near the existing building to the south-west (Photo 3 in Appendix B);
- In filled stone lined well (Photos 8 and 9 in Appendix B);
- Former stable foundations;
- Former footings in the north-central part of Area B (former conveyor?) [Photos 16 in Appendix B];
- Former substation, on elevated concrete platform behind the existing shed; and
- The former railway siding comprising a fill embankment extending into the forested area at the western end of Area B and within the lower sections of Area B (Photos 10 and 12 in Appendix B).

The former pit entries were not visible, however, are believed to be to near the centre of Area B (refer Figure 16). No evidence of the backfill associated with the sealing of the entries was observed during the investigation.

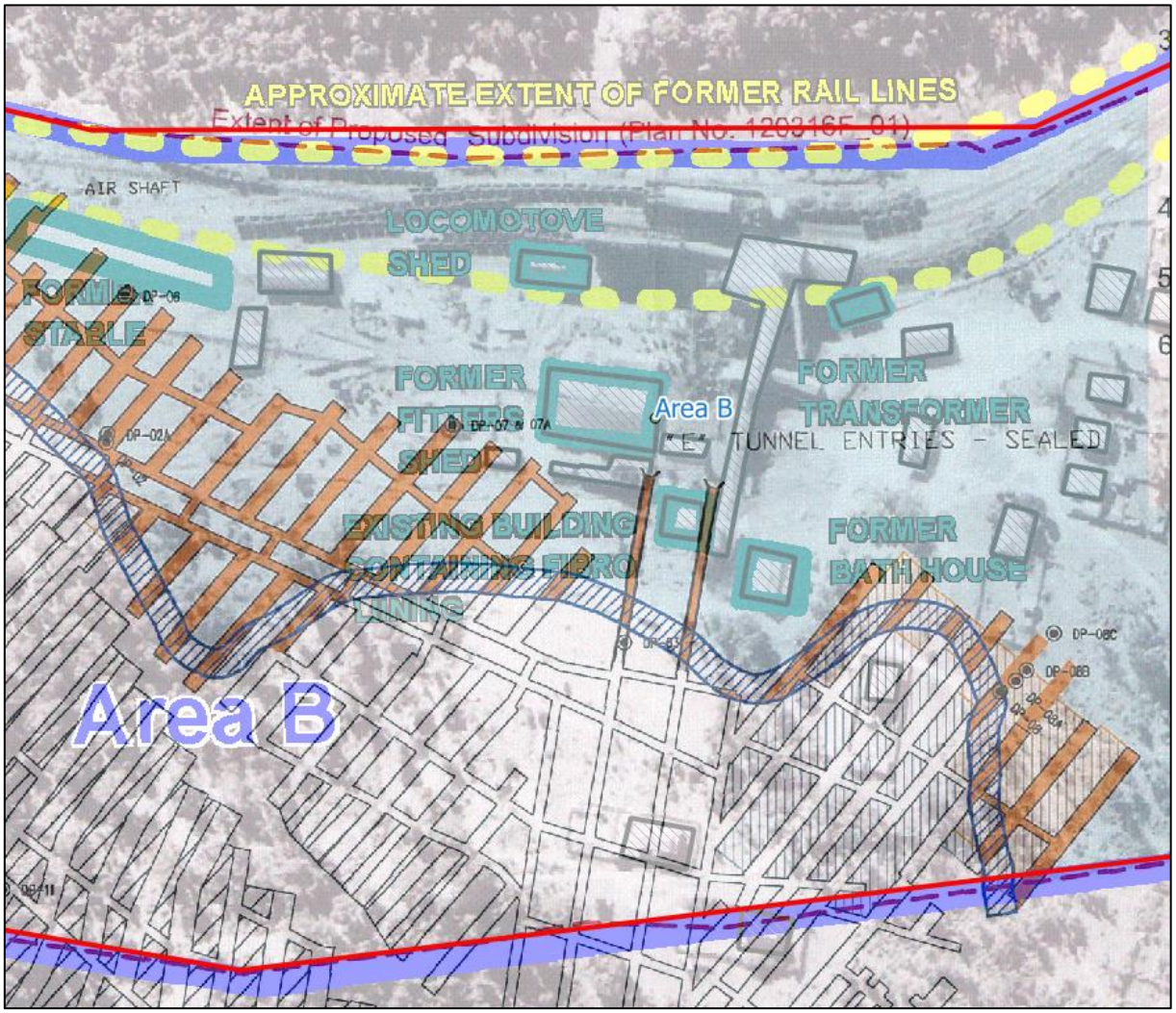

Figure 16: Extract of plan showing location of tunnel entries and upper mine workings overlaid on 1955 aerial photo

Other Features

Other features in Area B include the following:

- Various areas of mounded filling, in particular along the southern boundary (Photo 20 in Appendix B). Where exposed filling was observed to comprise predominantly coal reject;
- Several pothole subsidence features were noted in western parts of the site during the 2007 assessment (Ref 1), including one pothole with overall dimensions of about 8 m by 13 m and 3 to 4 m deep. The exact location of these potholes could not be established during the present investigation but based on previous investigation by DP were located within the far western portion of Area B. It is possible that the potholes were backfilled or overgrown at the time of the present investigation;
- An existing Telstra service crosses the central to eastern area of Area B, roughly in a north-south alignment (refer Photo 17 in Appendix B);

Area A

Area A, located to the east of Flowers Drive, was generally a grassed area (Photos 30 to 32), which falls to the south-east. Signs of previous terracing were observed in the central area of the site. Mounds of coal reject, along with concrete blocks (Photos 33 & 34) were observed in the south-eastern corner of the site.

7. Potential Contaminants

Based on the available site history information and observations made during the site inspection, the principal on-site sources of potential contamination are considered to be:

- Imported filling across the site, as encountered in the majority of the investigation locations to depths up to approximately 3 m. It is likely that the majority of the filling is associated with the former coal extraction activities at the site (as encountered in the pits and bores as coal reject). It is noted, however, that some filling may have been sourced from off-site locations (including black slag materials previously identified in the PSI) with unknown origins. Such filling may contain hydrocarbons, asbestos, heavy metals, PCB, pesticides etc depending on the source;
- Coal reject placement on the site, which may contain TRH, BTEX, PAH, heavy metals and may be acidic or acid generating and / or be susceptible to combustion (spontaneous or external ignition);
- Possible presence of asbestos containing materials (ACM) or other hazardous building materials in areas of previous building demolition or during renovations of existing buildings. It is noted that numerous historical buildings and fences (known to be constructed using ACM) were present across the site which have been removed;
- Localised contamination (spills of oil, asbestos, pesticides and ash) associated with the former railway line in addition to general filling;
- Possible localised hydrocarbon impact from drips / spills of previous vehicle movements/servicing or above/in-ground tanks which were present on the site;
- Oil and grease from the former coal mining operations across the site;
- Fuel storage on site during previous operations;
- Ash associated with the former boilers, power generator and locomotives (the location of which is unknown) which may contain metals and PAHs;
- Possible PCBs, hydrocarbons, heavy metals, asbestos from former substations and power transformers;
- Possible pesticide, heavy metal, hydrocarbon impacts from pesticide application;
- Former tunnel entrances and vent shaft which may have been backfilled with contaminated fill and subject to the decommissioning process may be a source of hazardous mine gases including methane;
- Blacksmiths for care of the horses historically used on site, with associated contaminants including metals, PAHs and hydrocarbons;

- Effluent disposal systems, which may export nutrients, microbiological contaminants in additional to metals; and
- Former haul roads, which may include imported filling, asphalt.

Assessment of contamination of the groundwater beneath the site has not been undertaken. It is assumed that a covenant precluding extraction of groundwater at the site would apply to any future development.

The risk of gross contamination from off-site land uses is considered to be low due to the local topography and the neighbouring bushland.

8. Conceptual Site Model

A Conceptual Site Model (CSM) has been prepared for the investigation area with reference to the National Environment Protection (Assessment of Site Contamination) Measure 1999 amended 2013 (NEPC 2013) Schedule B2 (Ref 4). The CSM identifies potential contaminant sources and contaminants of concern, contaminant release mechanisms, exposure pathways and potential receptors.

Table 6: Conceptual Site Model

Known and Potential Primary Sources	Primary Release Mechanism	Secondary Release Mechanism	Potential Impacted Media	Contaminants of Concern	Exposure Pathway	Potential Receptors	
						Current	Future
Imported filling within the site, including within haul roads	Placement of filling on-site	Long-term leaching of contaminants via runoff, rain water infiltration / percolation or exposure/disturbance during proposed development	Soil, groundwater, surface water	TRH, BTEX, PAH, Metals, Pesticides, PCB, asbestos	Dermal contact, inhalation (dust/vapours), ingestion	Residents and site users, site workers, Consultants, trespassers, surface water bodies, groundwater, neighbouring properties	Potential residents and site users, site workers, maintenance workers, construction workers, consultants, trespassers, surface water bodies, neighbouring properties, groundwater
Coal reject or ash placement on site	Placement of filling on-site from former mining activities	Long-term leaching of contaminants via runoff, rain water infiltration / percolation or exposure/disturbance during proposed development	Soil, groundwater, surface water	TRH, BTEX, PAH, Metals, acids	Dermal contact, inhalation (dust/vapours), ingestion		
Vehicle/equipment servicing and storage oil/fuel drums	Spills and leaks, hydrocarbon sources	Long-term leaching of contaminants via runoff, rain water infiltration / percolation through soil or exposure/disturbance during proposed development	Soil, groundwater, surface water	TRH, BTEX, PAH, Metals	Dermal contact, inhalation (dust/vapours), ingestion		
Hazardous building materials, including asbestos from former buildings / fences	Demolishing old buildings / fences	Exposure/disturbance during proposed development	Soil	Asbestos, PCB, metals	Inhalation (dust/vapours)		
Localised contamination along former railway line	Spills and leaks, possible discharge on to site	Long-term leaching of contaminants via runoff, rain water infiltration / percolation through soil or exposure/disturbance during proposed development	Soil, groundwater, surface water	Oils, Asbestos, Pesticides, PAH	Dermal contact, inhalation (dust/vapours), ingestion		
Grease/ Oil traps	Spills and leaks, possible discharge/migration on to site			TRH, BTEX, PAH, Metals			
Fuel Storage Tank/s	Spills and leaks/ Migration from nearby sites			TRH, BTEX, PAH, Metals			
Possible pesticide use	Spraying of weeds/pests and/or spills/leaks from stored pesticides			OCP, OPP, TRH, PAH, Metals			
Former substation and power transformers	Spills and leaks, possible discharge on to site			PCB, TRH, BTEX, Metals, Asbestos			
Blacksmiths	Spills and leaks, possible discharge/migration on to site			Metals, PAHs and hydrocarbons			
Effluent Disposal Areas	Spills and leaks, possible discharge on to site			Nutrients, Metals,			

Notes to Table 6

Heavy Metals = Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Iron and Manganese

TRH = Total recoverable hydrocarbons, BTEX – Benzene, Toluene, Ethyl Benzene and Xylene

PAH = Polycyclic Aromatic Hydrocarbons, PCB = Polychlorinated Biphenyls

OCP = Organochlorine Pesticides OPP = Organophosphorus Pesticides

9. Field Work

9.1 Field Work Methods

The field work was undertaken over the period extending from 27 November 2018 to 5 December 2018 and consisted of the following:

- Excavation of fifty-seven (57) test pits and bores (designated Pits/Bores 1001 to 1057);
- The pits were excavated using a 5 tonne excavator and were taken to depths ranging from 0.25 m to 3.1 m;
- Test bores using hand auger tools were used at locations inaccessible to the excavator;
- Dynamic penetrometer testing (DPT) in the majority of the pits; and
- Collection of soil samples for laboratory testing.

The test locations from the current and previous investigations are shown on Drawing 1 in Appendix G.

The field work, logging and sampling was undertaken by geo-environmental engineers from DP.

The locations of the pits were recorded using a differential GPS unit which can be accurate to about ± 1 m depending on satellite coverage. It is noted, however, that DP are not registered surveyors and therefore the recorded positions of the pits should be considered approximate only.

9.2 Contamination Sampling and Investigation

9.2.1 Sampling Rationale

Potential sources of site contamination identified in the CSM included imported filling (source unknown), asbestos, heavy metals, hydrocarbons and pesticides.

A judgemental sampling procedure was conducted for the investigation to provide a broad coverage of the site (filled and residual areas) and provide an assessment of the main above-mentioned potential contamination issues within the areas of environmental concern. Table 7, below, outlines the adopted sampling and testing plan for the investigation.

DP has carried out a PSI for the site, which covered Areas A and B. The results of the investigation indicated that detailed investigation was required, particularly in areas of former filling associated with the historical mine top facilities (former colliery).

The investigation indicated that there was an absence of gross contamination in Area A. Within Area B black slag was encountered in several of the pits, elevated levels of Metals, TRH, PAH and Benzo(a)pyrene were encountered within Area B, along with bonded asbestos on the ground surface around the previous buildings and within localised filling.

The aim of the DSI was to further characterise the site and identify areas where contaminant concentrations are above the adopted residential land use criteria. The additional testing would also assist in the delineation and assessment of the filling for re-use within a blended capping layer over the carbonaceous material.

DP has previously carried out 53 pits within Areas A and B. An additional 57 pits and bores were undertaken for the current investigation across Area B and the filled southern part of Area A to increase the sampling density.

Soil samples were selected for analysis on the basis of the likely presence of contamination, based on material type, visual or olfactory evidence of possible contamination (i.e. odour or staining), proximity to a known source of contamination, and whether generally representative of soil/fill conditions.

Table 7: Adopted Sampling and Test Plan

Identified Area of Environmental Concern	Approximate Area (ha)	Analytes	Methodology	Number of sampling locations	Pits/Bores
Previous Investigation					
DP - Areas A and B				53	1 to 44, 65 to 68, 101 to 103, 107 and 108
Present Investigation					
Former colliery footprint (filled area and former structures) – imported filling, hydrocarbon impact from drips / spills / leaks, asbestos from demolition of former buildings	9.6	TRH, BTEX, PAH, Metals, OCP and OPP, asbestos	Pits	34	1011 to 1043 and 1054
Filled area in eastern part of Area B and southern part of Area A – imported filling, hydrocarbon impact from drips / spills / leaks	2.8	TRH, BTEX, PAH, Metals, OCP and OPP, asbestos	Pits	13	1001 to 1010, 1051 to 1053
Residual Areas of the site – imported filling, hydrocarbon impact from drips / spills / leaks, asbestos from demolition of former buildings	10.3	TRH, BTEX, PAH, Metals, OCP and OPP, asbestos	Pits	10	1044 to 1050, 1055 to 1057

Notes to Table 7

Heavy Metals = Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc and Manganese

TRH = Total recoverable hydrocarbons, BTEXn – Benzene, Toluene, Ethyl Benzene, Xylene and Naphthalene

PAH = Polycyclic aromatic Hydrocarbons, PCB = Polychlorinated Biphenyls

OCP = Organochlorine Pesticides OPP = Organophosphorus Pesticides

Areas A and B cover approximately 22 hectares, of which about 12 hectares comprised bulk filling. Reference to the NSW EPA sampling design guidelines indicate that for a 12 hectare area, approximately 120 to 130 sampling locations would be required to characterise the site. The combined investigations have included 118 pits within the former filled areas and an additional 10 pits within the residual areas of the site, together with over 20 test bores carried out for other investigation purposes. Therefore, it is considered that the density of testing undertaken is appropriate for characterisation of the site.

The sampling locations were selected based on a review of the previous investigation locations, the former structures and the potential contaminating activities, as outlined in Section 7. Drawing 9 in Appendix G shows the sampling locations with respect to the former structures on the site.

Sampling of the surface soils and any material present on the ground surface within and around the footprint of the former buildings (as shown on the 1955 aerial photo) was undertaken to assess for the presence of asbestos. The location of the surface samples and also the former structures is shown on Drawing 7 in Appendix G.

9.2.2 Sampling Methods

Soil samples for contamination testing were collected with reference to environmental sampling protocols and soils samples were generally collected from the near surface and at regular depth intervals or changes in strata within each pit. Soil samples were collected directly from the side walls of the test pits or from the excavator bucket using disposable gloves. Care was taken to remove any extraneous material deposited on the sample.

The general sampling procedure comprised:

- Decontamination of all sampling equipment (where used) using a 3% solution of phosphate free detergent (Decon 90) and tap water prior to collecting each sample;
- The use of new disposable gloves for each sampling event;
- Transfer of samples into laboratory-prepared jars and capping immediately;
- Collection of replicate samples for Quality Assurance / Quality Control (QA / QC) purposes;
- Collection of replicate soil samples in zip-lock plastic bags at each depth for Photo-ionisation Detector (PID) screening;
- Labelling of sample containers with individual and unique identification, including project number, sample location and sample depth;
- Placement of the sample jars and replicate sample bags into a cooled, insulated and sealed container with ice for transport to the laboratory; and
- Use of chain of custody (C-O-C) documentation ensuring that sample tracking and custody could be cross-checked at any point in the transfer of samples from the field to the laboratory. Copies of the completed forms are provided in Appendix E.

Replicate samples collected in zip-lock bags were screened for the presence of volatile organic compounds (VOCs) using a calibrated MiniRAE Lite PID, with a 10.6 eV lamp, calibrated to 100 ppm Isobutylene.

9.2.3 Asbestos Soil and Material Testing

All sampling was undertaken with reference to DP's field procedures HAZSAMP. The sampling tools were decontaminated prior to collecting each sample in accordance with DP's field procedures HAZDEC. The collected material samples were recorded, placed in sealed, labelled plastic bags and sent to a laboratory NATA accredited to ISO / IEC 17025 for the scientific identification methods of analysis employed.

The sampling data was recorded on DP chain of custody sheets as described in Section 9.2.5.

9.2.4 Data Quality Objectives (DQOs)

The scope of the PSI was devised generally in accordance with the seven step data quality objective (DQO) process, as documented in Appendix C, Schedule B2, National Environmental Protection Council (NEPC) National Environmental Protection (Assessment of Site Contamination) Measure 2013 (NEPC 2013). The DQO process is outlined in Table 8.

Table 8: Data Quality Objectives

DQO	Achievement Evaluation Procedure
Step 1 – State the problem	Possible presence, extent and level of contamination, as described in Sections 2, 7 and 8.
Step 2 – Identify the decision	Assess whether the site is suitable for the intended land use from a contamination perspective. Refer Section 11 for adopted site assessment criteria.
Step 3 - Identify the inputs to the decision	Site history review from previous investigation, supplemented during the present investigation (refer Section 5). Selection of appropriate contaminants of concern (refer Section 7). Field and laboratory QA/QC data to assess the suitability of the environmental data for the assessment.
Step 4 – Define the Boundary of the Assessment	As defined in Section 2 and shown on Drawing 1.
Step 5 – Develop of decision rule	Selected soil samples were analysed for the contaminants of concern as outlined in Section 7. The field and laboratory data was assessed as reliable by reference to the Data Quality Indicators (DQI) as outlined in Step 7.
Step 6 – Specify the acceptance criteria	The site assessment criteria was developed through reference to NEPC 2013. The acceptance limits for laboratory QA/QC parameters were based on the laboratory reported acceptance limits and those stated in NEPC 2013.
Step 7 – Optimise the design for obtaining data	Design was optimised by the development of a plan for sample collection, handling and analysis, including undertaking quality assurance and quality control measures to allow assessment of the suitability of the data collected. Measurement to assess the project DQOs using data quality indicators (DQIs) as follows: **Completeness** – completion of field and laboratory chain of custody documentation, use of experienced field staff, compliance with holding times and documentation correct. **Comparability** – consistent sampling procedures, use of NATA certified laboratory and experienced field staff. **Representativeness** – appropriate media sampled. **Precision** - Analysis of field and laboratory replicates and achievement of acceptable RPDs, acceptable levels for laboratory QC criteria. **Accuracy** – Analysis of field duplicates, matrix spikes and surrogate spikes.

9.2.5 Field QA / QC

Quality assurance (QA) and quality control (QC) procedures were adopted throughout the field sampling programme and comprised the following:

- Analysis of three field replicate samples;
- Following standard operating procedures;
- Storage of samples under secure, temperature controlled conditions; and
- Use of chain of custody documentation for the handling, transport and delivery of samples to the selected laboratory.

9.2.6 Laboratory QA/QC

The NATA accredited chemical laboratories undertook in-house QA/QC procedures involving the routine testing of:

- Reagent blanks;
- Spike recovery analysis;
- Laboratory duplicate analysis;
- Analysis of control standards;
- Calibration standards and blanks; and
- Statistical analysis of QC data.

9.3 Field Work Results

9.3.1 Subsurface Conditions

The test pit and borehole logs from the present investigation are provided in Appendix C which should be read in conjunction with the accompanying explanatory notes that define classification methods and terms used to describe the soils. The geotechnical subsurface conditions are summarised in Table 9 below. Photos of the test pits as well as the test pit/bore locations are provided in Plates 1 to 29 in Appendix C.

Table 9: Identified Subsurface Soil Units

Unit	Unit Name	Description
1.1	Sandy Gravel Filling	FILL: SANDY GRAVEL or SANDY CLAY with some cobbles and boulders (gravel generally sandstone) – generally brown or grey in colour
1.2	Coal Reject Filling	FILL: predominantly Clayey gravel or sandy gravel and comprising coal rejects – dark grey or black in colour
2.1	Alluvial Silt or Sand	SANDY SILT or GRAVELLY SANDY SILT: Pale grey to grey in colour
2.2	Residual Clay	SANDY CLAY: Stiff or stronger, orange brown in colour, occasionally with a thin sandy silt or gravelly silt layer above (possibly former topsoil)
3	Weathered Sandstone	SANDSTONE: Completely weathered to very low strength, orange brown sandstone

The depth to each of these identified subsurface soils units as encountered in the pits during the present and previous investigations are presented in the following tables:

- Table 10: Summary of Depth to Base of each Unit (present investigation); and
- Table 11: Summary of Depth to Base of each Unit (previous investigation).

Table 10: Summary of Depth to Base of each Unit (Present Investigation)

Pit/Bore	Area	Depth to base of unit (m)				
		Unit 1.1 (Filling)	Unit 1.2 (Coal reject)	Unit 2.1 (Alluvium)	Unit 2.2 (Residual)	Unit 3 (Sandstone)
1001	B	0.5	NE	NE	>1.6	NE
1002	A	0.15	0.8	1.4	>2.2	NE
1003	A	NE	0.8	NE	>2.0	NE
1004	A	1.0(1)	0.4	NE	>2.1	NE
1005	B	0.2	1.0	NE	>1.7	NE
1006	B	0.15	0.7	NE	>2.0	NE
1007	B	0.25	0.4	>1.9	NE	NE
1008	B	NE	1.4	>2.2	NE	NE
1009	B	NE	1.5	2.3	>2.5	NE
1010	B	NE	>2.2	NE	NE	NE
1011	B	NE	0.6	NE	>1.8	NE
1012	B	NE	1.2	>2.2	NE	NE
1013	B	NE	0.9	1.2	>2.2	NE
1014	B	0.15	NE	NE	>1.7	NE
1015	B	0.15	NE	NE	1.35	>1.4
1016	B	0.7	0.5	1.2(2)	>2.0	NE
1017	B	NE	>0.7(3)	NE	NE	NE
1018	B	0.45	NE	NE	>1.5	NE
1019	B	0.4	NE	NE	>1.7	NE
1020	B	0.8	3.0	NE	>3.1	NE
1021	B	NE	2.7	>3.3	NE	NE
1022	B	0.15	NE	NE	>1.7	NE
1023	B	0.2	NE	NE	0.7	>0.75
1024	B	NE	0.7	>2.7	NE	NE

Notes to Table 10:

(1) Sandy clay filling below the coal reject

(2) Possibly filling

(3) Refusal of concrete slab

(4) Sandy silt

(5) Stiff sandy clay (possibly alluvial)

Table 10: Summary of Depth to Base of each Unit (Present Investigation) [continued]

Pit/Bore	Area	Depth to base of unit (m)				
		Unit 1.1 (Filling)	Unit 1.2 (Coal reject)	Unit 2.1 (Alluvium)	Unit 2.2 (Residual)	Unit 3 (Sandstone)
1025	B	NE	2.0	NE	>3.1	NE
1026	B	0.4	NE	NE	>1.6	NE
1027	B	0.35	NE	NE	>1.7	NE
1028	B	NE	1.2	NE	>2.1	NE
1029	B	0.65	0.25	NE	>1.5	NE
1030	B	2.0	NE	NE	>2.7	NE
1031	B	NE	0.4	NE	>1.8	NE
1032	B	0.55	NE	NE	>1.4	NE
1033	B	NE	0.55	NE	1.5	>1.7
1034	B	1.0	0.6	NE	NE	>1.3
1035	B	0.15	NE	NE	>1.2	NE
1036	B	0.25	NE	NE	1.0	>1.1
1037	B	0.25	NE	NE	0.4	>0.6
1038	B	0.2	NE	NE	1.4	>1.5
1039	B	0.25	NE	NE	0.25[4]	>0.5
1040	B	0.25	NE	NE	1.3	>1.4
1041	B	0.25	NE	NE	>1.25	NE
1042	B	0.35	NE	NE	1.1	>1.2
1043	B	NE	0.25	NE	>0.8	NE
1044	B	0.35	NE	NE	1.0	>1.1
1045	B	0.15	NE	NE	0.4	>0.45
1046	B	0.25	NE	NE	0.75	>0.8

Notes to Table 10:

(1) Sandy clay filling below the coal reject

(2) Possibly filling

(3) Refusal of concrete slab

(4) Sandy silt

(5) Stiff sandy clay (possibly alluvial)

Table 10: Summary of Depth to Base of each Unit (Present Investigation) [continued]

Pit/Bore	Area	Depth to base of unit (m)				
		Unit 1.1 (Filling)	Unit 1.2 (Coal reject)	Unit 2.1 (Alluvium)	Unit 2.2 (Residual)	Unit 3 (Sandstone)
1047	B	0.5	NE	NE	>1.5[5]	NE
1048	B	0.35	NE	NE	>1.5	NE
1049	B	0.25	NE	NE	>1.5	NE
1050	B	0.1	NE	NE	>0.25	NE
1051	B	0.2	1.4	>2.1	NE	NE
1052	A	NE	1.5	2.1	>2.7	NE
1053	A	0.5	NE	NE	>1.7	NE
1054	B	NE	1.5	>2.5	NE	NE
1055	B	NE	0.4	NE	>0.5	NE
1056	B	0.2	NE	NE	0.55	>0.6
1057	B	0.35	NE	NE	1.05	>1.1

Notes to Table 10:

(1) Sandy clay filling below the coal reject

(2) Possibly filling

(3) Refusal of concrete slab

(4) Sandy silt

(5) Stiff sandy clay (possibly alluvial)

Table 11: Summary of Depth to Base of each Unit (previous investigation)

Pit/Bore	Area	Depth to base of unit (m)				
		Unit 1.1 (Filling)	Unit 1.2 (Coal reject)	Unit 2.1 (Alluvium)	Unit 2.2 (Residual)	Unit 3 (Sandstone)
1	B	NE	1.8	NE	NE	>2.4
2	B	NE	0.4	NE	NE	>1.15
3	B	NE	0.55	NE	0.9	>2.7
4	B	NE	0.4	NE	1.0	>1.75
5	B	0.15	NE	NE	1.35	>1.7[(3)]
6	B	NE	0.4	NE	2.0	>2.0[(3)]
7	B	0.8	NE	NE	NE	>1.25
8	B	NE	2.9	NE	>3.1	NE
9	B	NE	1.2	NE	>3.0	NE
10	B	1.3	2.0	NE	>2.65	NE
11	B	0.5	NE	NE	>2.8	NE
12	B	0.9	NE	NE	>2.8	NE
13	B	0.2[(4)]	NE	NE	NE	NE
13A	B	0.1	0.45	NE	>2.65	NE
14	B	0.45	NE	1.4	>2.9	NE
15	B	NE	NE	NE	1.4	>1.5[(3)]
16	B	0.3	NE	NE	>2.65	NE
17	B	0.75	>3.0	NE	NE	NE
18	B	0.3[(5)]	NE	NE	NE	NE
19	B	>2.0	0.5	NE	NE	NE
20	B	0.25	NE	NE	1.5	>2.0[(3)]
21	B	0.12[(4)]	NE	NE	NE	NE
22	B	NE	>3.0	NE	NE	NE

Notes to Table 11

(1) Clay filling below coal reject filling

(2) Filling below coal reject filling

(3) Claystone bedrock

(4) Refusal on concrete

(5) Refusal due to historical remains

Table 11: Summary of Depth to Base of each Unit (previous investigation) (continued)

Pit/Bore	Area	Depth to base of unit (m)				
		Unit 1.1 (Filling)	Unit 1.2 (Coal reject)	Unit 2.1 (Alluvium)	Unit 2.2 (Residual)	Unit 3 (Sandstone)
23	B	0.35	1.35	>2.7	NE	NE
24	B	NE	0.8	NE	>3.0	NE
25	B	0.01	>1.1	NE	NE	NE
26	B	NE	>0.45	NE	NE	NE
27	B	NE	0.25	NE	2.6	>2.9
28	B	NE	>1.6	NE	NE	NE
29	B	0.4	NE	NE	>2.8	NE
30	B	0.08	0.55	NE	NE	>0.6
31	B	NE	0.75	NE	>2.7	NE
32	B	NE	1.2	NE	1.8	>2.5
33	B	>3.0[(1)]	2.2	NE	NE	NE
34	B	NE	0.7	NE	1.2	>1.9
35	B	1.2[(2)]	0.5	1.7	>3.0	NE
36	B	NE	>2.8	NE	NE	NE
37	B	NE	1.3	>3.0	NE	NE
38	B	NE	1.0	2.5	>3.0	NE
39	B	0.1	1.4	NE	>3.0	NE
40	B	0.1	0.8	1.3	>3.0	NE
41	A	NE	0.9	>3.0	NE	NE
42	A	NE	1.3	>2.2	NE	NE
44	A	0.7	1.2	1.7	>3.0	NE

Notes to Table 11

(1) Clay filling below coal reject filling
(2) Filling below coal reject filling
(3) Claystone bedrock
(4) Refusal on concrete
(5) Refusal due to historical remains

9.3.2 Contamination Observations

Observations of potential contamination for the current and previous assessment are summarised below in Table 12.

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Table 12: Potential Contaminant Observations during Field Work

Potential Contaminant Observation	Test Pit/ Depth Range in metres			
Coal fragments	All pits in filled area			
Fibro Fragments	18 / 0 to >0.3 m	1029 / 0 to 0.25 m	1039 / 0 to 0.25 m	
Deleterious material (concrete, timber, corrugated iron, rubber, metal, bricks, cable, footings, sleepers, rails, glass)	1002 / 0 to 0.1	1008 / 0.5 to 1.4	1013 / 0 to 0.9	1015 / 0 to 0.15
	1017 / 0 to 0.7	1018 / 0.5	1019 / 0 to 0.2, 0.4	1020 / 0.8 to 3.0
	1021 / 0.8 to 2.7	1024 / 0 to 0.7	1025 / 1.0 to 2.0	1028 / 0 to 0.9
	1030 / 1.1 to 1.35	1031 / 0 to 0.25	1033 / 0 to 0.55	1034 / 0.6 to 1.0
	1036 / 0 to 0.25	1037 / 0 to 0.25	1039 / 0 to 0.25	1042 / 0 to 0.35
	1046 / 0 to 0.25	1048 / 0 to 0.35	1052 / 0.5 to 1.5	1053 / 0 to 0.5
	1055 / surface	1056 / 0 to 0.2		
	1 / 0 to 1.1	4 / 0 to 0.4	9 / 0 to 0.55	13 / 0.15 to >0.2
	18 / 0 to >0.3	21 / >0.1	23 / 0.6 to 0.9	25 / 0.5
	26 / >0.3	28 / 1.4	42 / 0.9 to 1.3	
Black Tar film on concrete slab	23 / 0.9			
Hydrocarbon Odour	36 / 2.4 to 2.8	1024 / 0.7 to 2.5		
Ash	1002 / 0.15 to 0.6	1025 / 0.25 to 0.55		
Black Slag	68 / 0-0.05			

The results of PID screening on soil samples are shown on the logs in Appendix C. PID screening indicated the absence of gross volatile hydrocarbon impact (PID = <1 to 7 ppm) in the samples screened.

There was generally no visual or olfactory evidence (i.e. staining or odours) to suggest the presence of gross contamination within the soils investigated with the exception of hydrocarbon odours, which were detected in Pit 1024 at 0.7 m to 2.5 m depth in the present investigation. It is noted that a hydrocarbon odour was also detected in the previous investigation in Pit 36 from 2.4 m to 2.8 m depth.

Free groundwater was observed in the following pits, all of which are located within the area adjacent to Camp Creek Gully:

- Seepage at 1 m depth in Pit 1005;
- Groundwater at 0.8 m depth in Pit 1008;
- Strong seepage at 1.2 m depth in Pit 1009;
- Seepage at 1.2 m depth in Pit 1012;
- Seepage at 2.6 m depth in Pit 1021; and
- Strong seepage from 0.7 m depth in Pit 1054.

No free groundwater was observed in any of the remaining pits excavated for the present investigation. It should be noted that groundwater levels are affected by factors such as climatic conditions and soil permeability and will therefore vary with time.

10. Proposed Development

The proposed development for the site includes the creation of a residential subdivision. The potential layout of the subdivision is only in concept stage, but may include one of the following:

- Medium to large semi-rural lots within internal roads, together with no disturbance of the existing buildings in the south-eastern part of Area B. A preliminary concept layout for this option is presented in Figure 17 below;

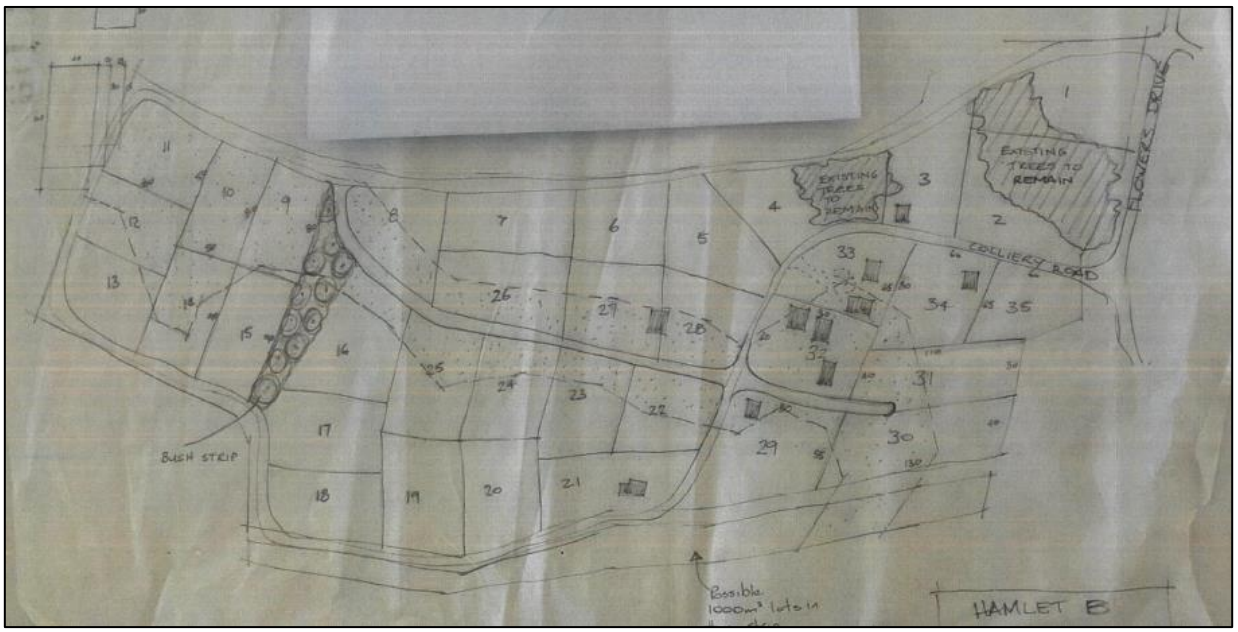

Figure 17: Indicative/Concept layout for large area allotments (Area B)

- Higher density allotments of about 1000 m^2 with internal roads, as shown in the concept layout presented in Figure 18.

Figure 18: Indicative/Concept layout for higher density allotments (Area B)

11. Site Assessment Criteria

11.1 Introduction

The proposed development includes the creation of a residential subdivision.

The assessment and characterisation of the material on the site and the results of laboratory testing have been compared to the National Environmental Protection Council (NEPC), "National Environmental Protection (Assessment of Site Contamination) Measures" (NEPM), 1999 (amended 2013) [Ref 4].

For comparison to the NEPM guidelines, the investigation and screening levels applied in the investigation comprise levels adopted for a generic residential land use scenario.

11.2 Health Investigation and Screening Levels

The generic health investigation levels (HIL) and health screening levels (HSL) are considered to be appropriate for the assessment of contamination at the site. The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table 13.

Table 13: HIL and HSL in mg/kg Unless Otherwise Indicated

Contaminants		HSL-A
Metals	Arsenic	100
	Cadmium	20
	Chromium (VI)	100
	Copper	6000
	Lead	300
	Manganese	3800
	Mercury (inorganic)	40
	Nickel	400
	Zinc	7400
PAH	Benzo(a)pyrene TEQ[1]	3
	Naphthalene	3
	Total PAH	300
TRH	C6 – C10 (less BTEX) [F1]	45/50[(4)]
	>C10-C16 (less Naphthalene) [F2]	110/280[(4)]
	>C16-C34 [F3]	NC
	>C34-C40 [F4]	NC
BTEX	Benzene	0.5/0.7[(4)]
	Toluene	160/480[(4)]
	Ethylbenzene	55/NL[(4)]
	Xylenes	40/110[(4)]
OCP	Aldrin + Dieldrin	6
	Chlordane	50
	DDT+DDE+DDD	240
	Endosulfan	270
	Endrin	10
	Heptachlor	300
	HCB	10
	Methoxychlor	300
OPP	Chlorpyrifos	160
PCB[2]		1

Notes to Table 13:

1 Sum of carcinogenic PAHs

2 Non dioxin-like PCBs only.

3 The soil saturation concentration (Csat) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds Csat, a soil vapour source concentration for a petroleum mixture could not exceed a level that would results in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.

4 The HSL have been calculated for a potential vapour intrusion pathway, a conservative sand soil (based on nature of filling) and an assumed depth to contamination of 0 m to <1 with the exception of those note with the subscript 4 which have been based on a clay soil texture .

NC – No Criteria.

As shown in Table 13 the adopted HSLs are predicated on a potential vapour intrusion pathway. Although possible direct contact pathways are present at the site, and construction worker receptors, the corresponding HSLs are significantly higher than those for the vapour intrusion pathway and are therefore not drivers for further assessment and / or remediation. As such the direct contact and intrusive maintenance worker HSLs have not been listed.

11.3 Ecological Investigation Levels

EIL and Added Contaminant Limits (ACLs), where appropriate, have been derived in NEPC (2013) for only a short list of contaminants comprising As, Cu, Cr (III), DDT, naphthalene, Ni, Pb and Zn. The adopted EIL, derived using the *Interactive (Excel) Calculation Spreadsheet* (Standing Council on Environment and Water (SCEW) website are shown in the following Table 14.

Table 14: EIL in mg/kg

Analyte		EIL (Residential)	
		Filling	Natural Clay
Metals	Arsenic	100	100
	Copper	100	100
	Nickel	35	100
	Chromium III	410	580
	Lead	1100	1100
	Zinc	210	260
PAH	Naphthalene	170	170
OCP	DDT	180	180

The EIL shown above have been based on the following assumptions:

- **FILLING**
  - A conservative sand soil texture based on the predominantly sand or gravel filling;
  - A clay content of 10%;
  - CEC of 5 $cmol_c/kg$;
  - Soil pH of 5 pH units.
- **Natural Clay and Sandy Clay Soils**
  - A clay soil texture based on the predominantly sand clay and clay soils;
  - A clay content of 30%;
  - CEC of 8 $cmol_c/kg$ based on published figures from the soil landscape mapping notes;
  - Soil pH of 5 pH units.
- **All Soils**
  - Organic content of 1%;
  - High traffic volumes in NSW and Aged (greater than 2 years) filling.

11.4 Ecological Screening Levels

ESL are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. The adopted ESL are shown in the following Table 15.

Table 15: ESL in mg/kg

Analyte		ESL[1] (Residential)		Comments
		Filling	Natural Clay	
TRH	C6 – C10 (less BTEX) [F1]	180*	180*	All ESLs are low reliability apart from those marked with * which are moderate reliability
	>C10-C16 (less Naphthalene) [F2]	120*	120*	
	>C16-C34 [F3]	300	1300	
	>C34-C40 [F4]	2800	5600	
BTEX	Benzene	50	65	
	Toluene	85	105	
	Ethylbenzene	70	125	
	Xylenes	105	45	
PAH	Benzo(a)pyrene	0.7	0.7	

Notes to Table 15:

1. The HSL have been calculated for a potential vapour intrusion pathway, a conservative sand soil (based on nature of filling) and a clay texture for the natural clay with an assumed depth to contamination of 0 m to <1

NC – No Criteria

11.5 Management Limits

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

The adopted management limits from Schedule B1 of NEPC (2013) are shown in the following Table 16.

Table 16: Management Limits in mg/kg

Analyte		Management Limit		
		Filling	Natural Clay	
TRH	$C_6 – C_{10}$ (F1) #	700	800	The management limits have been calculated for a residential landuse with a conservative coarse sand for filling
	$>C_{10}$-C_{16} (F2) #	1000	1000	
	$>C_{16}$-C_{34} (F3)	2500	3500	
	$>C_{34}$-C_{40} (F4)	10000	10000	

Notes to Table 16:

Separate management limits for BTEX and naphthalene are not available hence these have not been subtracted from the relevant fractions to obtain F1 and F2

11.6 Asbestos In Soil

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both Fibrous Asbestos (FA) and Asbestos Fines (AF) materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.

A detailed asbestos assessment was not undertaken as part of these works. Therefore the presence or absence of asbestos at a limit of reporting of 0.1 g/kg has been adopted for this assessment as an initial screen.

12. Laboratory Testing

Laboratory testing for preliminary investigation was undertaken by Envirolab Services, a National Association of Testing Authorities, Australia (NATA) registered laboratory. Analytical Methods used are shown on the laboratory sheets in Appendix D.

A total of eighty-six (86) (including 3 duplicates) were selected for analysis for the following potential contaminants:

- Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Manganese);
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethylbenzene, Xylene and Napthalene (BTEXn);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Polychlorinated Biphenyls (PCBs);
- Organochlorine (OCP) and Organophosphate (OPP) Pesticides; and
- Asbestos Identification.

In addition, 33 surface soil samples and seven material samples were analysed for asbestos identification.

The detailed results of chemical analysis on the tested samples are presented in the laboratory report sheets in Appendix D, and are summarised in Table 17 to Table 20 below.

Based on a review of the report QC results, it is considered that the laboratory test data obtained are reliable and useable for this assessment. The results of QA/QC testing are presented in Appendix D.

Table 17: Summary of Laboratory Results – Metals

Pit	Depth (m)	Fill or Natural	PID	Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Manganese
Limit of Reporting				4.0	0.4	1.0	1.0	1.0	0.1	1.0	1.0	1.0
Sample ID				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1001	0.1	F	2	<4 100 100	<0.4 20 NC	7 100 410	10 6000 100	12 300 1100	<0.1 40 NC	2 400 35	12 7400 210	36 3800 NC
1002	0.3	F	<1	<4 100 100	<0.4 20 NC	4 100 410	21 6000 100	8 300 1100	<0.1 40 NC	14 400 35	18 7400 210	68 3800 NC
D6(1002)	0.3	F	<1	<4 100 100	<0.4 20 NC	4 100 410	17 6000 100	8 300 1100	<0.1 40 NC	12 400 35	16 7400 210	52 3800 NC
1002	0.7	F	2	<4 100 100	<0.4 20 NC	6 100 410	12 6000 100	38 300 1100	<0.1 40 NC	3 400 35	48 7400 210	42 3800 NC
1003	0.4	F	<1	<4 100 100	<0.4 20 NC	5 100 410	48 6000 100	22 300 1100	0.2 40 NC	13 400 35	15 7400 210	63 3800 NC
1004	0.2	F	<1	<4 100 100	<0.4 20 NC	4 100 410	19 6000 100	14 300 1100	<0.1 40 NC	27 400 35	22 7400 210	25 3800 NC
1004	0.7	F	<1	<4 100 100	<0.4 20 NC	2 100 410	2 6000 100	7 300 1100	<0.1 40 NC	7 400 35	13 7400 210	23 3800 NC
1004	1.2	N	<1	<4 100 100	<0.4 20 NC	6 100 580	<1 6000 100	4 300 1100	<0.1 40 NC	<1 400 170	1 7400 260	2 3800 NC
1006	0.2	F	5	<4 100 100	<0.4 20 NC	4 100 410	28 6000 100	49 300 1100	0.1 40 NC	4 400 35	32 7400 210	77 3800 NC
1006	0.5	F	3	<4 100 100	<0.4 20 NC	3 100 410	13 6000 100	120 300 1100	<0.1 40 NC	2 400 35	18 7400 210	58 3800 NC
1007	0.1	F	<1	<4 100 100	<0.4 20 NC	2 100 410	<1 6000 100	2 300 1100	<0.1 40 NC	<1 400 35	1 7400 210	1 3800 NC
1008	1.0	F	2	<4 100 100	<0.4 20 NC	8 100 410	37 6000 100	35 300 1100	0.3 40 NC	4 400 35	83 7400 210	40 3800 NC
1008	1.5	N	2	<4 100 100	<0.4 20 NC	5 100 410	3 6000 100	7 300 1100	<0.1 40 NC	3 400 35	6 7400 210	35 3800 NC
1009	0.6	F	<1	<4 100 100	0.8 20 NC	3 100 410	15 6000 100	15 300 1100	<0.1 40 NC	4 400 35	140 7400 210	93 3800 NC
1009	1.2	F	3	<4 100 100	<0.4 20 NC	4 100 410	18 6000 100	18 300 1100	<0.1 40 NC	8 400 35	50 7400 210	72 3800 NC
1010	2.0	F	<1	<4 100 100	<0.4 20 NC	3 100 410	20 6000 100	24 300 1100	0.2 40 NC	6 400 35	8 7400 210	4 3800 NC
1011	0.3	F	3	<4 100 100	<0.4 20 NC	5 100 410	10 6000 100	20 300 1100	<0.1 40 NC	1 400 35	60 7400 210	45 3800 NC
1012	0.3	F	<1	<4 100 100	<0.4 20 NC	7 100 410	30 6000 100	25 300 1100	0.1 40 NC	5 400 35	30 7400 210	81 3800 NC
1012	1.7	N	<1	<4 100 100	<0.4 20 NC	12 100 580	<1 6000 100	6 300 1100	<0.1 40 NC	<1 400 100	1 7400 260	2 3800 NC
1013	1.0	N	3	<4 100 100	<0.4 20 NC	5 100 410	<1 6000 100	3 300 1100	<0.1 40 NC	<1 400 35	6 7400 210	5 3800 NC
1015	0.1	F	5	7 100 100	<0.4 20 NC	10 100 410	14 6000 100	15 300 1100	<0.1 40 NC	7 400 35	71 7400 210	330 3800 NC
1016	0.2	F	4	<4 100 100	<0.4 20 NC	10 100 410	340 6000 100	120 300 1100	<0.1 40 NC	9 400 35	260 7400 210	210 3800 NC
1016	1.0	N	<1	<4 100 100	<0.4 20 NC	6 100 410	<1 6000 100	6 300 1100	<0.1 40 NC	<1 400 100	1 7400 260	4 3800 NC
1017	0.4	F	2	8 100 100	<0.4 20 NC	17 100 410	34 6000 100	23 300 1100	0.2 40 NC	16 400 35	49 7400 210	240 3800 NC
D4(1017)	0.4	F	2	6 100 100	<0.4 20 NC	9 100 410	34 6000 100	30 300 1100	0.2 40 NC	14 400 35	98 7400 210	210 3800 NC
1018	0.2	F	3	10 100 100	<0.4 20 NC	18 100 410	16 6000 100	14 300 1100	<0.1 40 NC	6 400 35	35 7400 210	96 3800 NC
1018	0.7	N	4	<4 100 100	<0.4 20 NC	24 100 580	1 6000 100	11 300 1100	<0.1 40 NC	<1 400 100	7 7400 260	6 3800 NC
1019	0.1	F	<1	40 100 100	0.7 20 NC	43 100 410	550 6000 100	630 300 1100	0.3 40 NC	4 400 35	18000 7400 210	1200 3800 NC
1019	0.3	F	<1	20 100 100	0.8 20 NC	22 100 410	280 6000 100	270 300 1100	<0.1 40 NC	14 400 35	2300 7400 210	410 3800 NC
1020	0.3	F	6	<4 100 100	<0.4 20 NC	7 100 410	360 6000 100	250 300 1100	<0.1 40 NC	8 400 35	260 7400 210	120 3800 NC
1020	1.1	F	7	<4 100 100	<0.4 20 NC	11 100 410	64 6000 100	35 300 1100	<0.1 40 NC	16 400 35	180 7400 210	130 3800 NC
1020	3.05	N	3	<4 100 100	<0.4 20 NC	7 100 410	<1 6000 100	4 300 1100	<0.1 40 NC	<1 400 35	26 7400 210	6 3800 NC
1021	0.3	F	2	<4 100 100	<0.4 20 NC	5 100 410	140 6000 100	61 300 1100	0.2 40 NC	9 400 35	85 7400 210	83 3800 NC
1021	1.0	F	2	9 100 100	<0.4 20 NC	9 100 410	22 6000 100	46 300 1100	0.1 40 NC	13 400 35	70 7400 210	160 3800 NC
1021	2.8	N	2	<4 100 100	<0.4 20 NC	3 100 410	<1 6000 100	3 300 1100	<0.1 40 NC	<1 400 35	<1 7400 210	3 3800 NC
1024	0.6	F	2	<4 100 100	<0.4 20 NC	9 100 410	100 6000 100	80 300 1100	0.3 40 NC	10 400 35	160 7400 210	150 3800 NC
1024	1.2	N	5	<4 100 100	<0.4 20 NC	5 100 410	<1 6000 100	4 300 1100	<0.1 40 NC	<1 400 100	2 7400 260	6 3800 NC
1024	1.8	N	7	<4 100 100	<0.4 20 NC	14 100 580	<1 6000 100	4 300 1100	<0.1 40 NC	1 400 100	2 7400 260	5 3800 NC
1024	2.7	N	6	<4 100 100	<0.4 20 NC	14 100 410	<1 6000 100	4 300 1100	<0.1 40 NC	2 400 100	2 7400 260	5 3800 NC
1025	0.4	F	<1	<4 100 100	<0.4 20 NC	3 100 410	46 6000 100	25 300 1100	<0.1 40 NC	8 400 35	30 7400 210	56 3800 NC
1025	1.8	F	<1	<4 100 100	<0.4 20 NC	3 100 410	56 6000 100	38 300 1100	<0.1 40 NC	3 400 35	86 7400 210	55 3800 NC
1026	0.3	F	4	13 100 100	<0.4 20 NC	15 100 410	<1 6000 100	6 300 1100	<0.1 40 NC	<1 400 35	1 7400 210	8 3800 NC
1026	0.6	F	3	<4 100 100	<0.4 20 NC	25 100 580	<1 6000 100	6 300 1100	<0.1 40 NC	1 400 100	3 7400 260	6 3800 NC
1027	0.2	F	<1	<4 100 100	<0.4 20 NC	9 100 410	39 6000 100	34 300 1100	<0.1 40 NC	5 400 35	76 7400 210	210 3800 NC

Notes to Table 17

HIL / HSL exceedance | EIL / ESL exceedance | ML exceedance | HIL/HSL and EIL/ESL exceedance | Key: Lab result (HIL/HSL value / EIL/ESL value)

ML and HIL/HSL/EIL/ESL exceedance | red = DC exceedance | NT = Not tested | NL = Non limiting | NC = No criteria | NAD = No asbestos detected

Notes:

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013, Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013, Schedule B1

Table 17: Summary of Laboratory Results – Metals (continued)

Pit	Depth (m)	Fill or Natural	PID	Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Manganese
Limit of Reporting				4.0	0.4	1.0	1.0	1.0	0.1	1.0	1.0	1.0
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1028	0.4	F	1	6 100 100	<0.4 20 NC	15 100 410	280 6000 100	170 300 1100	0.2 40 NC	11 400 35	610 7400 210	290 3800 NC
1028	1.4	N	<1	<4 100 100	<0.4 20 NC	20 100 580	<1 6000 100	5 300 1100	<0.1 40 NC	2 400 100	8 7400 260	9 3800 NC
1029	0.2	F	1	6 100 100	<0.4 20 NC	5 100 410	37 6000 100	49 300 1100	0.1 40 NC	5 400 35	44 7400 210	60 3800 NC
1029	0.5	F	<1	<4 100 100	<0.4 20 NC	2 100 410	6 6000 100	5 300 1100	<0.1 40 NC	<1 400 35	19 7400 210	9 3800 NC
1030	0.55	F	3	<4 100 100	<0.4 20 NC	6 100 410	11 6000 100	9 300 1100	<0.1 40 NC	4 400 35	25 7400 210	26 3800 NC
1030	1.2	F	3	<4 100 100	<0.4 20 NC	5 100 410	29 6000 100	14 300 1100	0.2 40 NC	6 400 35	28 7400 210	35 3800 NC
1030	1.7	F	<1	<4 100 100	<0.4 20 NC	10 100 410	<1 6000 100	3 300 1100	<0.1 40 NC	<1 400 35	2 7400 210	6 3800 NC
1031	0.1	F	<1	<4 100 100	2 20 NC	5 100 410	21 6000 100	43 300 1100	<0.1 40 NC	7 400 35	920 7400 210	200 3800 NC
1032	0.3	F	<1	5 100 100	<0.4 20 NC	7 100 410	9 6000 100	20 300 1100	<0.1 40 NC	4 400 35	35 7400 210	38 3800 NC
1033	0.4	F	5	<4 100 100	<0.4 20 NC	4 100 410	31 6000 100	36 300 1100	0.2 40 NC	4 400 35	28 7400 210	63 3800 NC
1033	0.7	N	2	<4 100 100	<0.4 20 NC	12 100 580	<1 6000 100	4 300 1100	<0.1 40 NC	1 400 100	2 7400 260	5 3800 NC
1034	0.3	F	2	<4 100 100	<0.4 20 NC	3 100 410	9 6000 100	13 300 1100	0.1 40 NC	3 400 35	90 7400 210	31 3800 NC
1034	0.8	F	2	<4 100 100	<0.4 20 NC	1 100 410	<1 6000 100	2 300 1100	<0.1 40 NC	<1 400 35	5 7400 210	4 3800 NC
1035	0.1	F	2	<4 100 100	0.8 20 NC	4 100 410	9 6000 100	93 300 1100	<0.1 40 NC	2 400 35	1800 7400 210	110 3800 NC
1036	0.1	F	2	<4 100 100	<0.4 20 NC	9 100 410	20 6000 100	190 300 1100	<0.1 40 NC	7 400 35	310 7400 210	110 3800 NC
D1(1036)	0.1	F	2	<4 100 100	<0.4 20 NC	9 100 410	21 6000 100	220 300 1100	<0.1 40 NC	7 400 35	350 7400 210	110 3800 NC
1036	0.5	N	2	<4 100 100	<0.4 20 NC	25 100 690	1 6000 100	10 300 1100	<0.1 40 NC	2 400 100	6 7400 260	4 3800 NC
1037	0.1	F	2	<4 100 100	<0.4 20 NC	8 100 410	12 6000 100	200 300 1100	<0.1 40 NC	3 400 35	68 7400 210	40 3800 NC
1038	0.1	F	2	<4 100 100	<0.4 20 NC	7 100 410	9 6000 100	41 300 1100	<0.1 40 NC	2 400 35	140 7400 210	71 3800 NC
1038	0.4	N	2	<4 100 100	<0.4 20 NC	6 100 410	3 6000 100	7 300 1100	<0.1 40 NC	1 400 35	32 7400 210	10 3800 NC
1039	0.05	F	2	4 100 100	0.6 20 NC	7 100 410	18 6000 100	210 300 1100	<0.1 40 NC	5 400 35	170 7400 210	100 3800 NC
1039	0.35	N	2	<4 100 100	<0.4 20 NC	5 100 410	3 6000 100	7 300 1100	<0.1 40 NC	1 400 35	14 7400 210	5 3800 NC
1040	0.2	F	2	<4 100 100	<0.4 20 NC	2 100 410	6 6000 100	6 300 1100	<0.1 40 NC	2 400 35	25 7400 210	230 3800 NC
1040	0.5	N	2	<4 100 100	<0.4 20 NC	7 100 580	5 6000 100	5 300 1100	<0.1 40 NC	1 400 100	39 7400 260	12 3800 NC
1041	0.1	F	4	<4 100 100	<0.4 20 NC	15 100 410	6 6000 100	7 300 1100	0.3 40 NC	<1 400 35	5 7400 210	13 3800 NC
1042	0.2	F	2	4 100 100	<0.4 20 NC	12 100 410	12 6000 100	10 300 1100	<0.1 40 NC	2 400 35	18 7400 210	24 3800 NC
1042	0.5	N	3	4 100 100	<0.4 20 NC	16 100 580	<1 6000 100	9 300 1100	<0.1 40 NC	<1 400 100	2 7400 260	5 3800 NC
1046	0.1	F	<1	4 100 100	<0.4 20 NC	9 100 410	180 6000 100	40 300 1100	<0.1 40 NC	3 400 35	180 7400 210	44 3800 NC
1047	0.3	F	<1	4 100 100	<0.4 20 NC	11 100 410	16 6000 100	16 300 1100	<0.1 40 NC	8 400 35	60 7400 210	150 3800 NC
1047	0.7	F	2	<4 100 100	<0.4 20 NC	11 100 580	12 6000 100	41 300 1100	0.1 40 NC	5 400 100	110 7400 260	140 3800 NC
1048	0.2	F	<1	<4 100 100	<0.4 20 NC	13 100 410	32 6000 100	85 300 1100	<0.1 40 NC	6 400 35	200 7400 210	55 3800 NC
1048	0.6	N	1	<4 100 100	<0.4 20 NC	26 100 580	<1 6000 100	10 300 1100	<0.1 40 NC	<1 400 100	8 7400 260	3 3800 NC
1051	0.7	F	2	<4 100 100	<0.4 20 NC	4 100 410	19 6000 100	9 300 1100	<0.1 40 NC	6 400 35	7 7400 210	25 3800 NC
1051	1.7	N	<1	<4 100 100	<0.4 20 NC	4 100 580	<1 6000 100	4 300 1100	<0.1 40 NC	1 400 100	2 7400 260	9 3800 NC
1052	1.0	F	<1	<4 100 100	<0.4 20 NC	5 100 410	21 6000 100	19 300 1100	<0.1 40 NC	16 400 35	72 7400 210	60 3800 NC
1052	1.8	N	2	<4 100 100	<0.4 20 NC	5 100 410	<1 6000 100	5 300 1100	<0.1 40 NC	<1 400 35	1 7400 210	5 3800 NC
1054	0.4	F	1	<4 100 100	<0.4 20 NC	3 100 410	45 6000 100	31 300 1100	0.1 40 NC	8 400 35	53 7400 210	57 3800 NC
1054	1.0	F	<1	<4 100 100	<0.4 20 NC	14 100 410	<1 6000 100	4 300 1100	<0.1 40 NC	<1 400 35	1 7400 210	3 3800 NC
1055	0.2	F	<1	<4 100 100	0.4 20 NC	12 100 410	73 6000 100	79 300 1100	<0.1 40 NC	8 400 35	290 7400 210	70 3800 NC
1056	0.1	F	<1	5 100 100	<0.4 20 NC	7 100 410	29 6000 100	160 300 1100	<0.1 40 NC	3 400 35	55 7400 210	50 3800 NC
1057	0.15	F	<1	5 100 100	<0.4 20 NC	6 100 410	8 6000 100	15 300 1100	<0.1 40 NC	2 400 35	12 7400 210	40 3800 NC
1057	0.7	N	<1	6 100 100	<0.4 20 NC	7 100 580	3 6000 100	6 300 1100	<0.1 40 NC	1 400 100	4 7400 260	4 3800 NC
1020 [TRIPLICATE]	0.3			6 100 100	<0.4 20 NC	8 100 410	590 6000 100	220 300 1100	0.1 40 NC	9 400 35	210 7400 210	86 3800 NC

Notes to Table 17

HIL / HSL exceedance EIL / ESL exceedance ML exceedance HIL/HSL and EIL/ESL exceedance Key: Lab result (HIL/HSL value / EIL/ESL value)

ML and HIL/HSL/EIL/ESL exceedance red = DC exceedance NT = Not tested NL = Non limiting NC = No criteria NAD = No asbestos detected

Notes:

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013. Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013. Schedule B1

Table 18: Summary of Laboratory Results – TRH, BTEX and PAH

Pit	Depth (m)	Fill or Natural	PID	TRH						BTEXn					PAH		
				TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
Limit of Reporting				25.0	50.0	25.0	50.0	100.0	100.0	0.2	0.5	1.0	1.0	0.1	0.05	0.5	0.05
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1001	0.1	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	1.4 300 NC
1002	0.3	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	330 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.09 N 0.7	<0.5 3 NC	5.4 300 NC
D6(1002)	0.3	F	<1	<25 NC NC	63 NC NC	<25 45 180	63 110 120	610 NC 300	150 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	8.1 300 NC
1002	0.7	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.06 N 0.7	<0.5 3 NC	1.7 300 NC
1003	0.4	F	<1	<25 NC NC	110 NC NC	<25 45 180	110 110 120	570 NC 300	110 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.09 N 0.7	<0.5 3 NC	7 300 NC
1004	0.2	F	<1	<25 NC NC	66 NC NC	<25 45 180	66 110 120	400 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	6.3 300 NC
1004	0.7	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.2 300 NC
1004	1.2	N	<1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1006	0.2	F	5	<25 NC NC	93 NC NC	<25 45 180	93 110 120	450 NC 300	120 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	8.9 300 NC
1006	0.5	F	3	<25 NC NC	56 NC NC	<25 45 180	56 110 120	270 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	7.2 300 NC
1007	0.1	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1008	1.0	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.89 300 NC
1008	1.5	N	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1009	0.6	F	<1	<25 NC NC	200 NC NC	<25 45 180	200 110 120	820 NC 300	130 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	15 300 NC
1009	1.2	F	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	360 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.3 N 0.7	<0.5 3 NC	6.6 300 NC
1010	2.0	F	<1	<25 NC NC	140 NC NC	<25 45 180	140 110 120	630 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.08 N 0.7	<0.5 3 NC	8.9 300 NC
1011	0.3	F	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.1 300 NC
1012	0.3	F	<1	<25 NC NC	100 NC NC	<25 45 180	100 110 120	520 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	9.6 300 NC
1012	1.7	N	<1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1013	1.0	N	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1015	0.1	F	5	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.3 300 NC
1016	0.2	F	4	<25 NC NC	51 NC NC	<25 45 180	51 110 120	280 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	7.2 300 NC
1016	1.0	N	<1	<25 NC NC	<50 NC NC	<25 40 180	<50 230 120	<100 NC 1300	<100 NC 5600	<0.2 0.6 65	<0.5 390 105	<1 NL 125	<1 95 45	<1 4 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1017	0.4	F	2	<25 NC NC	150 NC NC	<25 45 180	150 110 120	910 NC 300	170 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	10 300 NC
D4(1017)	0.4	F	2	<25 NC NC	120 NC NC	<25 45 180	120 110 120	860 NC 300	180 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	11 300 NC
1018	0.2	F	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1018	0.7	N	4	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1019	0.1	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	160 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	5.3 300 NC
1019	0.3	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	580 NC 300	150 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.09 N 0.7	<0.5 3 NC	2.3 300 NC
1020	0.3	F	6	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	120 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.09 N 0.7	<0.5 3 NC	2.8 300 NC
1020	1.1	F	7	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1.2 3 170	<0.05 N 0.7	<0.5 3 NC	4.2 300 NC
1020	3.05	N	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1021	0.3	F	2	<25 NC NC	110 NC NC	<25 45 180	110 110 120	670 NC 300	120 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	11 300 NC
1021	1.0	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	330 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	7 300 NC
1021	2.8	N	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1024	0.6	F	2	<25 NC NC	64 NC NC	<25 45 180	64 110 120	480 NC 300	100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	9.5 300 NC
1024	1.2	N	5	<25 NC NC	130 NC NC	<25 40 180	130 230 120	4100 NC 1300	310 NC 5600	<0.2 0.6 65	<0.5 390 105	<1 NL 125	<1 95 45	<1 4 170	<0.5 N 0.7	<5 3 NC	<0.5 300 NC
1024	1.8	N	7	<25 NC NC	190 NC NC	<25 50 180	190 280 120	6900 NC 1300	510 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.5 N 0.7	<5 3 NC	<0.5 300 NC
1024	2.7	N	6	<25 NC NC	99 NC NC	<25 50 180	99 280 120	5000 NC 1300	360 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.5 N 0.7	<5 3 NC	<0.5 300 NC
1025	0.4	F	<1	<25 NC NC	120 NC NC	<25 45 180	120 110 120	500 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	10 300 NC
1025	1.8	F	<1	<25 NC NC	55 NC NC	<25 45 180	55 110 120	270 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	5.4 300 NC
1026	0.3	F	4	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1026	0.6	F	3	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1027	0.2	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.05 N 0.7	<0.5 3 NC	1 300 NC

Notes to Table 18

HIL / HSL exceedance EIL / ESL exceedance ML exceedance HIL/HSL and EIL/ESL exceedance

ML and HIL/HSL/EIL/ESL exceedance **red** = DC exceedance NT = Not tested NL = Non limiting NC = No criteria NAD = No asbestos detected

Key: Lab result (HIL/HSL value / EIL/ESL value)

Notes:

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013. Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013. Schedule B1

Table 18: Summary of Laboratory Results – TRH, BTEX and PAH (continued)

Pit	Depth (m)	Fill or Natural	PID	TRH						BTEXn					PAH		
				TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
Limit of Reporting				25.0	50.0	25.0	50.0	100.0	100.0	0.2	0.5	1.0	1.0	0.1	0.05	0.5	0.05
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1028	0.4	F	1	<25 NC NC	89 NC NC	<25 45 180	89 110 120	910 NC 300	160 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.3 N 0.7	<0.5 3 NC	12 300 NC
1028	1.4	N	<1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1029	0.2	F	1	<25 NC NC	100 NC NC	<25 45 180	100 110 120	460 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	8.1 300 NC
1029	0.5	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.1 300 NC
1030	0.55	F	3	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.96 300 NC
1030	1.2	F	3	<25 NC NC	220 NC NC	<25 45 180	220 110 120	1000 NC 300	110 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	17 300 NC
1030	1.7	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1031	0.1	F	<1	<25 NC NC	130 NC NC	<25 45 180	130 110 120	560 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	13 300 NC
1032	0.3	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	160 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.07 N 0.7	<0.5 3 NC	3.6 300 NC
1033	0.4	F	5	<25 NC NC	100 NC NC	<25 45 180	100 110 120	540 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	9.1 300 NC
1033	0.7	N	2	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1034	0.3	F	2	<25 NC NC	170 NC NC	<25 45 180	170 110 120	660 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	12 300 NC
1034	0.8	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1035	0.1	F	2	<25 NC NC	110 NC NC	<25 45 180	110 110 120	430 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.2 N 0.7	<0.5 3 NC	11 300 NC
1036	0.1	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	1.5 300 NC
D1(1036)	0.1	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.06 N 0.7	<0.5 3 NC	2.1 300 NC
1036	0.5	N	2	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1037	0.1	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.3 300 NC
1038	0.1	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.06 N 0.7	<0.5 3 NC	1.7 300 NC
1038	0.4	N	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1039	0.05	F	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	180 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	5.9 300 NC
1039	0.35	N	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1040	0.2	F	2	<25 NC NC	66 NC NC	<25 45 180	66 110 120	210 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	8.9 300 NC
1040	0.5	N	2	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1041	0.1	F	4	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	120 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.06 N 0.7	<0.5 3 NC	3.3 300 NC
1042	0.2	F	2	<25 NC NC	82 NC NC	<25 45 180	82 110 120	310 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	9 300 NC
1042	0.5	N	3	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1046	0.1	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.2 300 NC
1047	0.3	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.08 N 0.7	<0.5 3 NC	3 300 NC
1047	0.7	F	2	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	0.71 300 NC
1048	0.2	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.86 300 NC
1048	0.6	N	1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1051	0.7	F	2	<25 NC NC	110 NC NC	<25 45 180	110 110 120	610 NC 300	110 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.08 N 0.7	<0.5 3 NC	7.8 300 NC
1051	1.7	N	<1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1052	1.0	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	120 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	3.8 300 NC
1052	1.8	N	2	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1054	0.4	F	1	<25 NC NC	170 NC NC	<25 45 180	170 110 120	890 NC 300	130 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	0.1 N 0.7	<0.5 3 NC	7.2 300 NC
1054	1.0	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1055	0.2	F	<1	<25 NC NC	61 NC NC	<25 45 180	61 110 120	150 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	1.8 300 NC
1056	0.1	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	0.3 300 NC
1057	0.15	F	<1	<25 NC NC	<50 NC NC	<25 45 180	<50 110 120	<100 NC 300	<100 NC 2800	<0.2 0.5 50	<0.5 160 85	<1 55 70	<1 40 105	<1 3 170	<0.05 N 0.7	<0.5 3 NC	1.2 300 NC
1057	0.7	N	<1	<25 NC NC	<50 NC NC	<25 50 180	<50 280 120	<100 NC 1300	<100 NC 5600	<0.2 0.7 65	<0.5 480 105	<1 NL 125	<1 110 45	<1 5 170	<0.05 N 0.7	<0.5 3 NC	<0.05 300 NC
1020 [TRIPLICATE]	0.3			NT NC NC	NT NC NC	NT 45 180	NT 110 120	NT NC 300	NT NC 2800	NT 0.5 50	NT 160 85	NT 55 70	NT 40 105	NT 3 170	NT N C 0.7	NT 3 NC	NT 300 NC

Notes to Table 18

HIL / HSL exceedance EIL / ESL exceedance ML exceedance HIL/HSL and EIL/ESL exceedance Key: Lab result (HIL/HSL value / EIL/ESL value)

ML and HIL/HSL/EIL/ESL exceedance red = DC exceedance NT = Not tested NL = Non limiting NC = No criteria NAD = No asbestos detected

Notes:

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013. Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013. Schedule B1

Table 19: Summary of Laboratory Testing – OCP, OPP, PCB and Asbestos

Pit	Depth (m)	Natural or Fill	PID (ppm)	OCP								OPP	PCB	Asbestos (50 g)
				DDT+DDE+DDD	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Chlorpyriphos	Total PCB	Calculated Asbestos (AS)
PQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	NA
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
1001	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
1002	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
D6(1002)	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1002	0.7	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1003	0.4	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1004	0.2	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1004	0.7	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1004	1.2	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1006	0.2	F	5	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1006	0.5	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1007	0.1	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1008	1.0	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1008	1.5	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1009	0.6	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1009	1.2	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1010	2.0	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1011	0.3	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1012	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1012	1.7	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1013	1.0	N	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1015	0.1	F	5	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1016	0.2	F	4	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1016	1.0	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1017	0.4	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
D4(1017)	0.4	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1018	0.2	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1018	0.7	N	4	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1019	0.1	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1019	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
1020	0.3	F	6	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1020	1.1	F	7	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1020	3.05	N	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1021	0.3	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1021	1.0	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1021	2.8	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1024	0.6	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1024	1.2	N	5	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1024	1.8	N	7	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1024	2.7	N	6	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1025	0.4	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.3 160 NC	<1 1 NC	NAD
1025	1.8	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.2 160 NC	<1 1 NC	NAD
1026	0.3	F	4	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1026	0.6	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1027	0.2	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD

Notes to Table 19

HIL / HSL exceedance EIL / ESL exceedance ML exceedance HIL/HSL and EIL/ESL exceedance Key: Lab result (HIL/HSL value / EIL/ESL value)

ML and HIL/HSL/EIL/ESL exceedance red = DC exceedance NT = Not tested NL = Non limiting NC = No criteria NAD = No asbestos detected

Notes:

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013. Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013. Schedule B1

Table 19: Summary of Laboratory Testing – OCP, OPP, PCB and Asbestos (continued)

Pit	Depth (m)	Natural or Fill	PID (ppm)	OCP								OPP	PCB	Asbestos (50 g)
				DDT+DDE+DDD	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Chlorpyriphos	Total PCB	Calculated Asbestos (AS)
PQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	NA
Units				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
1028	0.4	F	1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1028	1.4	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1029	0.2	F	1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1029	0.5	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1030	0.55	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
1030	1.2	F	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1030	1.7	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1031	0.1	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1032	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1033	0.4	F	5	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1033	0.7	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1034	0.3	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1034	0.8	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1035	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1036	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
D1(1036)	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1036	0.5	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1037	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1038	0.1	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
1038	0.4	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1039	0.05	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1039	0.35	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1040	0.2	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1040	0.5	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1041	0.1	F	4	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1042	0.2	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1042	0.5	N	3	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1046	0.1	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1047	0.3	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.2 1 NC	NAD
1047	0.7	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1048	0.2	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1048	0.6	N	1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1051	0.7	F	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1051	1.7	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1052	1.0	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1052	1.8	N	2	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1054	0.4	F	1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<1 1 NC	NAD
1054	1.0	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1055	0.2	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.5 1 NC	NAD
1056	0.1	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1057	0.15	F	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1057	0.7	N	<1	<0.1 240 180	<0.1 6 NC	<0.1 50 NC	<0.1 270 NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 1 NC	NAD
1020 [TRIPLICATE]	0.3			NT 240 180	NT 6 NC	NT 50 NC	NT 270 NC	NT 10 NC	NT 6 NC	NT 10 NC	NT 300 NC	NT 160 NC	NT 1 NC	NT

Notes to Table 19

HIL / HSL exceedance EIL / ESL exceedance ML exceedance HIL/HSL and EIL/ESL exceedance **Bold** = Lab detections Key: Lab result (HIL/HSL value / EIL/ESL value)

ML and HIL/HSL/EIL/ESL exceedance red = DC exceedance NT = Not tested NL = Non limiting NC = No criteria NAD = No asbestos detected

a QA/QC replicate of sample listed directly below the primary sample

HIL/HSL HIL A / HSL A/B - NEPC 2013. Schedule B1
EIL/ESL Urban Residential and Public Open Space - NEPC 2013. Schedule B1

Table 20: Laboratory Results of Asbestos Identification Testing – Soil and Material

Sample Location	Location (see Drawing 7)	Sample Type	Asbestos Identification
S1	House 1	Soil	NAD
S3	House 2	Soil	NAD
S4	House 4	Fragment	Chrysotile and Amosite Asbestos Detected
S4A	House 4	Soil	NAD
S6	Top hill	Soil	NAD
S7	Top hill	Soil	NAD
S8	Top hill	Soil	NAD
S9	Stable	Soil	NAD
S10	Stable	Soil	NAD
S12	Stable	Soil	NAD
S14	Buildings near Stable	Beige fibre cement fragment	Chrysotile, Amosite and Crocidolite Asbestos detected
S14A	Buildings near Stable	Soil	NAD
S15	Buildings near Stable	Grey compressed fibre Fragment	Chrysotile, Amosite and Crocidolite Asbestos detected
S15A	Buildings near Stable	Soil	NAD
S16	Buildings near Stable	Soil	NAD
S17	Locomotive Shed	Grey fibre cement Fragment	Chrysotile and Amosite Asbestos detected
S17A	Locomotive Shed	Soil	NAD
S18	Locomotive Shed	Beige fibre cement Fragment	Chrysotile and Amosite Asbestos detected
S18A	Locomotive Shed	Soil	Chrysotile Asbestos detected
S19	Locomotive Shed	Soil	NAD
S21	Fitters Shed	Beige fibre cement Fragment	Chrysotile and Amosite Asbestos detected
S21A	Fitters Shed	Soil	NAD
S22	Fitters Shed	Soil	NAD
S23	Fitters Shed	Soil	NAD
S24	Fitters Shed	Soil	NAD
S25	Fitters Shed	Soil	NAD
S26	Fitters Shed	Soil	NAD
S27	Next to Fitters Shed	Soil	NAD
S28	Bath House	Soil	NAD
S30	House 4	Soil	NAD
S32	House 5	Soil	NAD
S33	Conveyor	Soil	NAD
S34	Conveyor	Soil	NAD
S35	Conveyor	Soil	NAD
S37	Conveyor	Soil	NAD
S38	Conveyor	Soil	NAD
S39	Conveyor	Soil	NAD
S40	Conveyor	Soil	NAD
S41	Transformer	Soil	NAD
1039F	Pit 1039	Fragment	Chrysotile, Amosite and Crocidolite Asbestos detected

Notes to Table 20: NAD = *Not detected at the reporting limit of 0.1g/kg

13. Comments

13.1 Contamination Status

Eighty-six (86) soil samples (including three field replicate) were analysed for the suite of testing outlined in Section 12. The results were compared against NEPM for Health Based Investigation / Screening Levels, Ecological Investigation / Screening Levels, Total Petroleum Hydrocarbon Management Limits for a conservative residential land use as discussed in Section 11.

The majority of samples tested were below the relevant criteria for:

- Health investigation and screening levels;
- Ecological investigation and screening levels; and
- Total petroleum hydrocarbon management limits.

A number of exceedances of the adopted site criteria were recorded and are summarised in Table 21 below. The location of the exceedances are also shown on the following drawings in Appendix G:

- Drawing 3: Exceedances of adopted health screening levels;
- Drawing 4: Exceedances of adopted ecological screening levels for total recoverable hydrocarbons; and
- Drawing 5: Exceedances of adopted ecological screening levels for metals.

As shown on the abovementioned drawings, the exceedances of the adopted HSLs are located within the filled section of Area B (northern cleared section) and are predominantly related to minor exceedances of the F2 hydrocarbon fraction.

The exceedance of the adopted ESLs are more wide spread covering the filled areas of the site and were found for both hydrocarbons and metals, with the metals more contained within the central filled section of Area B, although some isolated exceedances were recorded in filling around the southern area.

Table 21: Summary of Exceedences of Adopted Site Assessment Criteria

Analyte	Criteria / Pit where exceedence occurred			
	EIL/ESL	HIL/HSL	Management Limits	Direct Contract
Cadmium	68 (prev. investigation)	-	-	-
Arsenic		68 (prev. investigation)	-	-
Copper	1016, 1019 to 1021 and 1046, 68 (prev. investigation)	-	-	-
Lead	-	1019 68 (prev. investigation)	-	-
Zinc	1016, 1019, 1020 and 1055 68 (prev. investigation)	1019 68 (prev. investigation)	-	-
$>C_{10}$-C_{16} (F2)	1009, 1010, 1017,1024, 1030, 1031,1034, 1054	1009, 1010, 1017, 1025, 1030, 1031, 1034, 1054	-	-
$>C_{16}$-C_{34} (F3)	1002 to 1004, 1029, 1031, 1033 to 1035, 1042	-	1024	1024
Benzo(a)pyrene	-	1024, 13 (prev. investigation)	-	-
Asbestos	--	S18A	-	-

Notes to Table 21: Prev. Investigation = Previous Investigation

It is noted that the specific fraction range for TRH assessment in relation to health and ecological risk assessment has changed since the previous investigation and hence direct comparison of the previous results to the NEPM requirements (Ref 4) is not possible. However, based on a nearest applicable fractions, concentrations which may relate to exceedances of the NEPM ecological investigation limits requirements were recorded in Pits 3, 6, 13, 13A, 17 to 19, 21, 24 to 26, 36 and 37. The results were not indicative of likely exceedances of the health investigation levels for TRH.

There was no obvious visual or olfactory evidence of gross contamination (i.e. no obvious staining or odour) observed at the surface or within the investigation bores and pits, apart from the presence of coal rejects in some areas.

The laboratory results were generally consistent with the visual and olfactory “screening” that suggested the absence of gross contamination within the test bores and pits.

It is noted that hazardous building materials (HBM), notably asbestos, was observed at a number of locations around the former structures. Asbestos was generally not present in the samples of soil tested from these areas, however it is noted that asbestos fibres were encountered in the soil from Pit 18 undertaken during the previous investigation and asbestos was encountered in the soil in surface sample S18A for the current investigation. A number of fragments of cement sheeting observed on the surface tested positive for the presence of chrysotile, amosite and crocidolite asbestos. Therefore, there is a high risk of HBM in unobserved or untested parts of the site.

13.2 Conclusions

The proposed development includes creation of a residential subdivision across the site. Given the exceedances encountered in a number of the pits across the site (ecological investigation levels and health investigation levels) remediation of the impacted areas should be undertaken.

Given the contamination issues identified and the geotechnical constraints regarding combustibility issues and the anticipated bulk earthworks requirements for the proposed development, the impacted areas could be remediated by removal of the affected soils and placement within a designated area elsewhere on the site (i.e. on-site management), which is appropriately capped with VENM / ENM material or permanent pavement/building slabs subject to additional investigation to confirm the leachability characteristics of the soil/fill with elevated contaminant concentrations. Further assessment will be required in the areas identified as having chemical concentrations exceeding the adopted site assessment criteria (as outlined in Table 21) to identify the extent of the impacted soils, the volume of soil required to be removed to a designated containment area on the site and the leachability characteristics of the material as discussed above. Owing to the non-homogeneity of the filling, and for a number of additional reasons, as discussed below, the remainder of the filled area of the site should be capped with clean material (i.e. non-combustible material with chemical contamination concentrations below designated remediation acceptance criteria suitable for residential landuse.

It is noted that assessment of the combustibility of the coal reject filling encountered over the majority of the filled area returned total combustible concentrations above the adopted 40% limit (with results ranging from <5% to about 60%). Placement of a suitable non-combustible capping over this material may be required. Furthermore, given the presence of asbestos at the surface of the site, and within the soil within one of the pits and one surface soil sample, management of the site may include capping with clean (VENM) material. Consideration should be given to the depth of VENM or ENM capping in relation to the following items:

- Depth of cover to identified combustible material;
- Possible presence of asbestos impacted soils;
- Geotechnical considerations and the need for an engineered filling layer as a protection layer against possible pothole subsidence;
- Future development in the proposed residential subdivision (i.e. any likely excavations such as pools, planting of trees which may grow roots into the underlying combustible material); and
- Vapour intrusion risk for the identified F2 exceedances.

For preliminary design purposes, and subject to additional analysis, it is suggested that a cap of 1 m thickness is adopted for the impacted areas (i.e. areas with contamination impacted soils and combustible material). It is noted that some of the existing filling may be suitable to act as capping material subject to specific additional investigation during bulk earthworks. In areas of shallow filling (where contamination has not been identified), say less than 0.7 m, it may be possible to blend clean VENM material with the existing filling to form a lower combustibility capping layer. In this regard, no assessment of potential impact of the identified contamination on the regional groundwater has been undertaken at this stage. Prior to development of the RAP for the site, it is recommended that additional investigation to assess groundwater and surface water contamination should be undertaken, particularly within the area of the site adjacent to Camp Creek. Further investigation is also recommended to assess the decommissioning undertaken for former mine tunnels and shafts to confirm potential contaminants associated with backfill, potential hazardous mine gases which may be leaking from the former tunnels/shafts and requirements of the mine subsidence board in relation to building over or in the vicinity of these structures. Based on previous experience on similar sites, excavation, installation of a suitable plug, re-compaction of backfill and building exclusion zones may be required in these areas.

Following the additional investigations outlined above, it is recommended that a remediation action plan (RAP) is prepared for this site to address the identified contaminants, in particular the hydrocarbon, heavy metal and asbestos impacted soils in the filled areas of the site. It is noted that following capping of the site restrictions may be placed on the types of development permissible, such as a restriction of deep rooted plants, limits on excavation in order to maintain the minimum thickness of capping material (unless additional localised remediation is undertaken) and prohibition on groundwater extraction. It is further noted that the appropriate remediation strategy is somewhat dependent on the final layout of the proposed subdivision and hence several iterations of the remediation action plan may be required for this site.

Following additional investigation as discussed above and appropriate remediation of the hydrocarbon, heavy metal and asbestos impacted soils, it is anticipated that the site could be rendered suitable for the proposed residential development. It should be noted that significant areas of the site were inaccessible during the present investigation owing to dense vegetation. Therefore, supplementary investigation should be undertaken within these vegetated areas once clearing of the site has occurred. This is particularly relevant in the eastern part of Area B, where deep filling with significant anthropogenics was present within the pits undertaken in accessible areas. Similarly, significant stockpiles of coal reject and concrete were observed in the dense vegetation within the south-eastern part of Area A.

Due to the previous development history on parts of the site, it is recommended that an unexpected finds protocol is incorporated in conjunction with construction activities during development as a precautionary measure.

14. References

1. Douglas Partners Pty Ltd, “Preliminary Contamination and Geotechnical Assessment, Proposed Residential Subdivision, Catherine Hill Bay”, Project 39662C-01, dated November 2007.

2. Douglas Partners Pty Ltd, "Additional Contamination Assessment and Remediation Requirements, Proposed Residential Development, Catherine Hill Bay", Project 39662C, dated 6 August 2008.
3. NSW EPA Contaminated Sites (2011), 'Guidelines for Consultants Reporting on Contaminated Sites', August 2011.
4. National Environment Protection Council (2013), "National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013", 11 April 2013.
5. NSW EPA, Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 "The Excavated Natural Material Order 2014".

15. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at Lots 1 and 2 in DP1180181, Colliery Road, Catherine Hill Bay with reference to DP's proposal NCL180191 dated 14 August 2018 and acceptance received from Darren Nicholson of Wallalong Land Developments Pty Limited dated 4 October 2018. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Wallalong Land Developments Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Asbestos has been detected by observation or by laboratory analysis at the surface and was detected in the soils in one pit during previous investigation. Building demolition materials, such as concrete, brick, tile, metal, former footings were located in previous below-ground filling and/or on the surface, and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints, or to parts of the site being inaccessible and not available for inspection/sampling, or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

The scope for work for this investigation did not include the assessment of groundwater for contaminants, within or adjacent to the site.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

About this Report
Sampling Methods
Soil Descriptions
Symbols and Abbreviations

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

Douglas Partners

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726-1993, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

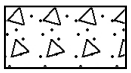
Symbols & Abbreviations

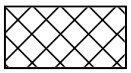
Graphic Symbols for Soil and Rock

General

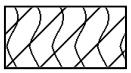
Asphalt

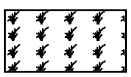
Road base

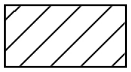

Concrete

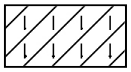

Filling

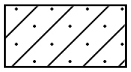
Soils


Topsoil

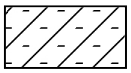

Peat

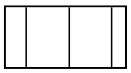

Clay

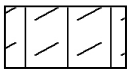

Silty clay

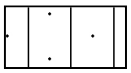

Sandy clay

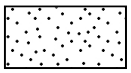
Gravelly clay

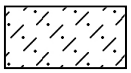

Shaly clay

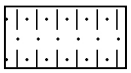

Silt


Clayey silt


Sandy silt

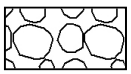

Sand

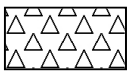

Clayey sand


Silty sand

Gravel

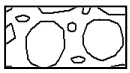
Sandy gravel


Cobbles, boulders

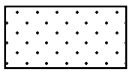

Talus

Sedimentary Rocks

Boulder conglomerate


Conglomerate

Conglomeratic sandstone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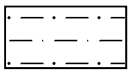
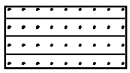
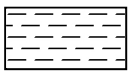
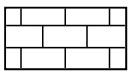

Siltstone

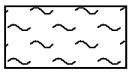

Laminite

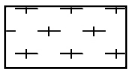

Mudstone, claystone, shale

Coal


Limestone

Metamorphic Rocks


Slate, phyllite, schist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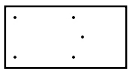
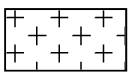
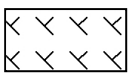
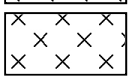
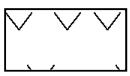

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia

Porphyry

Appendix B

Plates A1 to A17 – Site Condition Photos

Photo 1: Site Photo 1 - Looking south-west

Photo 2: Site Photo 2 - In area of former bathhouse

Photo 3: Site Photo 3 - Remant bitumen haul road (looking east)

Photo 4: Site Photo 4 - Western Area B - looking south-west

Photo 5: Site Photo 5 - Remnant building materials including bricks, concrete

Photo 6: Site Photo 6 - Clear access track, looking south-west

Photo 7: Site Photo 7 - north-western Area B, with previous DP bore

Photo 8: Site Photo 8 - In filled stone well, looking north

Photo 9: Site Photo 9 - in-filled stone well, looking north

Photo 10: Site Photo 10, Fill stockpile near infilled stone well

Photo 11: Site Photo 11 - Coal reject on ground surface beyond site

Photo 12: Site Photo 12 - Coal chitter on surface in former rail line

Photo 13: Site Photo 13 - In-filled stone well, looking south

Photo 14: Site Photo 14 - Along former rail line, looking north-east

Photo 15: Site Photo 15 - In area of former conveyor, looking south

Photo 16: Site Photo 16 - In area of former conveyor, looking north-west

Photo 17: Site Photo 17 - Undergrond cable marker

Photo 18: Site Photo 18 - Dam on northern boundary, looking north-east

Douglas Partners Geotechnics / Environment / Groundwater	**Detailed Contamination Assessment**	PROJECT:	91402.03
	Proposed Residential Development	Plate	A9
	Flowers Drive, Catherine Hill Bay	REV:	A
	Client: Wallaong Land Developments Pty Ltd	DATE:	14-Mar-19

Photo 19: Site Photo 19 - Access track near southern boundary

Photo 20: Site Photo 20 - Stockpiled material in tree covered area

Photo 21: Site Photo 21 - Existing dwelling near southern boundary

Photo 22: Site Photo 22 - Exising building on Colliery Road

Photo 23: Site Photo 23

Photo 24: Site Photo 24 - Existing residence

Photo 25: Site Photo 25 - Existing residence

Photo 26: Site Photo 26 - Existing residence

Photo 27: Site Photo 27 - Coal chitter on surface near former rail line

Photo 28: Site Photo 28 - Filled area in eastern Area B

Photo 29: Site Photo 29 - Filled, cleared area in eastern Area B

Photo 30: Site Photo 30 - South-western Area A

Photo 31: Site Photo 31 - Area A, looking north-east

Photo 32: Site Photo 32 - Area a, looking east

Photo 33: Site Photo 33 - Coal chitter piles, looking south-east

Photo 34: Site Photo 34 - Coal chitter piles, looking south-east

Appendix C

Test Pit Logs – Pits 1001 to 1042 and 1044 to 1054 and 1056 to 1057 (present investigation)

Borehole 1043 and 1055 (present investigation)

Plates 1 to 29 – Photos of Test Pits (present investigation)

Test Pit Logs – Pits 1 to 42, 44, 65, 66 and 13A (previous investigation)

Borehole Logs – Bores 103, 107 and 108 (previous investigation)

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371985
NORTHING: 6332165

PIT No: 1001
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.2	FILLING - Generally comprising brown medium to coarse sized sandy gravel filling, gravel comprising sandstone and river pebbles, subangular / subrounded, some cobbles and boulders, humid		E	0.1		PID=1.6		
	0.5	FILLING - Generally comprising brown fine to coarse grained sandy gravelly clay filling, medium to coarse sized pebbles, moist		E	0.3		PID<1		
	1	SANDY CLAY - Very stiff, grey-orange fine to medium grained sandy clay, M>Wp		E	0.7		pp = 350 PID<1		1
					1.4		pp = 350		
	1.6	Pit discontinued at 1.6m							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371923
NORTHING: 6332176

PIT No: 1002
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.15	FILLING - Generally comprising fine to medium grained sandy clay filing, some rootlets, moist At 0.1m, fabric							
		FILLING - Generally comprising dark-grey sandy coal filling coal fine to medium sized with fines, some ash, trace sandstone / pebble gravel and rootlets, moist		E	0.3		D6		
	0.6	FILLING - Generally comprising brown fine to coarse grained sandy clay filling, some gravel, moist		E	0.7		PID=1.7		
	0.8	SANDY SILT - Firm grey motled orange fine to medium grained sandy silt, wet							
	1								1
	1.4	SANDY CLAY - Stiff, grey motled orange fine to medium grained sandy clay, M>Wp		E	1.5		pp = 120 PID<1		
	2	From 2.0m, very stiff							2
	2.2	Pit discontinued at 2.2m, limit of investigation			2.2		pp = 250		

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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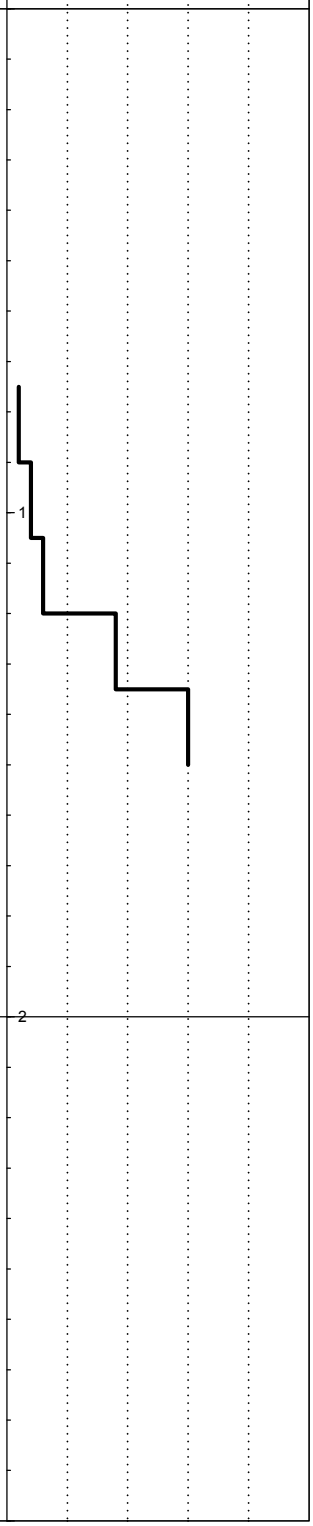
TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 3711901
NORTHING: 6332125

PIT No: 1003
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey clayey coal filling, coal fine to coarse sized with some fines and cobbles, some sandstone and rootlets, moist		E	0.4				
	0.8	SANDY CLAY - Firm brown fine to medium grained sandy clay, trace rootlets, M>Wp		E	1.0		pp = 80 PID<1		
	1.3	SANDY CLAY - Very stiff, grey melted orange fine to medium grained sandy clay, trace rounded gravel, M>Wp (sulphuric odour)			1.5		pp = 350		
	2.0	Pit discontinued at 2.0m, limit of investigation							



RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371870
NORTHING: 6332126

PIT No: 1004
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising black coal filling, fine to coarse sized with fines, some clay and sand, trace pebbles and rootlets, moist		E	0.2		PID<1		
	0.4	FILLING - Generally comprising grey-brown fine to medium grained sandy clay filling, humid		E	0.7		PID<1		
1	1.0	SANDY GRAVELLY CLAY - Stiff pale grey medium to coarse grained sandy gravelly clay, gravel fine to medium sized pebbles, M>Wp (sulphuric odour)		B	1.1				1
				E	1.2		pp = 180 PID<1		
		From 1.5m, very stiff			1.5		pp = 280		
2					2.0		pp = 250		2
	2.1	Pit discontinued at 2.1m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371838
NORTHING: 6332175

PIT No: 1005
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising brown-orange fine to medium grained sandy clay filling, some rounded gravel, moist		E	0.1		PID<1		
	0.2	FILLING - Generally comprising black coal filling, generally fine to medium sized with fine to medium sized with fines, moist							
	0.6	FiLLING - Generally comprising brown sandy gravelly clay filling, gravel comprising fine to coarse rounded pebbles, some coal, moist							
1	1.0	SANDY CLAY - Stiff, orange-brown fine to medium grained sandy clay, some gravel, M>Wp		E	1.2		pp = 180 PID<1	▽	1
		From 1.5m hard, light grey			1.5		pp = 400		
	1.7	Pit discontinued at 1.7m, limit of investigation							
2									2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Seepage at 1.0m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371830
NORTHING: 6332217

PIT No: 1006
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown fine to medium grained sandy clay filling, trace rootlets							
	0.15	FILLING - Generally comprising black coal filling, generally fine to coarse sized coal and fines, some siltstone and sand, moist		E	0.2		PID=5.1		
	0.3	FILLING - Generally comprising brown gravelly sand filling, gravel fine to medium sized sandstone, some coal, trace weed / branches, moist		E	0.5		PID=3		
	0.7	SANDY CLAY - Stiff orange-grey fine to medium grained sandy clay, some rounded gravel, M>Wp		E	0.9		pp = 150 PID=2.3		
	1	From 1.1m hard, pale-grey stained red			1.8		pp = 550		
	2 2.0	Pit discontinued at 2.0m, limit of investigation							

Dynamic Penetrometer Test (blows per 150mm): 5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth
LOGGED: Parkinson
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371787
NORTHING: 6332182

PIT No: 1007
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising gravelly sand filling, gravel medium to coarse sized rounded gravel, some clay, trace rootlets, humid		E	0.1		PID<1		
	0.25	FILLING - Generally comprising black coal filling, fine to coarse sized, trace cobbles, humid							
	0.4	SANDY GRAVELLY CLAY - Brown fine to medium sized sandy gravelly clay, gravel comprising pebbles and coal, moist		E	0.6		PID<1		
	0.7	SANDY CLAY - Stiff, grey mottled orange medium to coarse grained sandy clay, some rounded gravel, M>Wp		E, B	1.0		pp = 150 PID<1		
1									1
	1.9	Pit discontinued at 1.9m, limit of investigation			1.9		pp = 170		
2									2

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371730
NORTHING: 6332189

PIT No: 1008
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey sandy coal filling, coal fine to coarse sized, some rounded gravel and roots, moist		E	0.3		PID=1.5		
	0.5	FILLING - Generally comprising brown-grey clayey gravelly sand filling, gravel comprising medium to coarse sized coal and rounded gravel, wet At 0.6m two 100mm thick railway lines approximately 3 m long From 0.8m, saturated		E	1.0		PID=1.3	04-12-18	
	1.4	SANDY CLAY - Firm dark-grey fine to medium grained sandy clay, some roots and rootlets, M>Wp		E	1.5		pp = 80 PID=1.5		
	2.2	Pit discontinued at 2.2m, strong seepage from 0.7m			2.0		pp = 80-110		

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Free groundwater observed at 0.8m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371753
NORTHING: 6332097

PIT No: 1009
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising black coal filling, coal fine to boulder sized, some sandstone gravel / cobbles / boulders, sand and rootlets moist		E	0.6		PID<1		
		From 0.8m generally coarse to boulder sized							
	0.9	FILLING - Generally comprising grey-brown sandy gravel filling, gravel subangular fine to medium sized, comprising siltstone and coal, wet		E	1.2		PID=2.5	▽	
	1.5	SAND - (Loose) grey fine to medium grained sand, some clay, trace roots, wet		E	2.0		PID<1		
	2.3	SANDY CLAY - Very stiff, dark-grey fine to medium grained sandy clay, M>Wp		E	2.4 2.4		PID<1 pp = 250		
	2.5	Pit discontinued at 2.5m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Strong seepage at 1.2m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371729
NORTHING: 6332129

PIT No: 1010
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising black coal filliing, coal fine to cobble sized, trace sand, sandstone and rootlets, moist		E, B	0.3		PID<1		
	1	From 1.0m coal generally coarse to boulder size, some sandstone cobbles and boulders							1
	2			E	2.0		PID<1		2
	2.2	Pit discontinued at 2.2m, (collapsing)							

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371690
NORTHING: 6332143

PIT No: 1011
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising grey gravelly sandy silt filling, gravel medium to coarse sized rounded river pebbles, some medium to coarse sized coal and clay, trace rootlets, moist		E	0.3		PID=3.1		
	0.6	SANDY CLAY - Stiff orange-grey fine to medium grained sandy clay, trace rounded gravel,M>Wp			0.7		pp = 200		
	1	From 1.0m very stiff		E	1.0		pp = 250 PID<1		
		From 1.2m pale grey mottled orange							
	1.8	Pit discontinued at 1.8m, limit of investigation			1.8		pp = 300		
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371589
NORTHING: 6332145

PIT No: 1012
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.1	FILLING - Generally comprising dark-grey black sandy coal, coal fine to coarse sized, trace steel rod and rootlets, humid							
		SANDY GRAVELLY SILT - Soft, grey fine grained sandy gravelly silt, gravel subrounded fine sized, wet (possible filling)		E, B	0.3		PID<1		
	1			E	1.0		PID<1		
	1.2	SANDY CLAY - Firm orange-grey fine to medium grained sandy clay, M>Wp		B	1.3			03-12-18	
					1.4		pp = 120		
		From 1.7m very stiff		E	1.7		pp = 250 PID<1		
	2	From 2.0m pale grey			2.0		pp = 350		
	2.2	Pit discontinued at 2.2m, limit of investigation							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Seepage observed at 1.2m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371553
NORTHING: 6332122

PIT No: 1013
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark-grey sand and coal filling, fine to coarse sized coal, trace steel bar, concrete rootlets and coal cobbles, humid							
	0.9	GRAVELY SANDY SILT - Pale grey fine to coarse grained gravely sandy silt, gravel rounded fine to medium sized, moist (possible filling)		E	1.0		PID=2.7		1
	1.2	SANDY CLAY - Stiff orange-grey fine to medium grained sandy clay, M>Wp			1.3		pp = 120		
				E	1.4		PID=2.6		
		From 1.5m very stiff mottled red			1.5		pp = 220		2
	2.2	Pit discontinued at 2.2m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371597
NORTHING: 6332091

PIT No: 1014
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown sandy clay gravelly clay filling, gravel comprising rounded gravel and coal, some rootlets, humid		E	0.05		PID=2.0		
	0.15	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay, some fine rounded gravel, M>Wp		E	0.6		pp = 350-450 PID=1.6		
				B	0.7				
		From 0.9m hard			0.9		pp = 450		
	1.7	Pit discontinued at 1.7m, limit of investigation							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20; 1; 2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371576
NORTHING: 6332035

PIT No: 1015
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising grey-brown sand and gravel filling, gravel fine to coarse sized subrounded river gravel, some rootlets, trace coal and glass, moist		E	0.1		PID=4.6		
	0.15	SANDY CLAY - Very stiff, orange brown, fine to medium grained sandy clay, trace gravel and rootlets, M>Wp		E	0.3		pp = 230 PID=2		
		From 0.5m, hard, pale grey red rock like properties in puts			0.5		pp = 420		
	1								1
	1.35	SANDSTONE - Extremely low strength to very low strength, orange brown mottled grey medium grained sandstone							
	1.4	Pit discontinued at 1.4m, limit of investigation							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371540
NORTHING: 6332029

PIT No: 1016
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey sand and coal filling, fine to medium grained sand		E	0.2		PID=3.9		
	0.5	At 0.45m steel pipe in southern end of pit							
		FILLING - Generally comprising brown medium to coarse grained sand and gravel filling, gravel fine to medium sized, moist		E	0.6		PID=3		
	0.7	SANDY SILT - (Firm), grey fine grained sandy silt, some gravel, wet (possible filling)		E	1.0		PID<1		1
	1.2	SANDY CLAY - Very stiff, orange brown fine to medium grained sandy clay, M>Wp		B	1.2				
				E	1.4		pp = 320 PID<1		
	1.8	SILTY CLAY - hard, pale grey-red silty clay, trace fine gravel, M>Wp			1.9		pp >=400		
	2.0	Pit discontinued at 2.0m, limit of investigation							2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371542
NORTHING: 6332077

PIT No: 1017
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising black crushed coal filling, coal fine to coarse/cobble sized, some coarse rounded gravel, trace steel pipe, siltstone, wood and concrete slab boulders, moist		B E	0.4		PID=2		
	0.7	Pit discontinued at 0.7m, refusal on concrete slab							
	1								1
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Pit attempted 2m to west (refusal on slab)

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371479
NORTHING: 6332012

PIT No: 1018
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown clay and gravel filling, gravel medium to coarse sized river gravel, trace coal rootlets, cobbles and steel, humid		E	0.2		PID=3.2		
	0.45	SANDY CLAY - Very stiff, pale grey red, fine grained sandy clay, M>Wp At 0.5m concrete slab in eastern end of pit		E	0.7		pp = 350 PID=4.1		
	1	From 0.9m hard, trace rounded gravel, rock like properties			1.0		pp >400		
	1.5	Pit discontinued at 1.5m, limit of investigation							
	2								

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371467
NORTHING: 6332048

PIT No: 1019
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey clayey coal filling, coal fine to coarse, sand rootlets, trace steel, moist		E	0.1		PID<1		
	0.2	FILLING - Generally comprising brown sandy gravel filling, medium sized subangular gravel, trace coal, moist		E	0.3		PID<1		
	0.4	SANDY CLAY - Very stiff grey orange, fine to medium grained sandy clay, trace fine rounded gravel, M>Wp							
		At 0.4m concrete slab in eastern end of pit, approximate 200mm thick		E	0.6		pp = 220 PID=2		
		From 0.9m hard, mottled red			1.0		pp >400		
	1								1
					1.5		pp >400		
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								2

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371464
NORTHING: 6332092

PIT No: 1020
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown sandy clayey gravel filling, sand fine to coarse grained, gravel fine to cobble sized generally comprising coal, siltstone and rounded river gravel , trace rootllets , moist		E	0.3		PID=5.8		
	0.8	FILLING - Generally comprising black sandy crushed coal filling, generally fine to coarse coal, grey fine to medium grained sand, some red siltstone cobble sized and pale grey medium sized, trace steel bars/pins, glass, electrical wire, rootlets, moist		E	1.1		PID=7.3		
	1			B	1.3				
	2			E	2.1		PID=3		
	3.0								

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371464
NORTHING: 6332092

PIT No: 1020
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		SANDY CLAY - Firm, brown orange, fine to medium grained sandy clay, M>Wp (possible filling)		E	3.05		pp = 80 PID=2.5		
	3.1	Pit discontinued at 3.1m, limit of investigation			3.1				
	4								4
	5								5

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371453
NORTHING: 6332138

PIT No: 1021
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.0	FILLING - Generally comprising dark grey black sand and coal filling, fine to medium grained sand, fine to coarse coal, trace rootlets, moist		E	0.3		PID=1.7		
	0.5	FILLING - Generally comprising brown gravel and clay filling, gravel rounded river gravel							
	0.8	FILLING - Generally comprising dark grey black clayey sand filling, coal fine to medium sized, some bricks concrete and steel rods / reinforcement steel cable, moist		E	1.0		PID=1.5		
	2.0			E	2.0		PID<1	▽	
	2.7	CLAYEY SAND - (Loose) grey mottled orange medium to coarse grained clayey sand, some fine rounded gravel, wet (possible filling)		E	2.8		PID=1.6		
	3.0								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth
LOGGED: Parkinson
SURVEY DATUM: MGA94

WATER OBSERVATIONS: Seepage at 2.6m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371453
NORTHING: 6332138

PIT No: 1021
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm) 5 10 15 20
		SANDY CLAY - Stiff grey mottled orange medium to coarse grained sandy clay, some fine rounded gravel, M>Wp							
	3.3	Pit discontinued at 3.3m, limit of investigation		E	3.3		pp = 120 PID=1.3		
	4								4
	5								5

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Seepage at 2.6m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371438
NORTHING: 6332013

PIT No: 1022
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising grey brown, fine to coarse grained sandy gravelly clay filling, gravel comprising siltstone, rounded river gravel and coal, some rootlets, moist		E	0.1		PID=3.8		
	0.15	SANDY CLAY - Very stiff, orange grey fine to medium grained sandy clay, some rootlets, M>Wp			0.2		pp = 300		
	0.3	SILTY CLAY - Hard, pale grey mottled red silty clay, trace fine to medium subrounded gravel, M<Wp		E, B	0.6		pp >400 PID<1		
	1				1.5		pp >400		
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371230
NORTHING: 6332014

PIT No: 1023
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising orange-brown fine to medium grained sandy clay filling, some rootlets, trace fine coal, humid			0.1	E	PID =2		
	0.2	SANDY CLAY - Very stiff to hard, orange-brown, fine to medium grained sandy clay, M>Wp			0.5		pp >600 PID=2		
	0.7	At 0.65m, tree root							
	0.75	SANDSTONE - (Medium strength), pale grey fine grained sandstone							
		Pit discontinued at 0.75m, refusal							
	1								
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371437
NORTHING: 6332116

PIT No: 1024
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey sand and coal filling, coal medium to cobble sized, trace rootlets and concrete, moist		E	0.2		PID=1		
		At 0.4m, steel railway line in northern side of pit (old railway line)		E	0.6		PID=1.3		
	0.7	At 0.65m, rail sleepers							
		CLAYEY SILT - Firm, grey fine grained clayey silt, M>>Wp (strong hydrocarbon odour)		E	1.2		pp = 400 PID=5.1		
	1.7	SANDY CLAY - Firm, orange brown fine to medium grained sandy clay, M>>Wp (strong hydrocarbon odour)		E	1.8		pp = 80 PID=6.5		
		From 2.5m, stiff, M>Wp			2.5		pp = 180		
	2.7	Pit discontinued at 2.7m, limit of machine		E	2.7		PID=5.5		

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371415
NORTHING: 6332143

PIT No: 1025
PROJECT No: 91402.03
DATE: 28/11/2018
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey coal filling, coal comprising fine sand coal and fine to coarse sized coal fragments, trace siltstone gravel and rootlets, humid		E	0.2		PID=1		
	0.25	FILLING - Generally comprising grey sandy silt filling with trace siltstone gravel and ash, humid		E	0.4		PID<1		
	0.55	FILLING - Generally comprising sandy clay filling, M>Wp							
1	1.0	FILLING - Generally comprising fine to medium grained clayey sand filling with some coal, siltstone gravel, subrounded gravel, trace steel, moist From 1m to 1.15m, coal filling band		E	1.8		PID<1		1
2	2.0	SANDY CLAY - Silt orange grey, fine to medium grained sandy claystone subrounded gravel, M>Wp		E	2.4		pp = 150 PID<1		2
		From 2.8m, very stiff		E	2.8		pp = 250		

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371415
NORTHING: 6332143

PIT No: 1025
PROJECT No: 91402.03
DATE: 28/11/2018
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm) 5 10 15 20
	3.1	Pit discontinued at 3.1m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371403
NORTHING: 6332029

PIT No: 1026
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
	0.15	FILLING - Generally comprising dark-grey silt filling, some sand and rootlets, wet							
		FILLING - Generally comprising brown clay and gravel filling, gravel subrounded fine to coarse sized sandstone / river gravel, wet		E	0.3		PID=3.6		
	0.4	SANDY CLAY - Very stiff, orange-grey fine to medium grained sandy clay, trace fine subrounded gravel, trace roots, M>Wp		E	0.6 0.6		pp = 350 PID=2.4		
	0.9	SILTY CLAY- Hard, pale-grey mottled red silty clay, M>Wp			1.0		pp = 450		
1									1
	1.6	Pit discontinued at 1.6m, limit of investigation							
2									2

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371399
NORTHING: 6332067

PIT No: 1027
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising fine to medium grained sandy clay filling, some coal, fine gravel, trace rootlets, moist		E	0.2		PID<1		
	0.35	SANDY SILT - Firm, grey fine grained sand silt, humid		E	0.5		PID<1		
	0.6	SANDY CLAY - Stiff orange-brown filling sandy clay, trace fine gravel, M>Wp		B E	0.9 0.9 0.9		PID<1 pp = 120		
	1	From 1.2m, very stiff, grey mottled orange red			1.2		pp = 250		
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth
LOGGED: Parkinson
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371399
NORTHING: 6332106

PIT No: 1028
PROJECT No: 91402.03
DATE: 28/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark-grey gravelly sand filling, gravel comprising siltstone, river gravel and coal fine to coarse size, some rootlets, trace brick, steel rail spikes, water pipe, large steel bars, humid		E	0.4		PID=1 D3		
		From 0.7m, increase coal content							
	0.9								
1		FILLING - Generally comprising brown fine to medium grained clayey sand / sandy clay filling, trace fine gravel, M>Wp		E	1.0		PID<1		1
	1.2								
		SANDY CLAY - Very stiff, orange grey fine to medium grained sandy clay, trace fine rounded gravel, M>Wp From 1.0		E	1.4		pp = 320 PID<1		
		From 1.9m, grading to rock like properties							
2					2.0		pp = 600		2
	2.1	Pit discontinued at 2.1m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371386
NORTHING: 6332138

PIT No: 1029
PROJECT No: 91402.03
DATE: 28/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising black sandy coal filling, coal fine to medium size, trace rootlets, fibro and glass, huimid		E	0.2		PID=1		
	0.25	FILLING - Generally comprising grey fine to medium grained sandy silt filling, trace rootlets and gravel, humid (possible natural)			0.5		PID<1		
	0.65	SANDY CLAY - Very stiff orange-grey sandy clay, trace rootlets, M>Wp		E	0.8		pp = 220		
	1				1.2		pp = 220		
	1.5	Pit discontinued at 1.5m, limit of investigation							
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371351
NORTHING: 6332039

PIT No: 1030
PROJECT No: 91402.03
DATE: 30/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown gravelly clay filling, gravel comprising medium to coarse sized rounded gravel, trace sandstone cobbles, moist		E	0.3		PID<1		
	0.45	FILLING - Generally comprising dark grey ash filling, trace coal, humid		E	0.55		PID=3.1		
	0.65	FILLING - Generally comprising brown fine to medium grained clayey sand filling, some medium to coarse sized sandstone and river gravel, trace roots, moist		E	0.9		PID<1		
1									1
	1.1	FILLING - Generally comprising dark-grey black sandy coal filling, some clay, coal medium to cobble sized, trace steel pieces, moist		E	1.2		PID=3.1		
	1.35	FILLING - Generally comprising grey-brown, fine to coarse grained sandy clay filling, some fine to coarse gravel, moist (possible natural (firm))		E	1.7		PID<1		
2	2.0	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay, some fine rounded gravel, M>Wp			2.2		pp = 350		2
				E	2.4		PID=3.5		
	2.7	Pit discontinued at 2.7m, limit of investigation			2.7		pp = 380		

Dynamic Penetrometer Test (blows per 150mm): 5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371341
NORTHING: 6332074

PIT No: 1031
PROJECT No: 91402.03
DATE: 28/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark grey sandy coal filling, some rootlets, trace steel pieces, humid		E	0.1		PID<1		
	0.25	FILLING - Generally comprising grey sandy silt filling		E	0.3		PID<1		
	0.4	SANDY CLAY - Hard, orange-grey fine to medium grained sandy clay, some fine gravel, M>Wp			0.5		pp = 400		
		From 0.7m, stiff			0.8		pp = 190		
	1								1
		From 1.5m, very stiff			1.5		pp = 300		
	1.8	Pit discontinued at 1.8m, limit of investigation							
	2								2

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371341
NORTHING: 6332096

PIT No: 1032
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey sandy gravel filling, gravel comprising coarse to cobble sized siltstone and coal, trace rootlets and clay, humid		E	0.3		PID<1 D2		
	0.55	SANDY CLAY - Stiff, orange-grey fine grained sandy clay, M>Wp		E	0.7		PID<1		
					0.8		pp = 250		
	1	From 1.1m, very stiff							
	1.4	Pit discontinued at 1.4m, limit of investigation							
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371333
NORTHING: 6332130

PIT No: 1033
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm) 5 10 15 20
		FILLING - Generally comprising dark grey sand and coal filling, fine to medium grained sand, coal fine to coarse sized, some rootlets, trace concrete boulders, humid		E	0.4		PID=5.1		
	0.55	SANDY CLAY - Very stiff to hard, orange-grey fine to medium grained sandy clay, M>Wp		E	0.7		PID=2		
				B	0.8		pp = 350		
	1								1
					1.2		pp = 300		
		From 1.5m, hard, some subrounded gravel, grading to bedrock							
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371312
NORTHING: 6332149

PIT No: 1034
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm) 5 10 15 20
		FILLING - Generally comprising black coal filling, generally fine to medium sized, some fine trace rootlets, humid		B E	0.3 0.3		PID=2		
	0.6	FILLING - Generally comprising grey fine grained sandy silt filling, trace bricks, humid		E	0.8		PID=2		
1	1.0	CONGLOMERATE - Extremely low strength, extremely weathered orange-brown conglomerate, meduim subrounded gravel		E	1.2		PID<1		1
	1.3	Pit discontinued at 1.3m, refusal							
2									2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371283
NORTHING: 6332066

PIT No: 1035
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm) 5 10 15 20
		FILLING - Generally comprising dark grey sand and coal filling, fine to medium sized coal, some rootlets, humid			0.1	E	PID=2		
	0.15	GRAVELLY SILT - Hard, grey-brown gravelly silt, subrounded gravel, some rootlets, humid							
	0.25	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay, M>Wp			0.4	E	PID=3		
					0.5		pp = 350		
	1				1.0		pp = 400		1
	1.2	Pit discontinued at 1.2m, limit of investigation							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371223
NORTHING: 6332064

PIT No: 1036
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey silty sand filling, fine to coarse grained sand, some fine coal, trace concrete, boulders and gravel, brick, roots, rootlets, and wood, humid			0.1	E	PID=2 D1		
	0.25	SANDY CLAY - Stiff, orange-brown fine to medium grained sandy clay, M>Wp			0.5	E	pp = 240-280 PID=2		
	0.6	SILTY CLAY - Very stiff, pale grey silty clay, M>Wp			0.7	B			
1	1.0	SILTSTONE - (Low to medium strength) pale grey siltstone			1.0		pp = 350		1
	1.1	Pit discontinued at 1.1m, refusal							
2									2

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371206
NORTHING: 6332045

PIT No: 1037
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising grey-brown sandy silt filling, fine to medium grained sand, some rootlets and fine coal, trace bricks, humid			0.1	E	PID=2		
	0.25	SANDY CLAY - Hard, brown-orange fine to medium grained sandy clay, M<Wp			0.3		pp >600		
	0.4	SANDSTONE - Extremely low strength, extremely weathered, light grey-orange fine to medium grained sandstone, some fine to coarse sized subrounded gravel			0.5	E	PID<1		
	0.6	Pit discontinued at 0.6m, refusal							
	1								1
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371169
NORTHING: 6332049

PIT No: 1038
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey sand and coal filling, coal subangular coarse sized, fine to medium grained sand, some silt, trace rootlets, humid			0.1	E	PID = 2		
	0.2	GRAVELLY SAND - (Medium dense), brown, fine to medium grained gravelly sand, gravel medium to coarse sized and subrounded, some silt, humid			0.4	E	PID = 2		
	0.5	SANDY CLAY - Very stiff, orange-brown, fine to medium grained sandy clay, trace gravel, M>Wp		B	0.7	E	pp = 320 PID <1		
	1				1.2		pp = 320		
		From 1.4m, grading to bedrock							
	1.5	Pit discontinued at 1.5m, limit of investigation							
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371183
NORTHING: 6332078

PIT No: 1039
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark grey sand and coal filling, fine to medium grained sand, some rootlets, trace clay, tile, glass and fibro, humid			0.05	E	PID=2		
	0.25	SANDY SILT - Hard, brown fine to medium grained sandy silt, trace rootlets fine rounded gravel, humid			0.35	E	PID=2		
	0.45								
	0.5	CONGLOMERATE - (Low to medium strength) grey stained orange-brown conglomerate, subrounded gravel fine to medium sized							
		Pit discontinued at 0.5m, refusal							
	1								1
	2								2

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371196
NORTHING: 6332019

PIT No: 1040
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm)
	0.0	FILLING - Generally comprising dark grey sandy coal filling, coal coarse to cobble sized, some rootlets, humid		B	0.0				
					0.2	E	PID = 2		
	0.25	GRAVELLY SILT - Brown gravelly silt, some fine to medium grained sand, subrounded gravel, humid			0.25				
					0.3	E	PID = 2		
	0.4	SANDY CLAY - Stiff to very stiff, orange-brown, fine to medium grained sandy clay, M>Wp			0.5	E	pp = 220 PID= 2		
	1	From 1m, pale grey			1.0		pp = 230		1
		From 1.3m, rock like properties in parts							
	1.4	Pit discontinued at 1.4m, limit of investigation			1.4		pp = 270		
	2								2

Dynamic Penetrometer Test (blows per 100mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371252
NORTHING: 6332109

PIT No: 1041
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark grey coaly clay filling, coal generally coarse to cobble sized with some siltstone, some rootlets, humid		E	0.1		PID=4		
	0.25	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay, trace roots, M>Wp		E	0.4		PID=2		
					0.5		pp = 450		
	0.75	SILTY CLAY - Very stiff, pale-grey silty clay, M>Wp							
1					1.0		pp = 350		1
	1.25	Pit discontinued at 1.25m, limit of investigation							
2									2

Dynamic Penetrometer Test (blows per 150mm): 5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371250
NORTHING: 6332134

PIT No: 1042
PROJECT No: 91402.03
DATE: 27/11/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown fine to medium grained sandy clay filling, some coal gravel fine to coarse sized, trace rootlets, concrete boulders (footing), brick and steel bar, M<Wp		E	0.2		PID=2		
	0.35	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay, trace roots, M>Wp		E	0.5		pp = 300 PID=3		
		From 0.8m, hard			0.8		pp = 450		
				E	0.9		PID<1		
	1	From 1.1m, grading to weathered rock (slow progress)							1
	1.2	Pit discontinued at 1.2m, limit of investigation							
	2								2

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371218
NORTHING: 6332160
DIP/AZIMUTH: 90°/--

BORE No: 1043
PROJECT No: 91402.03
DATE: 5/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - Generally comprising dark-grey sandy coal filling, coal fine to medium sized, trace rootlets, moist		E	0.2		PID=2		
	0.25	CLAYEY SAND - Grey motled orange fine to coarse grained clayey sand, some rounded gravel, wet							
	0.6	SANDY CLAY - Grey mottled orange fine to coarse grained sandy clay, some rounded gravel M>Wp							
	0.8	Bore discontinued at 0.8m, limit of investigation							
	1								1
	2								2

RIG: 80mm diameter hand auger **DRILLER:** **LOGGED:** Parkinson **CASING:**
TYPE OF BORING:
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371666
NORTHING: 6332002

PIT No: 1044
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey fine to medium grained sandy silt filling, some fine to coarse sized rootlets gravel and coal, trace rootlets, moist		E	0.1		PID<1		
	0.2	FILLING - Generally comprising brown gravelly sand filling, gravel rounded fine to medium sized, trace sandstone boulders, moist		E	0.25		PID<1		
	0.35	SANDY CLAY - Very stiff, orange brown fine to medium grained sandy clay, trace sandstone cobbles, M>Wp		B, E	0.5		pp = 250-300 PID<1		
		From 0.6m grey mottled orange			0.8		pp = 250-300		
1	1.0	SANDSTONE - (Medium strength) pale grey fine grained sandstone							1
	1.1	Pit discontinued at 1.1m, refusal							
2									2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371605
NORTHING: 6331958

PIT No: 1045
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 50mm)
		FILLING - Generally comprising dark-grey sand and coal filling, coal medium to coarse sized, some clay and rootlets, moist		E	0.05		PID>1		
	0.15	SANDY CLAY - Very stiff, orange-grey fine to medium grained sandstone, trace fine rounded gravel, M>Wp		E	0.3		pp = 380 PID<1		
	0.4								
	0.45	SANDSTONE - (Medium strength) grey stained orange, medium grained sandstone							
		Pit discontinued at 0.45m, refusal							
	1								1
	2								2

Dynamic Penetrometer Test (blows per 50mm): 5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371573
NORTHING: 6331909

PIT No: 1046
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown gravelly clayey sand filling, gravel fine to coarse sandstone and river gravel, fine to coarse grained sand, some silt and rootlets, trace glass, moist		E	0.1		PID<1		
	0.25	SANDY CLAY - Stiff, orange-brown fine to medium grained sandy clay, some fine rounded gravel, M>Wp							
		From 0.6m very stiff		B, E	0.6		pp = 180-230 PID<1		
	0.75	SANDSTONE - (Medium strength) grey stained orange, medium grained sandstone, trace fine rounded gravel							
	0.8	Pit discontinued at 0.8m, refusal							
	1								
	2								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371758
NORTHING: 6332048

PIT No: 1047
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown gravelly sand filling, medium to coarse sized rounded gravel, trace rootlets and coal gravel, moist		E	0.3		PID<1		
	0.5	SANDY CLAY - Stiff, dark-grey fine to medium grained sandy clay, M>Wp		E	0.7		pp = 120 PID=1.5		
					0.9		pp = 300		
	1.5	SANDY CLAY - Stiff orange-grey fine to coarse grained sandy clay, M>WP (wet)							
	1.8	Pit discontinued at 1.8m, limit of investigation			1.8		pp = 180		

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20; 1; 2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371695
NORTHING: 6332037

PIT No: 1048
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey fine to medium grained gravelly sandy silt filling, gravel comprising medium to coarse sized sandstone and coal, trace roots, rootlets, glass and steel, moist		E	0.2		PID<1 D5		
	0.35	SANDY CLAY - Very stiff, orange-grey mottled red fine to medium grained sandy clay, trace roots, M>Wp		E	0.6		pp = 350 PID=1.2		
	1	From 0.9m hard			1.0		pp = 450		1
	1.5	Pit discontinued at 1.5m, limit of investigation							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371639
NORTHING: 6332065

PIT No: 1049
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey sandy silt filling, some medium to coarse sized coal, trace roots, rootlets and pebbles, moist		E	0.1		PID<1		
	0.25	SANDY CLAY - Stiff, orange-grey fine to medium grained sandy clay, M>Wp			0.5		pp = 180		
				E	0.6		PID<1		
		From 0.8m very stiff, pale grey melted red			0.8		pp = 350		
	1	From 1.2m hard, rock like properties							1
	1.5	Pit discontinued at 1.5m, limit of investigation							
	2								2

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5T Excavator 450mm bucket with teeth
LOGGED: Parkinson
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371220
NORTHING: 6331884

PIT No: 1050
PROJECT No: 91402.03
DATE: 5/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
	0.1	FILLING - Generally comprising grey-brown fine to coarse grained clayey gravelly sand filling, gravel comprising fine to coarse sized pebbles, trace coal and rootlets, humid (probable access track graded material)		E	0.05		PID<1		
	0.25	CLAYEY GRAVELLY SAND - Orange-brown fine to coarse grained clayey gravelly sand, gravel comprising fine to coarse sized pebbles, humid (probably grading to bedrock)							
		Pit discontinued at 0.25m, refusal							
	1								1
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371788
NORTHING: 6332150

PIT No: 1051
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising gravelly sand filling, gravel medium to coarse sized rounded gravel, some clay, trace rootlets, humid							
	0.2	FILLING - Generally comprising black coal, gravelly fine to coarse sized with some cobbles and fines, trace siltstone, humid							
		From 0.7m some cobbles/boulders		B E	0.7 0.7		PID=2		
	1	At 1.2m tree stump 200mm diameter							1
	1.4	SANDY CLAY - Firm, brown fine grained sandy clay, trace rootlets,M>Wp							
				E	1.7		pp = 80 PID<1		
		From 1.9m stiff, grey mottled orange			1.9		pp = 180		
	2								2
	2.1	Pit discontinued at 2.1m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
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TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371944
NORTHING: 6332153

PIT No: 1052
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising black coal filling, generally fine to coarse sized with fines, some rootlets, moist							
	0.5	FILLING - Generally comprising brown-grey clayey gravelly sand filling, gravel medium to coarse sized sandstone and coal / coal fines, some ash, trace steel and brick, moist							
	1			E	1.0		PID<1		1
	1.5	SANDY SILT - Soft, grey fine to medium grained sandy silt, wet							
	2			E	1.8		PID=2		2
	2.1	SANDY CLAY - Stiff, grey mottled orange fine medium sandy clay, M>Wp			2.2		pp = 150		
		From 2.5m very stiff, mottled red			2.5		pp = 220		
	2.7	Pit discontinued at 2.7m, limit of investigation							

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371993
NORTHING: 6332187

PIT No: 1053
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising brown fine to medium grained sandy clay filling, some medium fine to coarse sized rounded pebbles and coal gravel, trace rootlets and glass, moist							
	0.5	SANDY CLAY - Stiff, orange- brown fine to medium grained sandy clay, M>Wp		B, E	0.8		pp = 210 PID<1		
	1	From 1.0m very stiff, pale-grey mottled red			1.0		pp = 350		
	1.7	Pit discontinued at 1.7m, limit of investigation							
	2								

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371686
NORTHING: 6332176

PIT No: 1054
PROJECT No: 91402.03
DATE: 4/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey black coal filling, generally fine to medium sized, trace sand and rootlets, wet		E	0.4		PID=1.1		
	0.7	FILLING - Generally comprising orange-brown sandy gravelly clay filling, gravel fine to coarse sandstone and river gravel, wet		E	1.0		pp = 110 PID<1	▽	
	1.5	SILTY CLAY - Firm, dark-grey silty clay, some roots and rootlets, M>>Wp From 2.3m stiff		E	2.0		pp = 80 PID<1		
	2.5	Pit discontinued at 2.5m, limit of investigation							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20; 1; 2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: Strong seepage from 0.7m

REMARKS: Adjacent to dam

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371402
NORTHING: 6331920
DIP/AZIMUTH: 90°/--

BORE No: 1055
PROJECT No: 91402.03
DATE: 5/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - Generally comprising dark-grey gravelly sand filling, gravel comprising fine to coarse sized coal and pebbles, trace rootlets, humid (steel and bricks at surface)		E	0.2		PID<1		
	0.4	CLAYEY GRAVELLY SAND - Orange-brown fine to coarse grained clayey gravelly sand, gravel comprising fine to medium sized pebbles, humid (probable weathered rock)							
	0.5	Bore discontinued at 0.5m, refusal							
	1								1
	2								2

RIG: 80mm diameter hand auger **DRILLER:** **LOGGED:** Parkinson **CASING:**
TYPE OF BORING:
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371642
NORTHING: 6331986

PIT No: 1056
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
		FILLING - Generally comprising dark-grey fine to medium grained sandy silt filling, some fine to coarse sized rounded gravel, trace medium coal, rootlets and tile, moist		E	0.1		PID<1		
	0.2	SANDY CLAY - Very stiff, orange-brown fine to medium grained sandy clay		E	0.4 0.4		PID=1.2 pp = 250		
	0.5								
	0.55	SANDSTONE - (Medium strength) pale grey stained red fine grained sandstone							
		Pit discontinued at 0.6m, refusal							
	1								1
	2								2

5 10 15 20

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Wallalong Land Developments Pty Limited
PROJECT: DSI Area B
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371584
NORTHING: 6331973

PIT No: 1057
PROJECT No: 91402.03
DATE: 3/12/2018
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 100mm) 5 10 15 20
		FILLING - Generally comprising grey-brown coaly sand filling, fine to medium grained sand, medium to coarse coal, trace coal cobbles roots and rootlets, humid		E	0.15		PID<1		
	0.2	FILLING - Generally comprising brown clayey gravely sand filling, gravel rounded fine to coarse sized, trace roots, humid		E	0.3		PID<1		
	0.35	SANDY CLAY - Very stiff to hard grey mottled orange-red medium to coarse grained sandy clay, some rounded gravel, M>Wp		E	0.7 0.7		PID<1 pp = 380-450		
	1								1
	1.05	SANDSTONE - (Low to medium strength) grey stained orange-red medium to coarse grained sandstone with some medium to coarse rounded pebbles							
	1.1	Pit discontinued at 1.1m, refusal							
	2								2

RIG: 5T Excavator 450mm bucket with teeth

LOGGED: Parkinson

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Photo 1: Pit 1001

Photo 2: Pit 1002

Douglas Partners Geotechnics / Environment / Groundwater	**Detailed Contamination Assessment**		PROJECT:	91402.03
	Proposed Residential Development		Plate	1
	Flowers Drive, Catherine Hill Bay		REV:	A
	Client	Wallaong Land Developments Pty Ltd	DATE:	14-Mar-19

Photo 3: Pit 1003

Photo 4: Pit 1004

Photo 5: Pit 1005

Photo 6: Pit 1006

Photo 7: Pit 1007

Photo 8: Pit 1008

Photo 9: Pit 1009

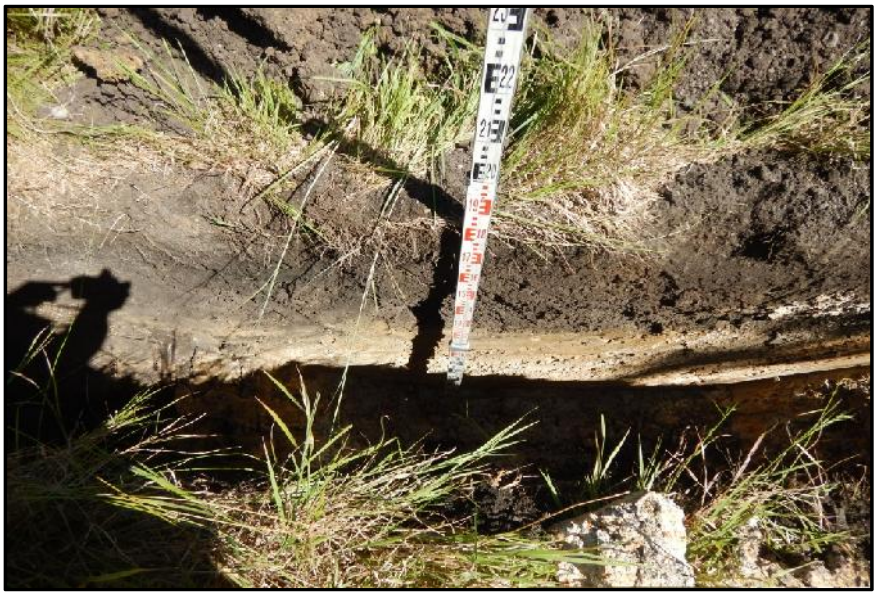

Photo 10: Pit 1010

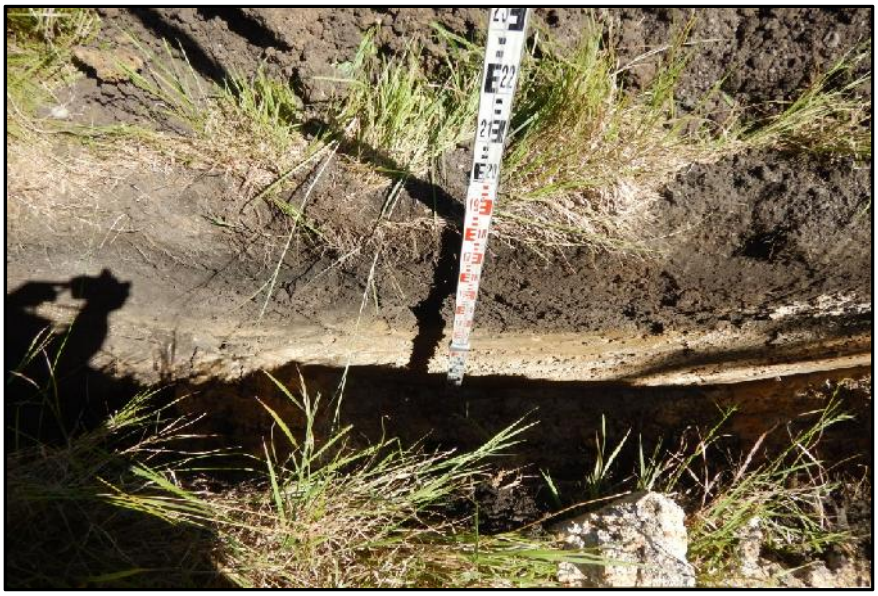

Photo 11: Pit 1011

Photo 12: Pit 1012

Photo 13: Pit 1013

Photo 14: Pit 1014

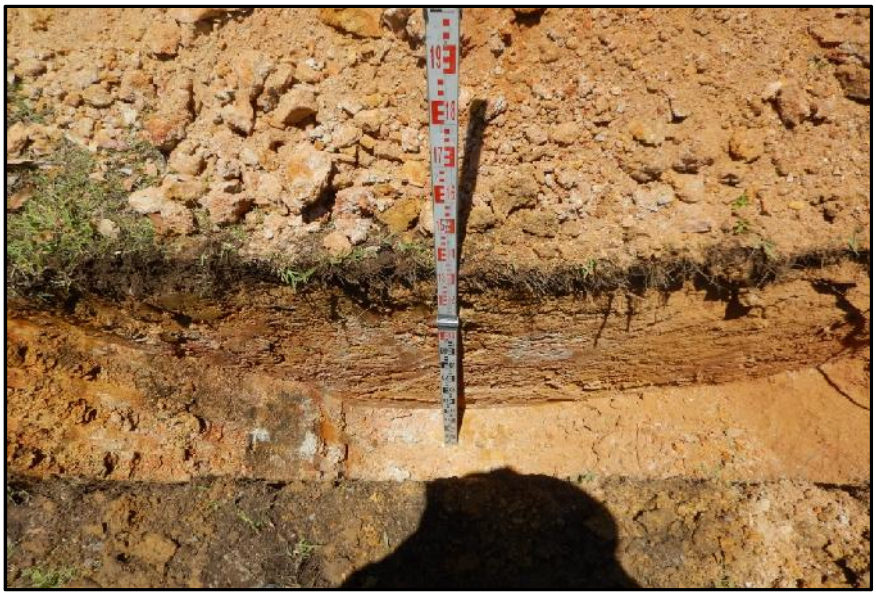

Photo 15: Pit 1015

Photo 16: Pit 1016

Photo 17: Pit 1017

Photo 18: Pit 1018

Photo 19: Pit 1019

Photo 20: Pit 1020

Photo 21: Pit 1021

Photo 22: Pit 1022

Photo 23: Pit 1023

Photo 24: Pit 1024

Photo 25: Pit 1025

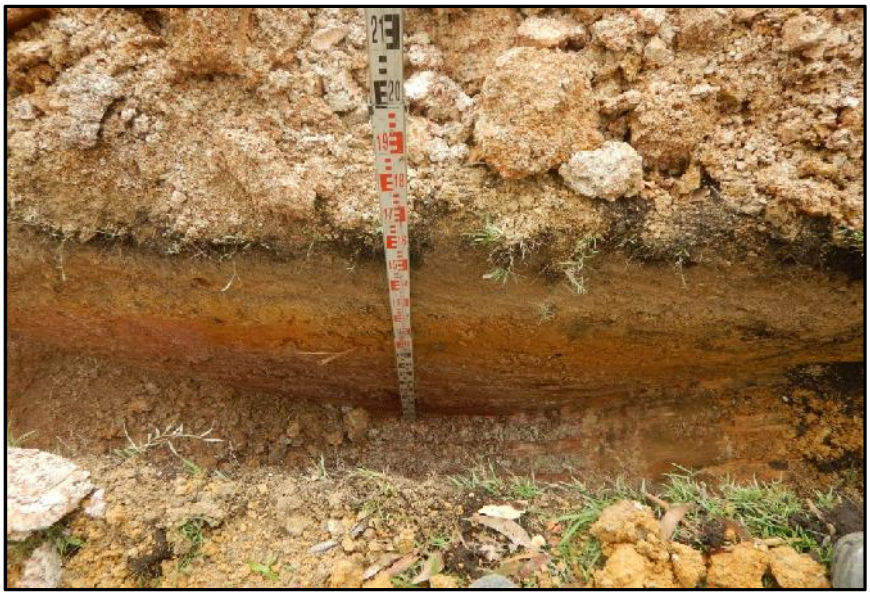

Photo 26: Pit 1026

Photo 27: Pit 1027

Photo 28: Pit 1028

Photo 29: Pit 1029

Photo 30: Pit 1030

Photo 31: Pit 1031

Photo 32: Pit 1032

Photo 33: Pit 1033

Photo 34: Pit 1034

Photo 35: Pit 1035

Photo 36: Pit 1036

Photo 37: Pit 1037

Photo 38: Pit 1038

Photo 39: Pit 1039

Photo 40: Pit 1040

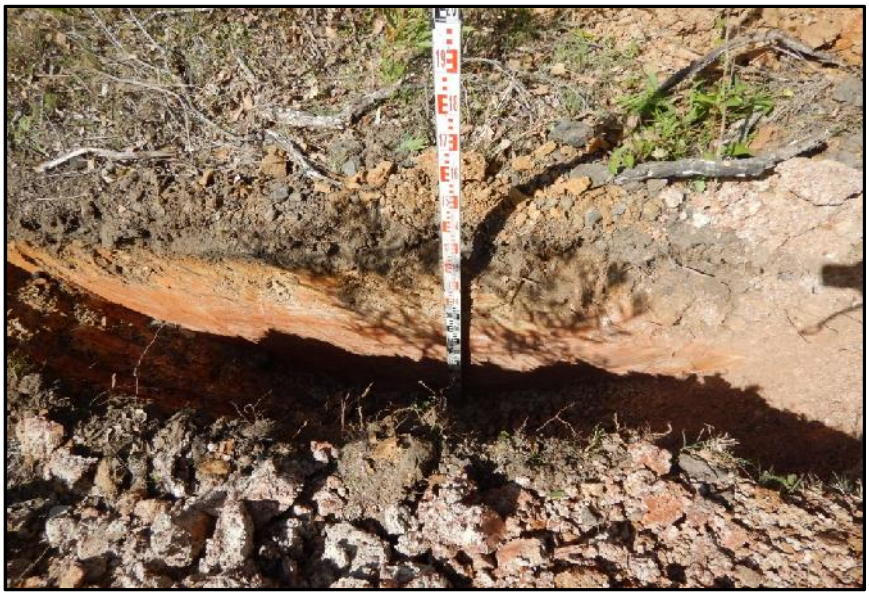

Photo 41: Pit 1041

Photo 42: Pit 1042

Photo 43: Pit 1043

Photo 44: Pit 1044

Photo 45: Pit 1045

Photo 46: Pit 1046

Photo 47: Pit 1047

Photo 48: Pit 1048

Photo 49: Pit 1049

Photo 50: Pit 1050

Photo 51: Pit 1051

Photo 52: Pit 1052

Photo 53: Pit 1053

Photo 54: Pit 1054

Photo 55: Pit 1055

Photo 56: Pit 1056

Photo 57: Pit 1057

Douglas Partners Geotechnics / Environment / Groundwater	**Detailed Contamination Assessment**		PROJECT:	91402.03
	Proposed Residential Development		Plate	29
	Flowers Drive, Catherine Hill Bay		REV:	A
	Client	Wallaong Land Developments Pty Ltd	DATE:	14-Mar-19

TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371184
NORTHING: 6331931
DIP/AZIMUTH: 90°/--

PIT No: 1
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0	FILLING - Generally comprising brown and dark brown silty sandy clay with some reinforced concrete, wood, (timber) and corregated iron, coal and coal chitter (10%) and trace roots/rootlets to 0.3m, M>Wp		D,PID	0.05		<1ppm		
				D,PID	0.5		<1ppm		
	1								1
	1.1	FILLING - Generally comprising dark brown-black clayey sandy silt / coal chitter, damp							
	1.4	FILLING - Generally comprising brown silty sandy clay with some coal and coal chitter, M>Wp		D,PID	1.7		<1ppm		
	1.8	SANDSTONE - Extremely low to very low strength, highly weathered, light brown and grey-brown fine to medium grained sandstone with some pebbles		D,PID	1.9		<1ppm		
	2								2
	2.4	Pit discontinued at 2.4m, refusal							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

Douglas Partners
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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371170
NORTHING: 6332018
DIP/AZIMUTH: 90°/--

PIT No: 2
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.07	FILLING - Generally comprising dark brown sandy silt with some gravel and coal chitter, damp		D,PID	0.05		<1ppm		
		FILLING - Generally comprising brown and grey-brown sandy clayey silt with some coal chitter (10%) and subrounded gravel, damp to moist		D,PID	0.3		<1ppm		
	0.4	PEBBLY SANDSTONE - Extremely low to very low strength, extremely to highly weathered fine to medium grained pebbly sandstone		D,PID	0.43		<1ppm		
	1								1
				D	1.1				
	1.15	Pit discontinued at 1.15m, refusal							
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371176
NORTHING: 6332172
DIP/AZIMUTH: 90°/--

PIT No: 3
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (approximately 30%) with some coal fragments 20mm x 20mm, trace rootlets to 0.5m, damp		D,PID	0.1		<1ppm		
				D,PID	0.5		<1ppm		
	0.55	SILTY GRAVELLY SAND - Grey to light brown fine to coarse grained sand, silty gravelly sand, humid		D,PID	0.7		<1ppm		
		from 0.7m, grading to sandstone							
	0.9	PEBBLY SANDSTONE - Extremely low to very low strength, extremely weathered, light brown and light orange-brown fine to coarse grained pebbly sandstone							
	1								1
				D	1.4				
	2								2
				D	2.4				
	2.7	Pit discontinued at 2.7m, limit of investigation							
	3								3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371207
NORTHING: 6331996
DIP/AZIMUTH: 90°/--

PIT No: 4
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising brown-black sandy silt / coal chitter with some rubber and steel conveyor rollers and trace roots and rootlets, damp		D,PID	0.05		<1ppm		
	0.4	SILTY CLAY - Hard, brown and orange-brown silty clay, M<Wp		D,PID,pp	0.5		>450 kPa, <1ppm		
1	1.0	SANDSTONE - Extremely low to very low strength, extremely weathered, light grey-brown and light orange -brown fine to medium grained sandstone		D,PID	1.1		<1ppm		1
	1.75	from 1.7m, very low to low strength Pit discontinued at 1.75m, refusal							
2									2
3									3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371226
NORTHING: 6332062
DIP/AZIMUTH: 90°/--

PIT No: 5
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.15	FILLING - Generally comprising dark brown and brown fine to coarse grained clayey silty sand with some gravel and rootlets, damp to moist		D,PID	0.05		<1ppm		
		SILTY CLAY - Very stiff, brown mottled red-brown silty clay, M>Wp		D,PID, pp	0.2		210 kPa, <1ppm		
	1			D,pp	0.8		310-340 kPa		1
	1.35	CLAYSTONE - Extremely low to very low strength, extremely to highly weathered, light grey and orange-brown claystone		D	1.4				
		from 1.6m, very low to low strength							
	1.7	Pit discontinued at 1.7m, refusal							
	2								2
	3								3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371210
NORTHING: 6332122
DIP/AZIMUTH: 90°/--

PIT No: 6
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter, damp		D,PID	0.1		<1ppm		
	0.4	SILTY CLAY - Very stiff, brown and grey-brown silty clay, M>Wp		D,PID, pp	0.5		260-320 kPa, <1ppm		
	1	from 0.9m, hard, light grey-brown mottled red-brown		D,pp	1.2		>450 kPa		1
		from 1.7m, grading to claystone		D,pp	1.7		>450 kPa		
	2 2.0	CLAYSTONE - Very low to low strength, moderately weathered, grey claystone		D	2.3				2
	2.9	Pit discontinued at 2.9m, limit of investigation							
	3								3

RIG: 4WD Case 580 LE
LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371247
NORTHING: 6332024
DIP/AZIMUTH: 90°/--

PIT No: 7
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark brown clayey silt, slightly sandy and gravelly, damp		D,PID	0.1		<1ppm		
	0.2	FILLING - Generally comprising orange and red-brown gravelly silty clay, subrounded fine to medium grained gravel, M≥Wp, damp		D,PID	0.6		<1ppm		
	0.8	PEBBLY SANDSTONE / CONGLOMERATE - Extremely low strength, extremely weathered, light grey-brown and orange-brown pebbly sandstone / conglomerate		D,PID	0.9		<1ppm		
	1.25	Pit discontinued at 1.25m, refusal							

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371274
NORTHING: 6332162
DIP/AZIMUTH: 90°/--

PIT No: 8
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black coal chitter with trace rootlets to 0.3m, damp		D,PID	0.1		<1ppm		
				D,PID	0.5		<1ppm		
	0.6	FILLING - Generally comprising brown fine to medium grained silty clayey sand with some gravel, moist		D,PID	0.8		<1ppm		
	0.85	FILLING - Generally comprising grey clayey silt, slightly cemented with trace coal (5%) and sand, moist to wet		D,PID	1.0		<1ppm		
	1			D	1.15			▽	
				D,PID	1.7		<1ppm		
	1.8	FILLING - Generally comprising soft to firm, grey-brown mottled orange-brown silty clay, M>Wp		D,PID,pp	1.9		50-90 kPa, <1ppm		
	2			D,pp	2.3		300 kPa		
		from 2.3m, (very stiff)		D,PID	2.4		<1ppm		
		from 2.4m, some gravel and sand							
	2.6	FILLING - Generally comprising dark brown-black sandy silt / coal chitter		D,PID	2.7		<1ppm		
	2.9	SILTY CLAY - Generally comprising very stiff silty clay with some sand and gravel, M>Wp		D,PID,pp	3.0		300 kPa, <1ppm		
	3								
	3.1	Pit discontinued at 3.1m, limit of investigation							

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Seepage at 1.15m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▽ Water level

CHECKED
Initials:
Date:

Douglas Partners
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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371322
NORTHING: 6331874
DIP/AZIMUTH: 90°/--

PIT No: 9
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt with some clay, gravel, coal chitter (10%), bricks, steel pins and other building material		D,PID	0.2		<1ppm		
	0.55	FILLING - Generally comprising dark brown-black sandy silt / coal chitter (approximately 40%)			0.6				
				D,PID B	0.7		<1ppm		
					0.9				
1									1
	1.2	SILTY GRAVELLY SAND - Light brown fine to coarse grained silty gravelly sand, moist (possibly filling)		D,PID	1.3		<1ppm		
	1.6	SILT CLAY - Very stiff, brown mottled red-brown slightly gravelly, trace sand, M>Wp		D,pp	1.7		270-330 kPa		
2									2
	2.3	GRAVELLY SILTY CLAY - Very stiff, light brown and orange and red-brown gravelly silty clay, M<Wp		D,pp	2.5		250-300 kPa		
		from 2.6m, grading to silty clayey gravel		D	2.9				
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

Douglas Partners
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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371305
NORTHING: 6332044
DIP/AZIMUTH: 90°/--

PIT No: 10
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown and light brown sandy silt with some clay and subrounded gravel, trace rootlets to 0.15m, humid		D,PID	0.2		<1ppm		
	0.4	FILLING - Generally comprising very stiff, brown and light orange-brown sandy silty gravelly clay; trace coal fragments (5%), M>Wp		D,PID,pp	0.6		300 kPa, <1ppm		
	1			D,PID,pp	1.1		250-300 kPa, <1ppm		1
	1.3	FILLING - Generally comprising dark brown-black sandy silt / coal chitter (5mm to 60mm), and trace bricks		D,PID,pp	1.6		250 kPa, <1ppm		
	1.7	FILLING - Generally comprising (very stiff), brown and orange-brown silty clay, M>Wp		D,PID,pp	1.9		250 kPa, <1ppm		
	2 2.0	SILTY CLAY - Hard, red mottled light grey-brown silty clay, M<Wp		D,PID,pp	2.1		>450 kPa, <1ppm		2
				D,pp	2.6		>450 kPa		
	2.65	Pit discontinued at 2.65m, slow progress							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371276
NORTHING: 6332126
DIP/AZIMUTH: 90°/--

PIT No: 11
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising firm to stiff, brown and dark brown sandy clayey silt with trace rootlets and some fine grained gravel, damp to moist		D,PID	0.1		<1ppm		
				D,PID,pp	0.4		100 kPa, <1ppm		
	0.5	SILTY CLAY - Very stiff to hard, orange and red-brown mottled grey-brown silty clay, M<Wp		D,PID,pp	0.6		380->450 kPa, <1ppm		
	1								1
		from 1.5m, hard, grey mottled red orange-brown, trace sand and gravel, M≤Wp		D,pp	1.5		>450 kPa		
	2								2
				D,pp	2.3		>450 kPa		
	2.8	Pit discontinued at 2.8m, slow progress							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371359
NORTHING: 6332056
DIP/AZIMUTH: 90°/--

PIT No: 12
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown and orange-brown gravelly silty clay with some coal (10%) and sand and trace rootlets to 0.1m, M>Wp		D,PID	0.3		<1ppm		
	0.5	FILLING - Generally comprising dark brown black sandy silt, trace coal chitter with trace gravel and bricks, damp to moist		D,PID	0.7		<1ppm		
	0.9	SANDY SILTY CLAY - Very stiff, grey mottled orange-brown sandy silty clay with some gravel, M>Wp		D,PID,pp	1.0		270 kPa, <1ppm		
	1	from 1.1m, firm to stiff		D,pp	1.2		70-150 kPa		
	2	from 2m, stiff to very stiff		D,pp	2.2		180-220 kPa		
		from 2.5m, very stiff to hard with some iron-cemented gravel, M<Wp		D,pp	2.7		>450 kPa		
	2.8	Pit discontinued at 2.8m, slow progress							
	3								

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371364
NORTHING: 6332100
DIP/AZIMUTH: 90°/--

PIT No: 13
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
	0.15	FILLING - Generally comprising dark brown to black fine to medium grained silty sand with 20% coal chitter / trace fine rootlets, damp		D,PID	0.1		<1ppm		
	0.2	CONCRETE - Brown concrete							
		Pit discontinued at 0.2m, refusal on concrete slab							
	1								1
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371356
NORTHING: 6332134
DIP/AZIMUTH: 90°/--

PIT No: 14
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (20%), trace rootlets to 0.2 m, damp		D,PID	0.05		<1ppm		
	0.2	FILLING - Generally comprising grey silty gravelly sand, moist		D,PID	0.3		<1ppm		
	0.45	GRAVELLY SAND - Grey-brown mottled orange-brown fine to coarse grained gravelly sand, slightly clayey, damp to moist		D,PID	0.5		<1ppm		
	1								1
	1.4	GRAVELLY SILTY CLAY - Very stiff, orange-red-brown mottled grey fine grained gravelly silty clay, M>Wp		D,pp	1.5		230-330 kPa		
	2								2
				D,pp	2.3		200-260 kPa		
		from 2.7m, stiff		D,pp	2.7		150-200 kPa		
	2.9	Pit discontinued at 2.9m, limit of investigation							
	3								3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371416
NORTHING: 6331907
DIP/AZIMUTH: 90°/--

PIT No: 15
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		SILTY SAND - Brown fine to coarse grained silty sand with trace gravel and roots/rootlets, damp		D,PID	0.1		<1ppm		
	0.25	SILTY CLAY - Very stiff, orange and red-brown silty clay, M>Wp		D,PID,pp	0.3		350 kPa, <1ppm		
	0.4	SILTY CLAY - Very stiff, red and orange-brown mottled light grey silty clay, M>Wp							
	1			D,pp	0.8		380 kPa		1
		from 1.2m, grading to claystone		D	1.2				
	1.4	CLAYSTONE - Very low to low strength, highly to moderately weathered, light brown and light orange-brown claystone							
	1.5	Pit discontinued at 1.5m, refusal							
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371432
NORTHING: 6332033
DIP/AZIMUTH: 90°/--

PIT No: 16
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown and dark brown fine to coarse grained silty sand with some gravel and coal chitter (10%), trace rootlets to 0.15m, damp		D,PID	0.2		<1ppm		
	0.3	SILTY CLAY - Very stiff, light brown and mottled light orange-brown silty clay, slightly gravelly, M>Wp		D,PID,pp	0.4		270 kPa, <1ppm		
	0.55	SILTY CLAY - Hard, light grey mottled red-brown silty clay with trace sand, M<Wp		D,pp	0.8		>450 kPa		
	1								1
		from 1.5m, slightly gravelly gravel		D,pp	1.7		400->450 kPa		
	2								2
	2.65	Pit discontinued at 2.65m, slow progress		D,pp	2.6		>450 kPa		
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371441
NORTHING: 6332080
DIP/AZIMUTH: 90°/--

PIT No: 17
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising brown fine to medium grained silty sand with some gravel, trace rootlets, damp							
		FILLING - Generally comprising light orange-brown fine to medium grained clayey silty sand, slightly gravelly, damp		D,PID	0.3		<1ppm		
	0.75	FILLING - Generally comprising dark brown-black fine to medium grained silty sand / coal and coal chitter (50%), damp to moist		D,PID	0.8		<1ppm		
	1								1
		from 1.2m, 70% coal and coal chitter including cobble sized rock fragments		D,pp	1.3		<1ppm		
				D,PID	1.9		<1ppm		
	2								2
				D,PID	2.4		<1ppm		
	2.6	FILLING - Generally comprising grey-brown fine to coarse grained silty sand with some coal and coal chitter (10%)							
				D,PID	2.9		<1ppm		
	3 3.0	Pit discontinued at 3.0m, limit of investigation							3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371450
NORTHING: 6332117
DIP/AZIMUTH: 90°/--

PIT No: 18
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark brown-black fine to medium grained silty sand with abundant building rubble (including concrete footings, bricks, metal tubes, iron and corrugated fibro), damp		D,PID	0.15		<1ppm		
	0.3	Pit discontinued at 0.3m, due to historical remains							
	1								1
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371450
NORTHING: 6332165
DIP/AZIMUTH: 90°/--

PIT No: 19
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (30%), trace rootlets to 0.2m, moist to damp		D,PID	0.1		<1ppm		
	0.25	FILLING - Generally comprising brown gravelly silt with some sand and coal and trace rootlets and coal, moist		D,PID	0.3		<1ppm		
	0.5	FILLING - Generally comprising dark grey-brown silt with trace sand, gravel, coal, moist to wet		D,PID	0.55		<1ppm		
	0.6	FILLING - Generally comprising brown and dark brown-black silty gravelly sand, generally comprising medium to coarse grained sand, slightly cemented, wet		D,PID	0.7		<1ppm		
	0.8	FILLING - Generally comprising grey-brown and orange-brown fine to medium grained clayey silty sand, slightly gravelly with some coal fragments		D,PID	1.0		<1ppm		
1		from 1.2m, saturated, grading to gravelly sand						▼	1
				D,PID	1.7		<1ppm		
2	2.0	Pit discontinued at 2.0m, due to continual collapse							2
3									3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Free groundwater observed at 1.2m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371475
NORTHING: 6331977
DIP/AZIMUTH: 90°/--

PIT No: 20
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising grey-brown silty sand with some gravel and trace coal chitter, dry to moist		D,PID	0.1		<1ppm		
	0.25	SILTY CLAY - Hard, light orange-brown mottled red-brown silty clay with some gravel, M<Wp		D,PID,pp	0.4		400->450 kPa, <1ppm		
	0.6	SILTY CLAY - Very stiff to hard, light grey-brown mottled red-brown silty clay							
	1			D,pp	1.1		370-430 kPa		1
	1.5	CLAYSTONE - Extremely low to very low strength, extremely weathered, light grey and red-brown claystone		D,pp	1.7		>450 kPa		
		from 1.9m, very low strength, highly weathered							
	2 2.0	Pit discontinued at 2.0m, refusal							2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371485
NORTHING: 6332047
DIP/AZIMUTH: 90°/--

PIT No: 21
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
	0.1	FILLING - Generally comprising grey-brown and brown fine to medium grained silty sand with some gravel and coal chitter (<10%) and trace rootlets		D,PID	0.05		<1ppm		
	0.12	CONCRETE - Grey-brown and brown concrete							
		Pit discontinued at 0.12m, refusal							
	1								1
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371487
NORTHING: 6332073
DIP/AZIMUTH: 90°/--

PIT No: 22
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising brown to dark brown fine to coarse grained silty sand with some gravel and coal chitter (10%) and trace clay and rootlets to 0.15m, damp		D,PID	0.3		<1ppm		
				D,PID	0.8		<1ppm		
	1	from 0.9m, grey-brown							1
				D,PID	1.3		<1ppm		
				D,PID	1.8		<1ppm		
	2								2
				D,PID	2.3		<1ppm		
				D,PID	2.8		<1ppm		
	3 3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371508
NORTHING: 6332003
DIP/AZIMUTH: 90°/--

PIT No: 23
PROJECT No: 39662C
DATE: 03 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising dark brown clayey silt with some subrounded, subangular gravel, trace rootlets, humid to damp		D,PID	0.02		<1ppm		
		FILLING - Generally comprising very stiff grey-brown mottled red-brwon silty clay, trace rootlets, trace cobbles, M<Wp		D,PID,pp	0.2		200-250 kPa, <1ppm		
	0.35	FILLING - Generally comprising stiff, brown mottled grey-orange silty sandy clay with some cobbles and coal chitter and gravel, M>Wp							
		at 0.6m, disused electrical cables		D,PID,pp	0.7		100-200 kPa, <1ppm		
		at 0.9m, concrete slab, black tar film		D,PID,pp	0.9		<1ppm		
1									1
	1.35	SILTY CLAY - Stiff, orange-brown / red-brown silty clay, M>Wp		D,PID,pp	1.4		100-200 kPa, <1ppm		
	1.9	SILTY CLAY - Hard, grey mottled red-brown silty clay, M<Wp							
2				D,PID,pp	2.1		400-450 kPa, <1ppm		2
		from 2.4m, grading to sandy silty clay		D,PID,pp	2.6		>450 kPa, <1ppm		
	2.7	Pit discontinued at 2.7m, slow progress							
3									3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371523
NORTHING: 6332059
DIP/AZIMUTH: 90°/--

PIT No: 24
PROJECT No: 39662C
DATE: 02 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising dark brown-black fine to medium grained silty sand with 30% coal, coal chitter and trace gravel and rootlets to 0.1m, damp		D,PID	0.15		<1ppm		
	0.45	FILLING - Generally comprising grey-brown fine to coarse grained silty sand with trace gravel, damp		D,PID	0.35		<1ppm		
	0.8	FILLING - Generally comprising dark brown-black sandy silt / coal and coal chitter (50%-70%), damp		D,PID	0.6		<1ppm		
1		SILTY CLAY - Stiff to very stiff, grey-brown silty clay with some extremely low strength claystone boulders		D,PID,pp	0.9		200 kPa, <1ppm		1
				D,pp	1.8		180-220 kPa		
2	2.0	SANDY SILTY CLAY - Very stiff, light grey mottled red-brown sandy silty clay with some sandstone cobbles, M>Wp							2
				D,pp	2.8		250-350 kPa		
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371514
NORTHING: 6332096
DIP/AZIMUTH: 90°/--

PIT No: 25
PROJECT No: 39662C
DATE: 03 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
	0.012	FILLING - Generally comprising brown fine to coarse grained silty sand with trace coal chitter fragments, gravel and rootlets, humid		D,PID	0.05		<1ppm		
		FILLING - Generally comprising dark brown-black sandy silt / coal and coal chitter with some cobble / chitter fragments, damp							
		at 0.5m, two concrete footings		D,PID	0.5		<1ppm		
	1								1
	1.1	Pit discontinued at 1.1m, due to historical remains							
	2								2
	3								3

RIG: 4WD Case 580 LE
LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371509
NORTHING: 6332134
DIP/AZIMUTH: 90°/--

PIT No: 26
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (50%), trace rootlets to 0.2m, damp							
		from 0.3m, concrete footings and railway sleeper with metal rail spurs							
	0.45	Pit discontinued at 0.45m, due to historical remains							
	1								1
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371541
NORTHING: 6331995
DIP/AZIMUTH: 90°/--

PIT No: 27
PROJECT No: 39662C
DATE: 03 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.15	FILLING - Generally comprising dark brown fine to coarse grained silty sand with trace gravel with 30% coal chitter, trace rootlets, humid to damp		D	0.05				
	0.25	FILLING - Generally comprising dark brown fine to coarse clayey gravelly sand, some coal chitter and trace bricks, humid to damp		D	0.2				
	0.5	SANDY SILTY CLAY - Stiff, grey-brown mottled orange-brown sandy silty clay with some ironcemented gravel, M>Wp		D,pp	0.3		100-150 kPa		
		SILTY CLAY - Very stiff, orange-brown mottled red-brown silty clay, M>Wp		D,pp	0.6		200-220 kPa		
	1	from 0.9m, ironcemented sand and gravel, M<Wp		D,pp	1.0		300-350 kPa		1
	1.2	SANDY SILTY GRAVELLY CLAY - Very stiff grey-brown mottled red-orange-brown sandy silty gravelly clay, M<Wp							
	2			D,pp	1.8		300-350 kPa		2
	2.6	PEBBLY SANDSTONE - Extremely low to very low strength, extremely to highly weathered, light grey-brown and orange-red-brown, fine to coarse grained pebbly sandstone		D	2.8				
	2.9	Pit discontinued at 2.9m, limit of investigation							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371534
NORTHING: 6332113
DIP/AZIMUTH: 90°/--

PIT No: 28
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising brown-dark brown silty sand with some coal chitter, trace rootlets to 0.4m, damp		D,PID	0.15		<1ppm		
	0.6								
	0.7	FILLING - Generally comprising, dark brown-black sandy silt / coal chitter (50%), moist		D,PID	0.65		<1ppm		
		FILLING - Generally comprising brown-dark brown fine to medium grained silty clayey sand, moist		D,PID	0.8		<1ppm		
	1								1
	1.1								
	1.2	FILLING - Generally comprising dark brown-black sandy silt / coal chitter (50%, wet		D,PID	1.15		<1ppm		
		FILLING - Generally comprising brown and dark brown fine to medium grained silty sand with some coal chitter and gravel, damp to moist							
		at 1.4m, timber sleeper (concrete footing)		D,PID	1.4		<1ppm		
	1.6	Pit discontinued at 1.6m, due to historical remains							
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371570
NORTHING: 6332061
DIP/AZIMUTH: 90°/--

PIT No: 29
PROJECT No: 39662C
DATE: 03 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising dark brown fine to coarse grained silty sand with trace gravel, coal fragments and rootlets, humid to damp		D,PID	0.05		<1ppm		
		FILLING - Generally comprising light grey-brown fine to coarse grained silty sand, damp to moist		D,PID	0.3		<1ppm		
	0.4	SANDY SILTY CLAY - Very stiff, brown sandy silty clay, M>Wp		D,PID,pp	0.5		200-230 kPa, <1ppm		
	0.55	SILTY CLAY - Very stiff to hard, orange-brown mottled red-brown silty clay with trace sand and gravel, M>Wp		D,pp	0.7		350->450 kPa		
	0.9	SILTY CLAY - Very stiff, grey-brown mottled red-brown silty clay with some iron-cemented sand and gravel, M<Wp		D,pp	1.0		300-380 kPa		
	2			D,pp	2.0		380-450 kPa		
		from 2.5m, grading to sandy silty clay		D,pp	2.7		320-360 kPa		
	2.8	Pit discontinued at 2.8m, limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20; 1, 2, 3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371568
NORTHING: 6332098
DIP/AZIMUTH: 90°/--

PIT No: 30
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.08	FILLING - Generally comprising grey-brown sandy silt, fine to coarse grained sand, abundant rootlets, some coal, damp		D,PID	0.05		<1ppm		
		FILLING - Generally comprising brown and dark brown gravelly clayey sand, fine to coarse grained sand, some coal trace rootlets to 0.4m some bricks at 0.4m		D,PID	0.3		<1ppm		
	0.55 0.6	PEBBLY SANDSTONE / CONGLOMERATE - Very low strength, moderately weathered, light brown pebbly sandstone, fine to medium grained gravel							
		Pit discontinued at 0.6m, refusal							
	1								1
	2								2
	3								3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371584
NORTHING: 6332131
DIP/AZIMUTH: 90°/--

PIT No: 31
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (30%), some gravel, trace rootlets, damp		D,PID	0.2		<1ppm		
	0.4	FILLING - Generally comprising grey-light orange silty sandy clay with some gravel, trace coal, moist		D,PID	0.5		<1ppm		
	0.6	FILLING - Generally comprising dark brown-black sandy silt / coal chitter (60%) with some gravel, moist to wet		D,PID	0.7		<1ppm		
	0.75	CLAYEY SAND - Light grey clayey sand with trace gravel, fine to medium grained sand, wet		D,PID	0.8		<1ppm		
	1								1
	1.4	SILTY CLAY - Stiff, orange-brown-brown silty clay with some fine to coarse grained sand, trace gravel, M>Wp		D,pp	1.6		120-170 kPa		
	2	from 1.9m, very stiff to hard, grey-brown mottled orange-brown, M<Wp		D,pp	2.0		300->500 kPa		2
				D,pp	2.6		300-350 kPa		
	2.7	Pit discontinued at 2.7m. limit of investigation							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371602
NORTHING: 6331926
DIP/AZIMUTH: 90°/--

PIT No: 32
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising dark brown fine to medium grained silty sand with trace rootlets, humid to damp		D,PID	0.05		<1ppm		
				D,PID	0.2		<1ppm		
	0.3	FILLING - Generally comprising dark brown-black coal chitter with some silt and sand, damp							
		FILLING - Generally comprising light orange-brown silty gravelly clay with some sand and coal chitter, M<Wp		D,PID	0.4		<1ppm		
	0.65	FILLING - Generally comprising fine to medium grained silty sand with some gravel, clay and coal chitter, damp		D,PID	0.8		<1ppm		
1	1.2	SILTY CLAY - Very stiff, orange-brown mottled red-brown silty clay, M>Wp		D,PID,pp	1.3		340-380 kPa, <1ppm		1
		from 1.4m, light grey mottled red-brown							
	1.8	SILTSTONE / CLAYSTONE - Extremely low strength, extremely weathered, light grey and light orange-brown siltstone / claystone							
2				D,pp	2.0				2
	2.5	Pit discontinued at 2.5m, slow progress							
3									3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371646
NORTHING: 6332156
DIP/AZIMUTH: 90°/--

PIT No: 33
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.2	FILLING - Generally comprising dark brown fine to medium grained silty sand, slightly cemented with some gravel and coal chitter (approximately 20%), damp		D,PID	0.1		<1ppm		
	0.7	FILLING - Generally comprising light brown and orange-brown silty sandy clay with some gravel and coal chitter		D,PID	0.6		<1ppm		
1	1.1	FILLING - Generally comprising very stiff, light grey-brown and orange-brown sandy silty clay, slightly gravelly, M~Wp		D,PID,pp	0.8		350 kPa, <1ppm		1
	1.7	FILLING - Generally comprising dark brown-black coal chitter slightly silty, damp		D,PID	1.3		<1ppm		
2	2.2	FILLING - Generally comprising dark brown-black clayey silt with coal chitter approximately 15% and some gravel, damp		D,PID	1.8		<1ppm		2
	2.5	FILLING - Generally comprising (firm), light brown and orange-brown sandy silty clay, slightly gravelly, M~Wp		D,PID,pp	2.3		50-90 kPa, <1ppm		
		FILLING - Generally comprising grey-brown gravelly silty clay, M>Wp		D,PID	2.8		<1ppm	▽	
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Seepage observed at 2.9m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371694
NORTHING: 6332010
DIP/AZIMUTH: 90°/--

PIT No: 34
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown and orange-brown silty sand with some sand, gravel and coal chitter, trace rootlets to 0.2m, M>Wp		D,PID	0.3		<1ppm		
		from 0.6m, moist to wet, M>>Wp							
	0.7	SILTY CLAY - Firm to stiff, grey-brown mottled orange-brown silty clay with some gravel, M>>Wp		D,PID,pp	0.8		80-100 kPa, <1ppm		
	1	from 1m, very stiff grading to sandstone		pp	1.0		200-250 kPa		1
	1.2	SANDSTONE - Extremely low to very low strength, extremely to highly weathered, light grey-brown and orange-brown fine to coarse grained sandstone		D	1.6				
		from 1.8m, very low to low strength							
	1.9	Pit discontinued at 1.9m, refusal							
	2								2
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371710
NORTHING: 6332160
DIP/AZIMUTH: 90°/--

PIT No: 35
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black coal chitter, slightly silty and sandy		D,PID	0.2		<1ppm		
	0.35	FILLING - Generally comprising, grey fine to medium grained silty sand with some coal chitter, damp		D,PID	0.4		<1ppm		
	0.5	FILLING - Generally comprising dark brown fine to coarse grained silty sand with some gravel, wet		D,PID	0.8		<1ppm	▼	
	1	from 0.9m, saturated							1
	1.2	SILTY CLAY - Soft to firm, dark brown mottled red-brown silty clay with some gravel and sand, trace organics, M>Wp		D,PID,pp	1.3		40-80 kPa, <1ppm		
	1.7	SILTY CLAY - Stiff, orange-brown silty clay with some gravel, M>Wp		D,pp	1.8		100-150 kPa		
	2								2
	2.1	SILTY CLAY - Stiff to very stiff, light grey-brown silty clay with trace sand, M>Wp		D,pp	2.3		200-250 kPa		
				D,pp	2.9		180-200 kPa		
	3 3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Free groundwater observed at 0.9m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371721
NORTHING: 6332150
DIP/AZIMUTH: 90°/--

PIT No: 36
PROJECT No: 39662C
DATE: 06 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black coal chitter, slightly silty and sandy, damp		D,PID	0.3		<1ppm		
				B	0.5		<1ppm		
				D,PID	0.8		<1ppm		
	1								1
				D,PID	1.3		<1ppm		
				D,PID	1.8		<1ppm		
	2								2
		from 2.2m, wet		D,PID	2.3		<1ppm		
	2.4	FILLING - Generally comprising soft, dark brown-black clayey silt with 15% coal chitter and some sand, slight hydrocarbon odour, moist to wet		D,PID,pp	2.5		25-50 kPa, <1ppm		
	2.8	Pit discontinued at 2.8m, due to continual collapse							
	3								3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧗ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371780
NORTHING: 6332067
DIP/AZIMUTH: 90°/--

PIT No: 37
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter, damp		D,PID	0.2		<1ppm		
				D,PID	0.7		<1ppm		
	1								1
				D,PID	1.2		<1ppm		
	1.3	SILTY CLAY - Soft to firm, dark brown mottled orange-brown silty clay with abundant organics, M>Wp (possibly filling)		D,pp	1.5		40-50 kPa	▷	
	2	from 2m, stiff		D,pp	2.0		100-150 kPa	▼	2
				D,pp	2.5		100-150 kPa		
				D,pp	2.9		150 kPa		
	3 3.0	Pit discontinued at 3.0m, limit of investigation							3

Dynamic Penetrometer Test (blows per mm): 5 10 15 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Seepage at 1.5m, free groundwater observed at 2m at end of hole

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371816
NORTHING: 6332139
DIP/AZIMUTH: 90°/--

PIT No: 38
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black fine to medium grained silty sand / coal chitter (2mm to 15mm), (approximately 50%)		D,PID	0.3		<1ppm		
		from 0.4m, approximately 70%-80% coal chitter		D,PID	0.8		<1ppm		
1	1.0	SILTY CLAY - Firm to stiff, light grey-brown silty clay, trace organics, M>Wp		D,PID,pp	1.2		90-100 kPa, <1ppm		1
	1.65	SANDY CLAY - Stiff, light grey sandy clay with trace gravel, M>Wp		D,pp	1.7		140-160 kPa		
2		from 2.2m, stiff to very stiff, grey and orange-brown		D,pp	2.2		190-340 kPa		2
	2.5	SILTY CLAY - Very stiff, grey and orange-brown silty clay with trace sand, M~Wp		D,pp	2.7		280-350 kPa		
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371816
NORTHING: 6332204
DIP/AZIMUTH: 90°/--

PIT No: 39
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising brown fine to medium grained silty sand with trace rootlets		D,PID	0.05		<1ppm		
		FILLING - Generally comprising dark brown-black coal chitter (mainly coal), with trace sand, silt and gravel, damp		D,PID	0.5		<1ppm		
				B	0.7				
	1			D,PID	1.0		<1ppm		1
	1.1	FILLING - Generally comprising grey-brown and orange-brown fine to coarse grained clayey silty sand with some gravel and coal chitter, wet		D,PID	1.2		<1ppm		
	1.4	SANDY SILTY CLAY - Very stiff, grey mottled orange and red-brown sandy silty clay with trace gravel, M<Wp		D,pp	1.5		230-270 kPa		
	2								2
		from 2.3m, stiff to very stiff		D,pp	2.5		150-200 kPa		
	3								3
	3.0	Pit discontinued at 3.0m, limit of investigation							

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371816
NORTHING: 6332252
DIP/AZIMUTH: 90°/--

PIT No: 40
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising orange-brown silty clay with trace sand and coal chitter and rootlets, M>Wp							
		FILLING - Generally comprising dark brown-black coal chitter with trace sand and silt, damp		D,PID	0.2		<1ppm		
	0.3	FILLING - Generally comprising dark grey-brown sandy silt with trace gravel, clay and coal chitter, damp to moist							
				D,PID	0.6		<1ppm		
	0.8	SILTY CLAYEY GRAVEL - Brown mottled orange-brown subrounded silty clayey gravel, moist							
1				D,PID	1.0		<1ppm		1
	1.3	SILTY CLAY - Very stiff, grey mottled orange-brown silty clay, slightly gravelly, M<Wp							
				D,pp	1.5		230 kPa		
2									2
				D,pp	2.5		250 kPa		
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371878
NORTHING: 6332106
DIP/AZIMUTH: 90°/--

PIT No: 41
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILLING - Generally comprising dark brown-black sandy silt with 30% coal chitter, some gravel and trace rootlets, damp		D,PID	0.1		<1ppm		
	0.2	FILLING - Generally comprising dark brown-black coal chitter, damp		D,PID	0.6		<1ppm		
	0.9	SILTY CLAY - Stiff, dark brown silty clay with abundant organics, M>Wp		D,PID,pp	1.1		150-170 kPa, <1ppm		
1	1.2	SILTY CLAYEY SAND - Grey fine to coarse grained silty clayey sand with some gravel, moist		D,pp	1.6				1
2				D	2.1				2
		from 2.7m, grading to silty sandy clay		D	2.6				
				D,pp	2.9		150 kPa		
3	3.0	Pit discontinued at 3.0m, limit of investigation							3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371890
NORTHING: 6332159
DIP/AZIMUTH: 90°/--

PIT No: 42
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black coal chitter with trace silt, sand and rootlets, humid		D,PID	0.3		<1ppm		
	0.4	FILLING - Generally comprising brown and dark brown silty clay, slightly sand with some subangualr gravel, coal chitter and sandstone rock fragments (10mm to 100mm), M<Wp		D,PID	0.8		<1ppm		
	0.9	FILLING - Generally comprising dark brown-black coal chitter with some train rails, damp		D,PID	1.2		<1ppm		
	1.3	SILTY CLAY - Very soft to soft silty clay with trace organics, M>Wp		D,pp	1.4		<25 kPa		
	1.6	GRAVELLY SILTY CLAY - Very stiff to hard, grey and red-brown gravelly silty clay, M<Wp		D,pp	2.0		350->450 kPa		
	2.2	Pit discontinued at 2.2m, due to historical remains							

1 2 3

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371961
NORTHING: 6332198
DIP/AZIMUTH: 90°/--

PIT No: 44
PROJECT No: 39662C
DATE: 07 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.05	FILLING - Generally comprising brown fine to medium grained silty sand with trace rootlets, damp							
		FILLING - Generally comprising, light orange-brown fine to coarse grained silty clayey subrounded gravel with some sand and trace rootlets, damp		D,PID	0.4		<1ppm		
	0.7	FILLING - Generally comprising dark brown-black coal chitter, slightly silty and sandy, damp		D,PID	0.9		<1ppm		
1	1.2	SILTY SANDY CLAY - Stiff, grey-brown silty sandy clay with some organics, M>Wp		D,pp	1.3		140 kPa		
	1.5	SILTY CLAY - Very soft to soft, light grey-brown silty clay, slightly sandy, M>>Wp		D,pp	1.6		<25 kPa		
	1.7	SILTY CLAY - Stiff to very stiff, orange-brown mottled grey silty clay with some ironcemented sand and gravel, M<Wp							
2				D,pp	2.1		140-220 kPa		
				D,pp	2.9		250 kPa		
3	3.0	Pit discontinued at 3.0m, limit of investigation							

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⧭ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371582
NORTHING: 6332164
DIP/AZIMUTH: 90°/--

PIT No: 65
PROJECT No: 39662C
DATE: 01 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt / coal chitter (20%), some subrounded gravel and rootlets, wet		D,PID	0.2		<1ppm		
		metal railway spur at 0.4m							
	0.5	FILLING - Very soft, brown silty clay / clayey silt, abundant rootlets, M>>Wp						▽	
	0.6	CLAYEY SILT - Very soft, dark grey clayey silt with abundant organics and some sand, M>>Wp		D,PID	0.7		<1ppm		
				D,pp	0.8		<25 kPa		
	1								1
		from 1.4m, grading to grey brown mottled brown silty clay		D,pp	1.4		<25 kPa		
		from 1.8m, firm to stiff, some sand							
	2			D,pp	2.0		80-110 kPa		2
				D,pp	2.5		100-150 kPa		
				D,pp	2.9		50-100 kPa		
	3								3
	3.0	Pit discontinued at 3.0m, limit of investigation							

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: Seepage at 0.5m

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ▼ Water level

CHECKED	
Initials:	
Date:	

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371270
NORTHING: 6332091
DIP/AZIMUTH: 90°/--

PIT No: 66
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - Generally comprising dark brown-black sandy silt, coal chitter with trace rootlets to 0.2m, humid		D,PID	0.25		<1ppm		
	0.35			D,PID	0.37		<1ppm		
	0.4	FILLING - Generally comprising grey-brown fine to medium grained silty sand with trace gravel, damp		D,PID,pp	0.5		250-380 kPa, <1ppm		
		SILTY CLAY - Very stiff to hard, orange mottled red-brown silty clay, M>Wp							
	1								1
		from 1.2m, light grey mottled red-brown		D,pp	1.3		360->450 kPa		
				D,pp	1.9		350->450 kPa		
	2								2
		from 2.7m, grading to claystone		D	2.7				
	3								3
	3.0	Pit discontinued at 3.0m, limit of investigation							

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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TEST PIT LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Land Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371371
NORTHING: 6332097
DIP/AZIMUTH: 90°/--

PIT No: 13A
PROJECT No: 39662C
DATE: 31 Jul 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.1	FILLING - Generally comprising light brown sandy gravelly silt with some clay, trace rootlets, humid		D,PID	0.05		<1ppm		
		FILLING - Generally comprising dark brown fine to medium grained silty sand with 30% coal chitter and trace gravel, damp		D,PID	0.35		<1ppm		
	0.45	GRAVELLY SAND - Light brown fine to medium grained gravelly sand, damp		D,PID	0.5		<1ppm		
	1								1
	1.2	GRAVELLY SANDY SILTY CLAY - Firm to stiff, light brown mottled light orange-brown gravelly sandy silty clay, M>Wp		D,pp	1.3		60-150 kPa		
		from 1.7m, very stiff orange-brown mottled grey-brown		D,pp	1.9		300-350 kPa		
	2								2
		from 2.5m, iron-cemented gravel and sand		D,pp	2.6		320-370 kPa		
	2.65	Pit discontinued at 2.65m, slow progress							
	3								3

5 10 15 20

RIG: 4WD Case 580 LE

LOGGED: Reid

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⫧ Water level

CHECKED
Initials:
Date:

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BOREHOLE LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Lands Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371680
NORTHING: 6332177
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 39662C
DATE: 09 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
									Stickup 0.525m
									Bentonite seal from surface to 0.1m
	0.3	FILLING: Generally comprising grey brown clayey silt/silty clay with some coal chitter, some rootlets, humid, M>Wp		A,PID	0.1		<1ppm		
		FILLING: Generally comprising dark brown black sandy silt / coal chitter with trace gravel, moist to wet		A,PID	0.5		<1ppm		
1		From 0.9m saturated		A,PID	1.0		<1ppm		1
					1.0				
				S,PID			<1ppm		
					1.45				
	1.8	SILTY CLAY: Firm dark brown silty clay, M>Wp							
2				A,PID	2.0		<1ppm		2
				A,PID	2.5		<1ppm		5mm sand from 0.1m to 4.7m
				S			4,2,3		
		From 2.7m firm to stiff grey brown		pp	2.7		N = 5		
							220kPa		
3				pp	2.9		160kPa		3
									Class 18 PVC screen from 1.7m to 4.7m
				A	3.5		90-120kPa		
4				A	4.0				4
	4.05	SAND: Brown fine to coarse grained sand, saturated			4.0		1,2,2		
							N = 4		
					4.45				
	4.7	SANDSTONE: Very light to light, heavily weathered grey brown fine to coarse grained sandstone							End cap
5	4.95	Bore discontinued at 4.95m, refusal		A	4.9				5
6									6
7									7

RIG: 4WD Utility Mounted Drilling Rig **DRILLER:** Foody **LOGGED:** CMR **CASING:**
TYPE OF BORING: 100mm diameter, solid flight auger (u-bit)
WATER OBSERVATIONS: Free groundwater observed at 0.9m
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED	
Initials:	
Date:	

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BOREHOLE LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Lands Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371444
NORTHING: 6332169
DIP/AZIMUTH: 90°/--

BORE No: 107
PROJECT No: 39662C
DATE: 10 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
									Stickup 0.35m
		FILLING: Generally comprising dark brown black sandy silt/coal chitter with trace rootlets to 0.1m, damp		A,PID	0.1				Bentonite seal from surface to 0.2m
		From 0.5m wet		A,PID	0.5				
1		From 0.9m some clay and gravel, subrounded		A	1.0				
	1.05								
	1.15	GRAVELLY SAND: Brown fine to coarse grained gravelly sand with trace coal and chitter, subrounded		S	1.0		1,1,1 N = 2		
		SILTY CLAY: Soft dark grey brown silty clay with trace sand and abundant organics, M>Wp			1.45				
	1.7								
		SANDY SILTY CLAY: Grey mottled brown silty clay slighty sandy, M>Wp							
2				A	2.0				
				B	2.45		3,1,2 N = 3		
				S	2.5				
3									
	3.2								
		SANDY CLAY: (Soft to firm) dark grey brown sandy clay with some silt, M>Wp		A	3.5				5mm sand from 0.2m to 6.5m
	3.6	SANDY SILTY CLAY: (Stiff) dark grey brown sandy silty clay, M>Wp							
4	4.0			A	4.0				
		SAND: Loose brown fine to medium grained sand with some gravel, saturated			4.0				
				S			2,4,5 N = 9		
				A	4.45				
					4.5				
5				A	5.0				Class 18 PVC screen from 3.5m to 6.5m
					5.5				
		From 5.5m loose to medium dense bands of silty sand and gravelly sand.		S			4,5,7 N = 12		
6	6.0				5.95				
		PEBBLY SANDSTONE: Extremely low to very low, extremely weathered to highly weathered grey brown fine to coarse grained pebbly sandstone							End cap
		From 6.7 very low to low							
7	7.0	Bore discontinued at 7.0m, refusal							

RIG: 4WD Utility Mounted Drilling Rig **DRILLER:** Foody **LOGGED:** CMR **CASING:**
TYPE OF BORING: 100mm diameter, solid flight auger (u-bit)
WATER OBSERVATIONS: Free groundwater observed at 0.9m
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED	
Initials:	
Date:	

Douglas Partners
Geotechnics · Environment · Groundwater

BOREHOLE LOG

CLIENT: Coal & Allied Pty Ltd
PROJECT: Lower Hunter Lands Development
LOCATION: Flowers Drive, Catherine Hill Bay

SURFACE LEVEL: --
EASTING: 371578
NORTHING: 6332167
DIP/AZIMUTH: 90°/--

BORE No: 108
PROJECT No: 39662C
DATE: 10 Aug 07
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
									Stickup 0.440m
		FILLING: Generally comprising dark brown black fine to coarse grained silty sand/coal chitter with trace rootlets to 0.1m, moist to wet		A,PID	0.1		<1ppm		Bentonite seal from surface to 0.2m
				A,PID	0.5		<1ppm		
	0.6	FILLING: Generally comprising (very soft to soft) silty sandy clay with abundant sand coal chitter and organics, M>Wp		A,PID	1.0		<1ppm		
1				S	1.0		1,1,1 N = 2		1
					1.45				
	1.6	SILTY SAND: (Loose) light grey brown fine to medium grained brown silty sand with trace gravel, subrounded		A	2.0				
2									2
	2.2	SILTY SANDY CLAY: Firm dark brown silty sandy clay, M>Wp		A	2.5				5mm sand from 0.2m to 5m
				S			3,3,3 N = 6		
3					2.95				3
	3.2	SILTY SANDY GRAVEL: Loose grey brown fine to medium sub-angular/subrounded silty sandy gravel, subrounded		A	3.5				Class 18 PVC screen from 2m to 5m
4				A	4.0				4
				S	4.0		2,4,6 N = 10		
					4.45				
5				A	5.0				5 End cap
	5.2	SANDSTONE: Extremely low to very low, extremely weather to highly weathered grey brown fine to coarse grained sandstone		S	5.5		10-130mm		
		From 5.6m very low to low			5.63				
	5.8	Bore discontinued at 5.8m, refusal							
6									6
7									7

RIG: 4WD Utility Mounted Drilling Rig **DRILLER:** Foody **LOGGED:** CMR **CASING:**
TYPE OF BORING: 100mm diameter, solid flight auger (u-bit refusal @ 5.75m
WATER OBSERVATIONS: Free groundwater observed at 0.9m
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	PID	Photo ionisation detector
B	Bulk sample	S	Standard penetration test
U_x	Tube sample (x mm dia.)	PL	Point load strength Is(50) MPa
W	Water sample	V	Shear Vane (kPa)
C	Core drilling	▷	Water seep ⊻ Water level

CHECKED
Initials:
Date:

Douglas Partners
Geotechnics · Environment · Groundwater

Appendix D

Laboratory Report Sheets
Quality Assurance/Quality Control Assessment

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 206966

Client Details

Client	Douglas Partners Newcastle
Attention	Michael Gawn
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	**91402.03, Catherine Hill Bay**
Number of Samples	29 Soil
Date samples received	30/11/2018
Date completed instructions received	07/12/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	14/12/2018
Date of Issue	14/12/2018

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Matt Tang
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Lucy Zhu, Asbestos Analyst
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	87	84	89	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	82	91	87	93

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	89	88	92	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	91	89	92	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	88	91	88	91

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	12/12/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	92

svTRH (C10-C40) in Soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	85	<50	59	<50	76
TRH C_{15} - C_{28}	mg/kg	400	210	550	<100	360
TRH C_{29} - C_{36}	mg/kg	160	<100	440	<100	170
TRH >C_{10} -C_{16}	mg/kg	120	55	89	<50	100
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	120	55	89	<50	100
TRH >C_{16} -C_{34}	mg/kg	500	270	910	<100	460
TRH >C_{34} -C_{40}	mg/kg	<100	<100	160	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	620	320	1,200	<50	570
Surrogate o-Terphenyl	%	106	94	108	85	100

svTRH (C10-C40) in Soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	88	<50	72	<50
TRH C_{15} - C_{28}	mg/kg	<100	450	120	400	<100
TRH C_{29} - C_{36}	mg/kg	<100	200	<100	200	<100
TRH >C_{10} -C_{16}	mg/kg	<50	130	<50	100	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	130	<50	100	<50
TRH >C_{16} -C_{34}	mg/kg	<100	560	160	540	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	690	160	640	<50
Surrogate o-Terphenyl	%	85	110	91	101	84

svTRH (C10-C40) in Soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	120	<50	76	<50	<50
TRH C_{15} - C_{28}	mg/kg	550	<100	340	<100	<100
TRH C_{29} - C_{36}	mg/kg	200	<100	160	<100	<100
TRH >C_{10} -C_{16}	mg/kg	170	<50	110	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	170	<50	110	<50	<50
TRH >C_{16} -C_{34}	mg/kg	660	<100	430	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	830	<50	540	<50	<50
Surrogate o-Terphenyl	%	109	83	107	87	86

svTRH (C10-C40) in Soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	140	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	180	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	180	<50
Surrogate o-Terphenyl	%	86	86	84	95	85

svTRH (C10-C40) in Soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	59	<50
TRH C_{15} - C_{28}	mg/kg	190	<100	<100	260	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	100	<100
TRH >C_{10} -C_{16}	mg/kg	66	<50	<50	82	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	66	<50	<50	82	<50
TRH >C_{16} -C_{34}	mg/kg	210	<100	120	310	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	280	<50	120	400	<50
Surrogate o-Terphenyl	%	95	85	90	99	83

svTRH (C10-C40) in Soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	100
Surrogate o-Terphenyl	%	87

PAHs in Soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Naphthalene	mg/kg	0.5	0.2	0.6	<0.1	0.3
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	3.8	2.0	4.4	<0.1	3.0
Anthracene	mg/kg	0.1	0.1	0.2	<0.1	0.1
Fluoranthene	mg/kg	2.3	1.1	2.2	<0.1	1.7
Pyrene	mg/kg	1.1	0.6	1.2	<0.1	0.8
Benzo(a)anthracene	mg/kg	0.9	0.5	1	<0.1	0.7
Chrysene	mg/kg	0.9	0.5	1.0	<0.1	0.7
Benzo(b,j+k)fluoranthene	mg/kg	0.6	0.4	0.8	<0.2	0.5
Benzo(a)pyrene	mg/kg	0.2	0.1	0.3	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	10	5.4	12	<0.05	8.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.6	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	114	94	95	96	91

PAHs in Soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Naphthalene	mg/kg	<0.1	0.5	<0.1	0.4	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	4.8	1.5	3.2	<0.1
Anthracene	mg/kg	<0.1	0.2	<0.1	0.2	<0.1
Fluoranthene	mg/kg	<0.1	2.6	0.7	1.9	<0.1
Pyrene	mg/kg	<0.1	1.3	0.4	1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	1.1	0.4	0.8	<0.1
Chrysene	mg/kg	<0.1	1.1	0.3	0.8	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.8	0.3	0.6	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.2	0.07	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.1	13	3.6	9.1	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	97	96	94	96

PAHs in Soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Naphthalene	mg/kg	0.9	<0.1	0.6	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	4.7	<0.1	4.5	0.7	<0.1
Anthracene	mg/kg	0.2	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	2.6	<0.1	2.2	0.4	<0.1
Pyrene	mg/kg	1.2	<0.1	1.0	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.9	<0.1	0.9	0.2	<0.1
Chrysene	mg/kg	1	<0.1	0.9	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.7	<0.2	0.7	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	<0.05	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	12	<0.05	11	1.5	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	90	94	96	95	97

PAHs in Soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	0.7	<0.1	2.4	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.4	<0.1	1.2	<0.1
Pyrene	mg/kg	<0.1	0.2	<0.1	0.6	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	0.5	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1	0.5	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.4	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.06	<0.05	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.3	1.7	<0.05	5.9	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	97	94	95	96

PAHs in Soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Naphthalene	mg/kg	0.4	<0.1	0.1	0.4	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	4.2	<0.1	1.4	3.8	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1
Fluoranthene	mg/kg	1.6	<0.1	0.7	1.7	<0.1
Pyrene	mg/kg	0.7	<0.1	0.3	0.8	<0.1
Benzo(a)anthracene	mg/kg	0.6	<0.1	0.3	0.7	<0.1
Chrysene	mg/kg	0.7	<0.1	0.3	0.8	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	0.2	0.5	<0.2
Benzo(a)pyrene	mg/kg	0.1	<0.05	0.06	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	8.9	<0.05	3.3	9.0	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	94	98	93	97

PAHs in Soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	11/12/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.9
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.5
Pyrene	mg/kg	0.3
Benzo(a)anthracene	mg/kg	0.2
Chrysene	mg/kg	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	2.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	98

Organochlorine Pesticides in soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	92	98	100	104

Organochlorine Pesticides in soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	90	92	98	98

Organochlorine Pesticides in soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	94	92	96	102

Organochlorine Pesticides in soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	96	96	74	110

Organochlorine Pesticides in soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	111	122	116	120

Organochlorine Pesticides in soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	12/12/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	121

Organophosphorus Pesticides						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.2	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.3	<0.2	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.4	<0.1	<0.2	<0.1	<0.2
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.2	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	92	98	100	104

Organophosphorus Pesticides						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	90	92	98	98

Organophosphorus Pesticides						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	94	92	96	102

Organophosphorus Pesticides						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	96	96	74	110

Organophosphorus Pesticides						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	111	122	116	120

Organophosphorus Pesticides		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	121

PCBs in Soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1221	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1232	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1242	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1248	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1254	mg/kg	<1	<1	<1	<0.1	<1
Aroclor 1260	mg/kg	<1	<1	<1	<0.1	<1
Total +ve PCBs (1016-1260)	mg/kg	<1	<1	<1	<0.1	<1
Surrogate TCLMX	%	89	92	98	100	104

PCBs in Soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1221	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1232	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1242	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1248	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1254	mg/kg	<0.1	<1	<0.1	<1	<0.1
Aroclor 1260	mg/kg	<0.1	<1	<0.1	<1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<1	<0.1	<1	<0.1
Surrogate TCLMX	%	96	90	92	98	98

PCBs in Soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1221	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1232	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1242	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1248	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1254	mg/kg	<1	<0.1	<1	<0.2	<0.1
Aroclor 1260	mg/kg	<1	<0.1	<1	<0.2	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<1	<0.1	<1	<0.2	<0.1
Surrogate TCLMX	%	94	94	92	96	102

PCBs in Soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.2	<0.1	<1	<0.1
Surrogate TCLMX	%	100	96	96	74	110

PCBs in Soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1221	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1232	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1242	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1248	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1254	mg/kg	<1	<0.1	<1	<1	<0.1
Aroclor 1260	mg/kg	<1	<0.1	<1	<1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<1	<0.1	<1	<1	<0.1
Surrogate TCLMX	%	84	111	122	116	120

PCBs in Soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date extracted	-	10/12/2018
Date analysed	-	12/12/2018
Aroclor 1016	mg/kg	<1
Aroclor 1221	mg/kg	<1
Aroclor 1232	mg/kg	<1
Aroclor 1242	mg/kg	<1
Aroclor 1248	mg/kg	<1
Aroclor 1254	mg/kg	<1
Aroclor 1260	mg/kg	<1
Total +ve PCBs (1016-1260)	mg/kg	<1
Surrogate TCLMX	%	121

Acid Extractable metals in soil						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	6	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	3	15	20	5
Copper	mg/kg	46	56	280	<1	37
Lead	mg/kg	25	38	170	5	49
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	0.1
Nickel	mg/kg	8	3	11	2	5
Zinc	mg/kg	30	86	610	8	44
Manganese	mg/kg	56	55	290	9	60
Iron	mg/kg	6,800	6,400	21,000	27,000	14,000

Acid Extractable metals in soil						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	5	<4	<4
Cadmium	mg/kg	<0.4	2	<0.4	<0.4	<0.4
Chromium	mg/kg	2	5	7	4	12
Copper	mg/kg	6	21	9	31	<1
Lead	mg/kg	5	43	20	36	4
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	mg/kg	<1	7	4	4	1
Zinc	mg/kg	19	920	35	28	2
Manganese	mg/kg	9	200	38	63	5
Iron	mg/kg	4,600	11,000	15,000	9,000	14,000

Acid Extractable metals in soil						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	0.8	<0.4	<0.4
Chromium	mg/kg	3	1	4	9	25
Copper	mg/kg	9	<1	9	20	1
Lead	mg/kg	13	2	93	190	10
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	<1	2	7	2
Zinc	mg/kg	90	5	1,800	310	6
Manganese	mg/kg	31	4	110	110	4
Iron	mg/kg	2,600	1,000	4,300	10,000	23,000

Acid Extractable metals in soil						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.6	<0.4
Chromium	mg/kg	8	7	6	7	5
Copper	mg/kg	12	9	3	18	3
Lead	mg/kg	200	41	7	210	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	1	5	1
Zinc	mg/kg	68	140	32	170	14
Manganese	mg/kg	40	71	10	100	5
Iron	mg/kg	16,000	24,000	19,000	11,000	9,200

Acid Extractable metals in soil						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	7	15	12	16
Copper	mg/kg	6	5	6	12	<1
Lead	mg/kg	6	5	7	10	9
Mercury	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Nickel	mg/kg	2	1	<1	2	<1
Zinc	mg/kg	25	39	5	18	2
Manganese	mg/kg	230	12	13	24	5
Iron	mg/kg	3,200	12,000	16,000	17,000	24,000

Acid Extractable metals in soil		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date prepared	-	10/12/2018
Date analysed	-	10/12/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	9
Copper	mg/kg	21
Lead	mg/kg	220
Mercury	mg/kg	<0.1
Nickel	mg/kg	7
Zinc	mg/kg	350
Manganese	mg/kg	110
Iron	mg/kg	9,000

Moisture						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	7.5	13	14	15	12

Moisture						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	8.1	12	10	10	14

Moisture						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	11	12	10	10	24

Moisture						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	7.6	8.3	8.7	7.4	8.0

Moisture						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	6.7	10	10	9.6	12

Moisture		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date prepared	-	10/12/2018
Date analysed	-	11/12/2018
Moisture	%	15

Asbestos ID - soils						
Our Reference		206966-2	206966-3	206966-4	206966-6	206966-7
Your Reference	UNITS	1025/0.4m	1025/1.8m	1028/0.4m	1028/1.4m	1029/0.2m
Date Sampled		28/11/2018	28/11/2018	28/11/2018	28/11/2018	28/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown clayey soil & rocks	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		206966-8	206966-9	206966-10	206966-11	206966-12
Your Reference	UNITS	1029/0.5m	1031/0.1m	1032/0.3m	1033/0.4m	1033/0.7m
Date Sampled		28/11/2018	28/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		206966-13	206966-14	206966-15	206966-16	206966-17
Your Reference	UNITS	1034/0.3m	1034/0.8m	1035/0.1m	1036/0.1m	1036/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 45g	Approx. 30g	Approx. 40g	Approx. 30g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		206966-18	206966-19	206966-20	206966-21	206966-22
Your Reference	UNITS	1037/0.1m	1038/0.1m	1038/0.4m	1039/0.05m	1039/0.35m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 40g	Approx. 40g	Approx. 40g	Approx. 35g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		206966-23	206966-24	206966-25	206966-27	206966-28
Your Reference	UNITS	1040/0.2m	1040/0.5m	1041/0.1m	1042/0.2m	1042/0.5m
Date Sampled		27/11/2018	27/11/2018	27/11/2018	27/11/2018	27/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 25g	Approx. 35g	Approx. 35g	Approx. 30g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils		
Our Reference		206966-29
Your Reference	UNITS	D1
Date Sampled		27/11/2018
Type of sample		Soil
Date analysed	-	12/12/2018
Sample mass tested	g	Approx. 30g
Sample Description	-	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	2	12/12/2018	12/12/2018		12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	2	<25	<25	0	94	77
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	2	<25	<25	0	94	77
Benzene	mg/kg	0.2	Org-016	<0.2	2	<0.2	<0.2	0	110	90
Toluene	mg/kg	0.5	Org-016	<0.5	2	<0.5	<0.5	0	91	74
Ethylbenzene	mg/kg	1	Org-016	<1	2	<1	<1	0	89	73
m+p-xylene	mg/kg	2	Org-016	<2	2	<2	<2	0	91	73
o-Xylene	mg/kg	1	Org-016	<1	2	<1	<1	0	94	77
naphthalene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	93	2	89	91	2	97	82

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	12/12/2018	12/12/2018		12/12/2018	12/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	15	<25	<25	0	94	88
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	15	<25	<25	0	94	88
Benzene	mg/kg	0.2	Org-016	[NT]	15	<0.2	<0.2	0	109	102
Toluene	mg/kg	0.5	Org-016	[NT]	15	<0.5	<0.5	0	90	83
Ethylbenzene	mg/kg	1	Org-016	[NT]	15	<1	<1	0	90	85
m+p-xylene	mg/kg	2	Org-016	[NT]	15	<2	<2	0	90	85
o-Xylene	mg/kg	1	Org-016	[NT]	15	<1	<1	0	94	88
naphthalene	mg/kg	1	Org-014	[NT]	15	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	15	88	88	0	95	89

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	12/12/2018	12/12/2018		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	27	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	27	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	27	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	27	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	27	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	27	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	27	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	27	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	27	88	87	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	2	85	96	12	118	98
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	2	400	450	12	109	81
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	2	160	190	17	111	124
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	2	120	130	8	118	98
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	2	500	560	11	109	81
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	2	<100	<100	0	111	124
Surrogate o-Terphenyl	%		Org-003	86	2	106	108	2	83	94

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	11/12/2018	11/12/2018		11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	15	76	95	22	105	116
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	15	340	430	23	97	106
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	15	160	200	22	111	121
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	15	110	130	17	105	116
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	15	430	550	24	97	106
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	15	<100	<100	0	111	121
Surrogate o-Terphenyl	%		Org-003	[NT]	15	107	110	3	82	83

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	11/12/2018	11/12/2018		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	27	59	<50	17	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	27	260	160	48	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	27	100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	27	82	<50	48	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	27	310	200	43	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	27	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	27	99	91	8	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	11/12/2018
Date analysed	-			11/12/2018	2	11/12/2018	11/12/2018		11/12/2018	12/12/2018
Naphthalene	mg/kg	0.1	Org-012	<0.1	2	0.5	0.3	50	88	78
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	87	85
Phenanthrene	mg/kg	0.1	Org-012	<0.1	2	3.8	3.4	11	88	84
Anthracene	mg/kg	0.1	Org-012	<0.1	2	0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	2	2.3	1.9	19	92	90
Pyrene	mg/kg	0.1	Org-012	<0.1	2	1.1	0.9	20	92	81
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	2	0.9	0.7	25	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	2	0.9	0.8	12	96	85
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	2	0.6	0.5	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	2	0.2	0.1	67	95	71
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	99	2	114	95	18	112	91

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Naphthalene	mg/kg	0.1	Org-012	[NT]	15	0.6	0.7	15	90	88
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	15	<0.1	0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	15	<0.1	<0.1	0	89	88
Phenanthrene	mg/kg	0.1	Org-012	[NT]	15	4.5	5.8	25	90	88
Anthracene	mg/kg	0.1	Org-012	[NT]	15	0.2	0.2	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	15	2.2	2.8	24	94	93
Pyrene	mg/kg	0.1	Org-012	[NT]	15	1.0	1.3	26	93	93
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	15	0.9	1.1	20	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	15	0.9	1.2	29	98	97
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	15	0.7	0.8	13	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	15	0.2	0.2	0	98	95
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	15	<0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	15	96	96	0	113	111

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	11/12/2018	11/12/2018		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	27	0.4	0.2	67	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	27	3.8	2.6	38	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	27	0.2	0.1	67	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	27	1.7	1.2	34	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	27	0.8	0.6	29	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	27	0.7	0.5	33	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	27	0.8	0.5	46	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	27	0.5	0.4	22	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	27	0.1	0.1	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	27	93	93	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	2	11/12/2018	11/12/2018		11/12/2018	11/12/2018
HCB	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	116	106
gamma-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	72	84
Heptachlor	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	74	86
delta-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	67	79
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	71	83
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	74	87
Dieldrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	83	97
Endrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	77	94
pp-DDD	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	77	92
Endosulfan II	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	72	90
Methoxychlor	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	132	2	89	98	10	98	98

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	12/12/2018	12/12/2018		12/12/2018	12/12/2018
HCB	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	99	83
gamma-BHC	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	81	69
Heptachlor	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	80	65
delta-BHC	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	75	64
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	79	68
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	81	69
Dieldrin	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	89	77
Endrin	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	81	68
pp-DDD	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	77	69
Endosulfan II	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	70	74
Methoxychlor	mg/kg	0.1	Org-005	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	15	92	98	6	115	89

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	12/12/2018	12/12/2018		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	27	116	116	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	2	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	2	<0.2	<0.2	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	2	<0.3	<0.3	0	90	90
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	2	<0.4	<0.4	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	83	86
Dimethoate	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	138	107
Fenitrothion	mg/kg	0.1	Org-008	<0.1	2	<0.2	<0.2	0	92	101
Malathion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	84	73
Parathion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	87	80
Ronnel	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	106	87
Surrogate TCMX	%		Org-008	132	2	89	98	10	89	94

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	12/12/2018	12/12/2018		12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	84	75
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	82	83
Dimethoate	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	98	75
Fenitrothion	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	98	97
Malathion	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	76	102
Parathion	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	85	93
Ronnel	mg/kg	0.1	Org-008	[NT]	15	<0.1	<0.1	0	94	82
Surrogate TCMX	%		Org-008	[NT]	15	92	98	6	98	72

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	12/12/2018	12/12/2018		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	27	116	116	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date extracted	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	2	11/12/2018	11/12/2018		11/12/2018	12/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	101	104
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	2	<1	<1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	132	2	89	98	10	89	92

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date extracted	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	12/12/2018	12/12/2018		12/12/2018	12/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	100	102
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	15	<1	<1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	15	92	98	6	98	75

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	12/12/2018	12/12/2018		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	27	<1	<1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	27	116	116	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	206966-3
Date prepared	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			10/12/2018	2	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Arsenic	mg/kg	4	Metals-020	<4	2	<4	<4	0	100	103
Cadmium	mg/kg	0.4	Metals-020	<0.4	2	<0.4	<0.4	0	107	97
Chromium	mg/kg	1	Metals-020	<1	2	3	3	0	105	108
Copper	mg/kg	1	Metals-020	<1	2	46	43	7	104	119
Lead	mg/kg	1	Metals-020	<1	2	25	20	22	105	120
Mercury	mg/kg	0.1	Metals-021	<0.1	2	<0.1	<0.1	0	106	104
Nickel	mg/kg	1	Metals-020	<1	2	8	7	13	103	106
Zinc	mg/kg	1	Metals-020	<1	2	30	30	0	106	83
Manganese	mg/kg	1	Metals-020	<1	2	56	45	22	100	106
Iron	mg/kg	1	Metals-020	<1	2	6800	4700	37	103	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	206966-28
Date prepared	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	15	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Arsenic	mg/kg	4	Metals-020	[NT]	15	<4	<4	0	112	89
Cadmium	mg/kg	0.4	Metals-020	[NT]	15	0.8	0.8	0	109	105
Chromium	mg/kg	1	Metals-020	[NT]	15	4	5	22	110	95
Copper	mg/kg	1	Metals-020	[NT]	15	9	13	36	107	110
Lead	mg/kg	1	Metals-020	[NT]	15	93	100	7	108	86
Mercury	mg/kg	0.1	Metals-021	[NT]	15	<0.1	<0.1	0	87	87
Nickel	mg/kg	1	Metals-020	[NT]	15	2	2	0	106	96
Zinc	mg/kg	1	Metals-020	[NT]	15	1800	2100	15	109	96
Manganese	mg/kg	1	Metals-020	[NT]	15	110	160	37	130	92
Iron	mg/kg	1	Metals-020	[NT]	15	4300	5500	24	109	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	27	4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	27	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	27	12	11	9	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	27	12	19	45	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	27	10	9	11	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	27	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	27	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	27	18	15	18	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	27	24	16	40	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	27	17000	14000	19	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Acid Extractable Metals in Soil:
Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples requested for asbestos testing were sub-sampled from jars provided by the client.

OP's in Soil - PQL has been raised due to interference from analytes(other than those being tested) in the sample 2,2d,3,4,7.
PCBs in Soil - PQL has been raised due to interference from analytes(other than those being tested) in the sample 2,2d,3,4,7,9,11,13,15,15d,16,19,21,23,25,27,29.

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CERTIFICATE OF ANALYSIS 207550

Client Details

Client	Douglas Partners Newcastle
Attention	Michael Gawn
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	**91402.03, Catherine Hill Bay**
Number of Samples	93 Soil, 7 Material
Date samples received	30/11/2018
Date completed instructions received	07/12/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	14/12/2018
Date of Issue	14/12/2018

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Matt Tang
Authorised by Asbestos Approved Signatory: Matt Tang

Results Approved By
Jeremy Faircloth, Organics Supervisor
Leon Ow, Chemist
Matthew Tang, Asbsestos Analyst
Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	115	110	105	107

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	104	103	108	106

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	105	107	105	105	111

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	101	108	110	110

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	115	110	109	105	112

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	107	107	111	113	108

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	110	116	109	109

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	109	116	119	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	101	104	98	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	96	104	111	108

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	102	102	101	106	104

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	13/12/2018	13/12/2018	13/12/2018	13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	107	106	102	100

svTRH (C10-C40) in Soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	70	<50
TRH C_{15} - C_{28}	mg/kg	<100	230	<100	440	290
TRH C_{29} - C_{36}	mg/kg	<100	140	<100	210	170
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	110	66
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	110	66
TRH >C_{16} -C_{34}	mg/kg	<100	330	<100	570	400
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	110	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	330	<50	790	460
Surrogate o-Terphenyl	%	85	96	82	100	96

svTRH (C10-C40) in Soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	60	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	350	210	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	200	100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	93	56	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	93	56	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	450	270	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	120	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	670	330	<50
Surrogate o-Terphenyl	%	81	81	95	93	82

svTRH (C10-C40) in Soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	130	<50	83
TRH C_{15} - C_{28}	mg/kg	<100	<100	660	230	510
TRH C_{29} - C_{36}	mg/kg	<100	<100	290	160	220
TRH >C_{10} -C_{16}	mg/kg	<50	<50	200	<50	140
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	200	<50	140
TRH >C_{16} -C_{34}	mg/kg	<100	<100	820	360	630
TRH >C_{34} -C_{40}	mg/kg	<100	<100	130	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	1,200	360	770
Surrogate o-Terphenyl	%	82	80	106	91	102

svTRH (C10-C40) in Soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	65	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	400	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	200	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	100	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	100	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	520	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	620	<50	<50	<50
Surrogate o-Terphenyl	%	78	94	81	81	80

svTRH (C10-C40) in Soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	93	<50	<50
TRH C_{15} - C_{28}	mg/kg	210	<100	640	<100	<100
TRH C_{29} - C_{36}	mg/kg	110	<100	390	<100	<100
TRH >C_{10} -C_{16}	mg/kg	51	<50	150	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	51	<50	150	<50	<50
TRH >C_{16} -C_{34}	mg/kg	280	<100	910	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	170	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	330	<50	1,200	<50	<50
Surrogate o-Terphenyl	%	91	79	105	80	79

svTRH (C10-C40) in Soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	120	300	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	360	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	160	580	120	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	150	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	160	730	120	<50	<50
Surrogate o-Terphenyl	%	86	89	82	83	81

svTRH (C10-C40) in Soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	72	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	490	220	<100	320	3,000
TRH C_{29} - C_{36}	mg/kg	270	150	<100	220	1,300
TRH >C_{10} -C_{16}	mg/kg	110	<50	<50	64	130
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	110	<50	<50	64	130
TRH >C_{16} -C_{34}	mg/kg	670	330	<100	480	4,100
TRH >C_{34} -C_{40}	mg/kg	120	<100	<100	100	310
Total +ve TRH (>C10-C40)	mg/kg	900	330	<50	650	4,500
Surrogate o-Terphenyl	%	99	88	80	90	#

svTRH (C10-C40) in Soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	4,900	3,500	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	2,200	1,700	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	190	99	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	190	99	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	6,900	5,000	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	510	360	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	7,600	5,400	<50	<50	<50
Surrogate o-Terphenyl	%	#	#	80	81	85

svTRH (C10-C40) in Soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	140	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	830	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	350	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	220	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	220	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	1,000	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	110	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	1,400	<50	<50	<50
Surrogate o-Terphenyl	%	82	111	82	82	86

svTRH (C10-C40) in Soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	68	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	460	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	230	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	110	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	110	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	610	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	110	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	830	<50
Surrogate o-Terphenyl	%	83	84	85	112	82

svTRH (C10-C40) in Soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	100	<50	<50
TRH C_{15} - C_{28}	mg/kg	100	<100	680	<100	110
TRH C_{29} - C_{36}	mg/kg	<100	<100	330	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	170	<50	61
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	170	<50	61
TRH >C_{16} -C_{34}	mg/kg	120	<100	890	<100	150
TRH >C_{34} -C_{40}	mg/kg	<100	<100	130	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	120	<50	1,200	<50	210
Surrogate o-Terphenyl	%	88	83	#	86	96

svTRH (C10-C40) in Soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	70	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	540	400
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	440	290
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	120	63
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	120	63
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	860	610
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	180	150
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	1,200	820
Surrogate o-Terphenyl	%	113	83	80	96	100

PAHs in Soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	0.1	<0.1	<0.1	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.6	1.9	0.6	2.5	2.2
Anthracene	mg/kg	<0.1	0.1	<0.1	0.1	0.2
Fluoranthene	mg/kg	0.3	1.1	0.4	1.7	1.4
Pyrene	mg/kg	0.2	0.6	0.2	0.8	0.7
Benzo(a)anthracene	mg/kg	0.1	0.5	0.2	0.7	0.5
Chrysene	mg/kg	0.2	0.5	0.2	0.6	0.6
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.5	<0.2	0.5	0.5
Benzo(a)pyrene	mg/kg	<0.05	0.09	0.06	0.09	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	1.4	5.4	1.7	7.0	6.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	87	87	84	85

PAHs in Soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	<0.1	0.4	0.5	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	3.2	2.7	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	0.2	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	2.0	1.4	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.9	0.6	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.7	0.6	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.9	0.6	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.6	0.5	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	8.9	7.2	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	87	84	83	90

PAHs in Soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	<0.1	0.9	0.2	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.4	<0.1	6.2	1.7	3.4
Anthracene	mg/kg	<0.1	<0.1	0.3	0.2	0.2
Fluoranthene	mg/kg	0.2	<0.1	2.9	1.2	2.1
Pyrene	mg/kg	0.1	<0.1	1.4	1	0.9
Benzo(a)anthracene	mg/kg	0.1	<0.1	1	0.6	0.7
Chrysene	mg/kg	0.1	<0.1	1.2	0.6	0.6
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.8	0.6	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.2	0.3	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.1	0.1	<0.1
Total +ve PAH's	mg/kg	0.89	<0.05	15	6.6	8.9
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	0.6	<0.5
Surrogate p-Terphenyl-d14	%	84	88	82	89	82

PAHs in Soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	3.5	<0.1	<0.1	0.2
Anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	2.1	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	0.9	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.8	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.9	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.6	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.1	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.1	9.6	<0.05	<0.05	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	83	86	83	94

PAHs in Soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	0.3	<0.1	0.4	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	2.8	<0.1	3.7	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	1.4	<0.1	2.5	<0.1	<0.1
Pyrene	mg/kg	0.7	<0.1	1.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.6	<0.1	0.9	<0.1	<0.1
Chrysene	mg/kg	0.6	<0.1	0.9	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	0.7	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	7.2	<0.05	10	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	85	80	87	85

PAHs in Soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	0.3	<0.1	0.2	1.2	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	2.1	0.6	0.9	2.2	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.9	0.4	0.5	0.4	<0.1
Pyrene	mg/kg	0.5	0.3	0.3	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.4	0.3	0.2	<0.1	<0.1
Chrysene	mg/kg	0.4	0.3	0.3	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	0.3	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	0.09	0.09	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	5.3	2.3	2.8	4.2	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	85	85	86	86

PAHs in Soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	0.4	0.2	<0.1	0.4	<1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<1
Phenanthrene	mg/kg	4.0	1.9	<0.1	3.6	<1
Anthracene	mg/kg	0.2	0.1	<0.1	0.2	<1
Fluoranthene	mg/kg	2.0	1.5	<0.1	1.8	<1
Pyrene	mg/kg	1.1	0.9	<0.1	1	<1
Benzo(a)anthracene	mg/kg	0.8	0.7	<0.1	0.7	<1
Chrysene	mg/kg	1.0	0.7	<0.1	0.8	<1
Benzo(b,j+k)fluoranthene	mg/kg	0.8	0.7	<0.2	0.7	<2
Benzo(a)pyrene	mg/kg	0.2	0.2	<0.05	0.2	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	0.1	<1
Total +ve PAH's	mg/kg	11	7.0	<0.05	9.5	<0.5
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<5
Surrogate p-Terphenyl-d14	%	86	85	87	86	87

PAHs in Soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<1	<1	<0.1	<0.1	0.4
Anthracene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<1	<1	<0.1	<0.1	0.2
Pyrene	mg/kg	<1	<1	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<1	<1	<0.1	<0.1	0.1
Chrysene	mg/kg	<1	<1	<0.1	<0.1	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<2	<2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<0.05	<0.05	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<1	<1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.5	<0.5	<0.05	<0.05	1.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<5	<5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<5	<5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<5	<5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	89	92	88	89	92

PAHs in Soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	0.8	<0.1	<0.1	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.4	6.8	<0.1	0.2	1.2
Anthracene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	3.5	<0.1	<0.1	0.5
Pyrene	mg/kg	0.1	1.7	<0.1	<0.1	0.3
Benzo(a)anthracene	mg/kg	0.1	1.3	<0.1	<0.1	0.3
Chrysene	mg/kg	0.1	1.4	<0.1	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.8	<0.2	<0.2	0.2
Benzo(a)pyrene	mg/kg	<0.05	0.2	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.96	17	<0.05	0.2	3.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	83	88	86	90

PAHs in Soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.3	0.3	<0.1	2.8	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Fluoranthene	mg/kg	0.2	0.2	<0.1	2.2	<0.1
Pyrene	mg/kg	0.1	0.1	<0.1	1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	<0.1	0.6	<0.1
Chrysene	mg/kg	0.1	0.1	<0.1	0.5	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.4	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.08	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.71	0.86	<0.05	7.8	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	87	90	93	85	87

PAHs in Soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1.5	<0.1	2.5	<0.1	0.9
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.8	<0.1	1.5	<0.1	0.3
Pyrene	mg/kg	0.4	<0.1	0.8	<0.1	0.1
Benzo(a)anthracene	mg/kg	0.3	<0.1	0.6	<0.1	0.1
Chrysene	mg/kg	0.3	<0.1	0.7	<0.1	0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	0.5	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	3.8	<0.05	7.2	<0.05	1.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	88	90	86	87

PAHs in Soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.5	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	0.5	<0.1	4.0	2.7
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	0.2
Fluoranthene	mg/kg	0.1	0.3	<0.1	2.2	1.8
Pyrene	mg/kg	<0.1	0.1	<0.1	1.2	0.9
Benzo(a)anthracene	mg/kg	<0.1	0.1	<0.1	0.9	0.7
Chrysene	mg/kg	<0.1	0.1	<0.1	1.0	0.8
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.8	0.7
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.1	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Total +ve PAH's	mg/kg	0.3	1.2	<0.05	11	8.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	89	91	88	85	86

Organochlorine Pesticides in soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	81	83	87	78

Organochlorine Pesticides in soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	86	80	80	85

Organochlorine Pesticides in soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	86	78	84	90

Organochlorine Pesticides in soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	89	88	88	87

Organochlorine Pesticides in soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	87	84	88	87

Organochlorine Pesticides in soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	85	86	89

Organochlorine Pesticides in soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	89	86	77	80

Organochlorine Pesticides in soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	82	88	92	90

Organochlorine Pesticides in soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	98	87	84	82

Organochlorine Pesticides in soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	91	90	75	85

Organochlorine Pesticides in soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	88	88	85	119

Organochlorine Pesticides in soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	87	88	92	74

Organophosphorus Pesticides						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	81	83	87	78

Organophosphorus Pesticides						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	86	80	80	85

Organophosphorus Pesticides						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	86	78	84	90

Organophosphorus Pesticides						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	89	88	88	87

Organophosphorus Pesticides						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	87	84	88	87

Organophosphorus Pesticides						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	85	86	89

Organophosphorus Pesticides						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	89	86	77	80

Organophosphorus Pesticides						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	82	88	92	90

Organophosphorus Pesticides						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.2	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	98	87	84	82

Organophosphorus Pesticides						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	91	90	75	85

Organophosphorus Pesticides						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	85	88	88	85	119

Organophosphorus Pesticides						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	87	88	92	74

PCBs in Soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1221	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1232	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1242	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1248	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1254	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Aroclor 1260	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Total +ve PCBs (1016-1260)	mg/kg	<0.2	<0.5	<0.1	<1	<0.5
Surrogate TCLMX	%	97	81	83	87	78

PCBs in Soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<1	<1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<1	<1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<1	<1	<0.1
Surrogate TCLMX	%	90	86	80	80	85

PCBs in Soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1221	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1232	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1242	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1248	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1254	mg/kg	<0.1	<0.1	<1	<0.1	<1
Aroclor 1260	mg/kg	<0.1	<0.1	<1	<0.1	<1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<1	<0.1	<1
Surrogate TCLMX	%	107	86	78	84	90

PCBs in Soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	84	89	88	88	87

PCBs in Soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.5	<0.1	<1	<0.1	<0.1
Surrogate TCLMX	%	80	87	84	88	87

PCBs in Soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1221	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1232	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1242	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1248	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1254	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Aroclor 1260	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.5	<0.2	<0.5	<0.1	<0.1
Surrogate TCLMX	%	81	83	85	86	89

PCBs in Soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<1	<1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<1	<1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<1	<1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	89	86	77	80

PCBs in Soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	82	88	92	90

PCBs in Soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1221	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1232	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1242	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1248	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1254	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Aroclor 1260	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Total +ve PCBs (1016-1260)	mg/kg	<0.2	<1	<0.1	<0.1	<0.2
Surrogate TCLMX	%	85	98	87	84	82

PCBs in Soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<1	<0.1
Surrogate TCLMX	%	84	91	90	75	85

PCBs in Soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1221	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1232	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1242	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1248	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1254	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Aroclor 1260	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Total +ve PCBs (1016-1260)	mg/kg	<0.5	<0.1	<1	<0.1	<0.5
Surrogate TCLMX	%	85	88	88	85	119

PCBs in Soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<1	<1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<1	<1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<1	<1
Surrogate TCLMX	%	86	87	88	92	74

Acid Extractable metals in soil						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	4	6	5	4
Copper	mg/kg	10	21	12	48	19
Lead	mg/kg	12	8	38	22	14
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	mg/kg	2	14	3	13	27
Zinc	mg/kg	12	18	48	15	22
Manganese	mg/kg	36	68	42	63	25
Iron	mg/kg	8,200	5,400	10,000	8,000	2,300

Acid Extractable metals in soil						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	6	4	3	2
Copper	mg/kg	2	<1	28	13	<1
Lead	mg/kg	7	4	49	120	2
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	7	<1	4	2	<1
Zinc	mg/kg	13	1	32	18	1
Manganese	mg/kg	23	2	77	58	1
Iron	mg/kg	4,300	2,600	5,500	3,400	380

Acid Extractable metals in soil						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	0.8	<0.4	<0.4
Chromium	mg/kg	8	5	3	4	3
Copper	mg/kg	37	3	15	18	20
Lead	mg/kg	35	7	15	18	24
Mercury	mg/kg	0.3	<0.1	<0.1	<0.1	0.2
Nickel	mg/kg	4	3	4	8	6
Zinc	mg/kg	83	6	140	50	8
Manganese	mg/kg	40	35	93	72	4
Iron	mg/kg	9,900	8,200	3,100	7,300	770

Acid Extractable metals in soil						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	7	12	5	10
Copper	mg/kg	10	30	<1	<1	14
Lead	mg/kg	20	25	6	3	15
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	5	<1	<1	7
Zinc	mg/kg	60	30	1	6	71
Manganese	mg/kg	45	81	2	5	330
Iron	mg/kg	6,900	11,000	28,000	8,800	20,000

Acid Extractable metals in soil						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	8	10	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	6	17	18	24
Copper	mg/kg	340	<1	34	16	1
Lead	mg/kg	120	6	23	14	11
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	9	<1	16	6	<1
Zinc	mg/kg	260	1	49	35	7
Manganese	mg/kg	210	4	240	96	6
Iron	mg/kg	19,000	18,000	40,000	25,000	26,000

Acid Extractable metals in soil						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	40	20	<4	<4	<4
Cadmium	mg/kg	0.7	0.8	<0.4	<0.4	<0.4
Chromium	mg/kg	43	22	7	11	7
Copper	mg/kg	550	280	360	64	<1
Lead	mg/kg	630	270	250	35	4
Mercury	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	14	8	16	<1
Zinc	mg/kg	18,000	2,300	260	180	26
Manganese	mg/kg	1,200	410	120	130	6
Iron	mg/kg	69,000	34,000	11,000	24,000	14,000

Acid Extractable metals in soil						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	9	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	9	3	9	5
Copper	mg/kg	140	22	<1	100	<1
Lead	mg/kg	61	46	3	80	4
Mercury	mg/kg	0.2	0.1	<0.1	0.3	<0.1
Nickel	mg/kg	9	13	<1	10	<1
Zinc	mg/kg	85	70	<1	160	2
Manganese	mg/kg	83	160	3	150	6
Iron	mg/kg	10,000	25,000	5,600	14,000	11,000

Acid Extractable metals in soil						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	13	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	14	15	25	9
Copper	mg/kg	<1	<1	<1	<1	39
Lead	mg/kg	4	4	6	6	34
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	<1	1	5
Zinc	mg/kg	2	2	1	3	76
Manganese	mg/kg	5	5	8	6	210
Iron	mg/kg	16,000	13,000	39,000	35,000	14,000

Acid Extractable metals in soil						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	5	10	9	11
Copper	mg/kg	11	29	<1	180	16
Lead	mg/kg	9	14	3	40	16
Mercury	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	4	6	<1	3	8
Zinc	mg/kg	25	28	2	180	60
Manganese	mg/kg	26	35	6	44	150
Iron	mg/kg	8,300	5,500	11,000	25,000	13,000

Acid Extractable metals in soil						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	13	26	4	4
Copper	mg/kg	12	32	<1	19	<1
Lead	mg/kg	41	85	10	9	4
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	6	<1	6	1
Zinc	mg/kg	110	200	8	7	2
Manganese	mg/kg	140	55	3	25	9
Iron	mg/kg	11,000	12,000	25,000	690	4,100

Acid Extractable metals in soil						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.4
Chromium	mg/kg	5	5	3	14	12
Copper	mg/kg	21	<1	45	<1	73
Lead	mg/kg	19	5	31	4	79
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	16	<1	8	<1	8
Zinc	mg/kg	72	1	53	1	290
Manganese	mg/kg	60	5	57	3	70
Iron	mg/kg	4,300	2,900	5,400	11,000	10,000

Acid Extractable metals in soil						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Arsenic	mg/kg	5	5	6	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	6	7	9	4
Copper	mg/kg	29	8	3	34	17
Lead	mg/kg	160	15	6	30	8
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	mg/kg	3	2	1	14	12
Zinc	mg/kg	55	12	4	98	16
Manganese	mg/kg	50	40	4	210	52
Iron	mg/kg	16,000	14,000	22,000	27,000	4,000

Acid Extractable metals in soil		
Our Reference		207550-101
Your Reference	UNITS	1020 / 0.3m - [TRIPLICATE]
Date Sampled		30/11/18
Type of sample		Soil
Date prepared	-	10/12/2018
Date analysed	-	10/12/2018
Arsenic	mg/kg	6
Cadmium	mg/kg	<0.4
Chromium	mg/kg	8
Copper	mg/kg	590
Lead	mg/kg	220
Mercury	mg/kg	0.1
Nickel	mg/kg	9
Zinc	mg/kg	210
Manganese	mg/kg	86
Iron	mg/kg	17,000

Moisture						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	7.7	20	14	18	15

Moisture						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	13	11	12	8.5	9.5

Moisture						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	19	20	11	18	8.9

Moisture						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	12	14	16	8.8	19

Moisture						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	13	12	14	9.6	16

Moisture						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	11	12	15	15	11

Moisture						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	19	16	13	14	10

Moisture						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	14	14	9.1	19	25

Moisture						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	12	17	11	14	6.9

Moisture						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	14	21	19	8.6	14

Moisture						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	20	13	19	14	15

Moisture						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/12/2018	10/12/2018	10/12/2018	10/12/2018	10/12/2018
Date analysed	-	11/12/2018	11/12/2018	11/12/2018	11/12/2018	11/12/2018
Moisture	%	16	14	11	15	19

Asbestos ID - soils						
Our Reference		207550-1	207550-2	207550-3	207550-4	207550-5
Your Reference	UNITS	1001 / 0.1m	1002 / 0.3m	1002 / 0.7m	1003 / 0.4m	1004 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 45g	Approx. 30g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-6	207550-7	207550-8	207550-9	207550-10
Your Reference	UNITS	1004 / 0.7m	1004 / 1.2m	1006 / 0.2m	1006 / 0.5m	1007 / 0.1m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-11	207550-12	207550-13	207550-14	207550-15
Your Reference	UNITS	1008 / 1.0m	1008 / 1.5m	1009 / 0.6m	1009 / 1.2m	1010 / 2.0m
Date Sampled		04/12/18	04/12/18	03/12/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-16	207550-17	207550-18	207550-19	207550-20
Your Reference	UNITS	1011 / 0.3m	1012 / 0.3m	1012 / 1.7m	1013 / 1.0m	1015 / 0.1m
Date Sampled		03/12/18	03/12/18	03/12/18	03/12/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Beige sandy soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-21	207550-22	207550-23	207550-24	207550-25
Your Reference	UNITS	1016 / 0.2m	1016 / 1.0m	1017 / 0.4m	1018 / 0.2m	1018 / 0.7m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 45g	Approx. 35g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Beige sandy soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Pink clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-26	207550-27	207550-28	207550-29	207550-30
Your Reference	UNITS	1019 / 0.1m	1019 / 0.3m	1020 / 0.3m	1020 / 1.1m	1020 / 3.05m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Beige sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-31	207550-32	207550-33	207550-34	207550-35
Your Reference	UNITS	1021 / 0.3m	1021 / 1.0m	1021 / 2.8m	1024 / 0.6m	1024 / 1.2m
Date Sampled		30/11/18	30/11/18	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 50g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey clayey soil & rocks	Brown coarse-grained soil & rocks	Grey clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-36	207550-37	207550-38	207550-39	207550-40
Your Reference	UNITS	1024 / 1.8m	1024 / 2.7m	1026 / 0.3m	1026 / 0.6m	1027 / 0.2m
Date Sampled		30/11/18	30/11/2018	30/11/18	30/11/18	30/11/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 40g	Approx. 35g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Beige sandy soil & rocks	Beige sandy soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-41	207550-42	207550-43	207550-44	207550-45
Your Reference	UNITS	1030 / 0.55m	1030 / 1.2m	1030 / 1.7m	1046 / 0.1m	1047 / 0.3m
Date Sampled		30/11/18	30/11/18	30/11/18	03/12/18	03/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Beige sandy soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-46	207550-47	207550-48	207550-49	207550-50
Your Reference	UNITS	1047 / 0.7m	1048 / 0.2m	1048 / 0.6m	1051 / 0.7m	1051 / 1.7m
Date Sampled		03/12/18	03/12/18	03/12/18	04/12/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 35g	Approx. 30g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Pink clayey soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-51	207550-52	207550-53	207550-54	207550-55
Your Reference	UNITS	1052 / 1.0m	1052 / 1.8m	1054 / 0.4m	1054 / 1.0m	1055 / 0.2m
Date Sampled		04/12/18	04/12/18	04/12/18	04/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 45g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Grey clayey soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-56	207550-57	207550-58	207550-59	207550-60
Your Reference	UNITS	1056 / 0.1m	1057 / 0.15m	1057 / 0.7m	D4	D6
Date Sampled		03/12/18	03/12/18	03/12/18	30/11/18	04/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Grey sandy soil & rocks	Beige sandy soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-62	207550-63	207550-65	207550-66	207550-67
Your Reference	UNITS	S1	S3	S4A	S6	S7
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 45g	Approx. 25g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-68	207550-69	207550-70	207550-71	207550-73
Your Reference	UNITS	S8	S9	S10	S12	S14A
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 45g	Approx. 30g	Approx. 45g	Approx. 30g	Approx. 15
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-75	207550-76	207550-78	207550-80	207550-81
Your Reference	UNITS	S15A	S16	S17A	S18A	S19
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 30g	24.22	Approx. 25g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-83	207550-84	207550-85	207550-86	207550-87
Your Reference	UNITS	S21A	S22	S24	S25	S26
Date Sampled		05/12/18	05/12/2018	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 20g	Approx. 20g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-88	207550-89	207550-90	207550-91	207550-92
Your Reference	UNITS	S27	S28	S30	S32	S33
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 25g	Approx. 40g	Approx. 20g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		207550-93	207550-94	207550-95	207550-96	207550-97
Your Reference	UNITS	S34	S35	S37	S38	S39
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 30g	Approx. 35g	Approx. 20g	Approx. 30g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils				
Our Reference		207550-98	207550-99	207550-100
Your Reference	UNITS	S40	S41	S23
Date Sampled		05/12/18	05/12/18	05/12/2018
Type of sample		Soil	Soil	Soil
Date analysed	-	12/12/2018	12/12/2018	12/12/2018
Sample mass tested	g	Approx. 20g	Approx. 20g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		207550-61	207550-64	207550-72	207550-74	207550-77
Your Reference	UNITS	1039F	S4	S14	S15	S17
Date Sampled		05/12/18	05/12/18	05/12/18	05/12/18	05/12/18
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	10/12/2018	10/12/2018	10/12/2018	13/12/2018	10/12/2018
Mass / Dimension of Sample	-	140x100x5mm	30x10x5mm	45x40x5mm	70x60x5mm	75x55x5mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Grey compressed fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected

Asbestos ID - materials			
Our Reference		207550-79	207550-82
Your Reference	UNITS	S18	S21
Date Sampled		05/12/18	05/12/18
Type of sample		Material	Material
Date analysed	-	10/12/2018	10/12/2018
Mass / Dimension of Sample	-	140x100x5mm	28x20x5mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			13/12/2018	1	13/12/2018	13/12/2018		13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	117	106
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	117	106
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	123	109
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	116	102
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	117	107
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	115	105
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	121	108
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	110	1	108	112	4	125	110

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	13/12/2018	13/12/2018		13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	11	<25	<25	0	106	114
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	11	<25	<25	0	106	114
Benzene	mg/kg	0.2	Org-016	[NT]	11	<0.2	<0.2	0	109	120
Toluene	mg/kg	0.5	Org-016	[NT]	11	<0.5	<0.5	0	103	113
Ethylbenzene	mg/kg	1	Org-016	[NT]	11	<1	<1	0	106	113
m+p-xylene	mg/kg	2	Org-016	[NT]	11	<2	<2	0	105	113
o-Xylene	mg/kg	1	Org-016	[NT]	11	<1	<1	0	109	118
naphthalene	mg/kg	1	Org-014	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	11	105	107	2	110	121

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	13/12/2018	13/12/2018		13/12/2018	13/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	21	<25	<25	0	106	92
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	21	<25	<25	0	106	92
Benzene	mg/kg	0.2	Org-016	[NT]	21	<0.2	<0.2	0	110	97
Toluene	mg/kg	0.5	Org-016	[NT]	21	<0.5	<0.5	0	103	90
Ethylbenzene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	107	93
m+p-xylene	mg/kg	2	Org-016	[NT]	21	<2	<2	0	105	89
o-Xylene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	111	94
naphthalene	mg/kg	1	Org-014	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	21	115	115	0	108	101

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	13/12/2018	13/12/2018		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	31	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	31	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	31	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	31	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	31	108	110	2	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	13/12/2018	13/12/2018		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	41	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	41	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	41	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	41	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	41	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	41	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	41	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	41	96	101	5	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	13/12/2018	13/12/2018		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	51	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	51	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	51	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	51	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	51	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	51	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	51	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	51	102	100	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			11/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	107	117
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	88	114
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	130	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	107	117
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	88	114
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	130	#
Surrogate o-Terphenyl	%		Org-003	84	1	85	85	0	102	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	10/12/2018	10/12/2018		11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	11	<50	<50	0	110	108
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	11	<100	<100	0	102	102
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	11	<100	<100	0	111	85
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	11	<50	<50	0	110	108
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	11	<100	<100	0	102	102
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	11	<100	<100	0	111	85
Surrogate o-Terphenyl	%		Org-003	[NT]	11	82	81	1	81	79

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	11/12/2018	11/12/2018		11/12/2018	11/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	21	<50	<50	0	114	112
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	21	210	150	33	107	103
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	21	110	<100	10	130	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	21	51	<50	2	114	112
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	21	280	200	33	107	103
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	130	#
Surrogate o-Terphenyl	%		Org-003	[NT]	21	91	88	3	85	111

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	11/12/2018	11/12/2018		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	31	72	94	27	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	31	490	640	27	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	31	270	360	29	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	31	110	160	37	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	31	670	870	26	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	31	120	170	34	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	31	99	104	5	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	11/12/2018	11/12/2018		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	41	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	41	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	41	82	82	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	11/12/2018	11/12/2018		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	51	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	51	100	110	10	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	51	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	51	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	51	120	150	22	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	51	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	51	88	88	0	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			11/12/2018	1	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Date analysed	-			12/12/2018	1	12/12/2018	12/12/2018		12/12/2018	12/12/2018
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	88	84
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	87	82
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	0.6	1.2	67	89	74
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	0.3	0.3	0	90	74
Pyrene	mg/kg	0.1	Org-012	<0.1	1	0.2	0.2	0	88	72
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	0.1	0.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	1	0.2	0.2	0	97	70
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	98	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	94	1	104	88	17	104	93

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Date analysed	-			[NT]	11	12/12/2018	12/12/2018		12/12/2018	12/12/2018
Naphthalene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	89	88
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	88	87
Phenanthrene	mg/kg	0.1	Org-012	[NT]	11	0.4	0.4	0	90	88
Anthracene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	11	0.2	0.2	0	92	91
Pyrene	mg/kg	0.1	Org-012	[NT]	11	0.1	0.1	0	90	90
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	11	0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	11	0.1	0.1	0	97	94
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	11	<0.05	<0.05	0	97	95
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	11	84	84	0	105	99

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Date analysed	-			[NT]	21	12/12/2018	12/12/2018		12/12/2018	12/12/2018
Naphthalene	mg/kg	0.1	Org-012	[NT]	21	0.3	0.2	40	90	82
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	89	76
Phenanthrene	mg/kg	0.1	Org-012	[NT]	21	2.8	2.0	33	90	#
Anthracene	mg/kg	0.1	Org-012	[NT]	21	0.2	<0.1	67	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	21	1.4	1	33	92	#
Pyrene	mg/kg	0.1	Org-012	[NT]	21	0.7	0.5	33	90	#
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	21	0.6	0.4	40	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	21	0.6	0.4	40	97	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	21	0.5	0.4	22	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	21	0.1	0.09	11	100	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	21	88	83	6	104	93

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	11/12/2018	11/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	12/12/2018	12/12/2018		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	31	0.4	0.6	40	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	31	4.0	5.0	22	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	31	0.2	0.2	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	31	2.0	2.4	18	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	31	1.1	1.2	9	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	31	0.8	1.0	22	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	31	1.0	1.1	10	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	31	0.8	0.8	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	31	0.2	0.2	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	31	0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	31	86	86	0	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	11/12/2018	11/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	12/12/2018	12/12/2018		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	41	0.4	0.6	40	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	41	0.2	0.3	40	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	41	0.1	0.2	67	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	41	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	41	0.1	0.2	67	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	41	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	41	86	85	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	11/12/2018	11/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	12/12/2018	12/12/2018		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	51	0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	51	1.5	1.4	7	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	51	0.8	0.9	12	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	51	0.4	0.4	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	51	0.3	0.3	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	51	0.3	0.3	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	51	0.3	0.3	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	51	<0.05	0.07	33	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	51	88	90	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	1	11/12/2018	11/12/2018		11/12/2018	11/12/2018
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	104	93
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	85	75
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	90	84
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	79	73
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	85	78
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	87	78
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	95	87
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	82	84
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	96	89
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	93	85
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	92	1	97	96	1	99	85

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	11/12/2018	11/12/2018		11/12/2018	11/12/2018
HCB	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	101	99
gamma-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	83	82
Heptachlor	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	84	80
delta-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	78	77
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	83	81
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	84	84
Dieldrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	93	91
Endrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	79	74
pp-DDD	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	91	89
Endosulfan II	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	73	61
Methoxychlor	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	11	107	96	11	98	95

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	11/12/2018	11/12/2018		12/12/2018	12/12/2018
HCB	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	101	92
gamma-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	82	76
Heptachlor	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	87	95
delta-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	77	76
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	82	81
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	82	81
Dieldrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	91	90
Endrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	75	90
pp-DDD	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	91	90
Endosulfan II	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	89	90
Methoxychlor	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	21	80	82	2	96	89

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	11/12/2018	11/12/2018		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	31	89	97	9	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	12/12/2018	12/12/2018		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	41	85	85	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	12/12/2018	12/12/2018		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	51	85	82	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	1	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	88	90
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	98	102
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	88	80
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	102	99
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	86	77
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	87	92
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	96	95
Surrogate TCMX	%		Org-008	92	1	97	96	1	88	78

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	85	70
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	87	68
Dimethoate	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	82	63
Fenitrothion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	93	104
Malathion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	76	93
Parathion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	86	90
Ronnel	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	88	70
Surrogate TCMX	%		Org-008	[NT]	11	107	96	11	90	84

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	11/12/2018	11/12/2018		12/12/2018	12/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	90	95
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	100	91
Dimethoate	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	90	93
Fenitrothion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	104	83
Malathion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	81	106
Parathion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	88	92
Ronnel	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	96	91
Surrogate TCMX	%		Org-008	[NT]	21	80	82	2	86	96

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	11/12/2018	11/12/2018		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	31	89	97	9	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	12/12/2018	12/12/2018		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	41	85	85	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	12/12/2018	12/12/2018		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	51	85	82	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date extracted	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			12/12/2018	1	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	106	104
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	92	1	97	96	1	88	78

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date extracted	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	11/12/2018	11/12/2018		11/12/2018	11/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	100	91
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	11	107	96	11	90	84

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date extracted	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	11/12/2018	11/12/2018		12/12/2018	12/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	96	100
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	21	80	82	2	86	96

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	11/12/2018	11/12/2018		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	31	89	97	9	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	12/12/2018	12/12/2018		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	41	85	85	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	12/12/2018	12/12/2018		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	51	<0.5	<0.5	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	[NT]	51	85	82	4	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	207550-2
Date prepared	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			10/12/2018	1	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	117	99
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	105	102
Chromium	mg/kg	1	Metals-020	<1	1	7	6	15	113	107
Copper	mg/kg	1	Metals-020	<1	1	10	8	22	123	114
Lead	mg/kg	1	Metals-020	<1	1	12	12	0	113	112
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	106	104
Nickel	mg/kg	1	Metals-020	<1	1	2	2	0	111	111
Zinc	mg/kg	1	Metals-020	<1	1	12	10	18	107	108
Manganese	mg/kg	1	Metals-020	<1	1	36	35	3	109	118
Iron	mg/kg	1	Metals-020	<1	1	8200	11000	29	109	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	207550-22
Date prepared	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	11	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Arsenic	mg/kg	4	Metals-020	[NT]	11	<4	<4	0	102	99
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	105	103
Chromium	mg/kg	1	Metals-020	[NT]	11	8	7	13	105	104
Copper	mg/kg	1	Metals-020	[NT]	11	37	36	3	111	117
Lead	mg/kg	1	Metals-020	[NT]	11	35	29	19	108	105
Mercury	mg/kg	0.1	Metals-021	[NT]	11	0.3	0.2	40	110	108
Nickel	mg/kg	1	Metals-020	[NT]	11	4	5	22	107	107
Zinc	mg/kg	1	Metals-020	[NT]	11	83	76	9	103	100
Manganese	mg/kg	1	Metals-020	[NT]	11	40	34	16	106	106
Iron	mg/kg	1	Metals-020	[NT]	11	9900	8200	19	110	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	207550-42
Date prepared	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Date analysed	-			[NT]	21	10/12/2018	10/12/2018		10/12/2018	10/12/2018
Arsenic	mg/kg	4	Metals-020	[NT]	21	<4	4	0	117	100
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	104	101
Chromium	mg/kg	1	Metals-020	[NT]	21	10	13	26	113	106
Copper	mg/kg	1	Metals-020	[NT]	21	340	270	23	121	117
Lead	mg/kg	1	Metals-020	[NT]	21	120	170	34	112	108
Mercury	mg/kg	0.1	Metals-021	[NT]	21	<0.1	0.1	0	104	99
Nickel	mg/kg	1	Metals-020	[NT]	21	9	11	20	110	107
Zinc	mg/kg	1	Metals-020	[NT]	21	260	300	14	106	103
Manganese	mg/kg	1	Metals-020	[NT]	21	210	190	10	109	105
Iron	mg/kg	1	Metals-020	[NT]	21	19000	17000	11	110	#

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	26	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	26	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	26	40	37	8	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	26	0.7	0.8	13	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	26	43	39	10	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	26	550	490	12	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	26	630	550	14	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	26	0.3	<0.1	100	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	26	4	4	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	26	18000	15000	18	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	26	1200	1100	9	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	26	69000	57000	19	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	27	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	27	20	11	58	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	27	0.8	1	22	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	27	22	25	13	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	27	280	230	20	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	27	270	220	20	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	27	<0.1	0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	27	14	22	44	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	27	2300	1500	42	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	27	410	390	5	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	27	34000	38000	11	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	28	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	28	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	28	<4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	28	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	28	7	7	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	28	360	980	93	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	28	250	340	31	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	28	<0.1	0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	28	8	10	22	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	28	260	270	4	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	28	120	86	33	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	28	11000	11000	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	31	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	31	<4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	31	5	7	33	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	31	140	140	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	31	61	64	5	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	31	0.2	0.2	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	31	9	8	12	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	31	85	81	5	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	31	83	98	17	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	31	10000	13000	26	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	41	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	41	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	41	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	41	6	6	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	41	11	12	9	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	41	9	6	40	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	41	4	5	22	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	41	25	24	4	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	41	26	37	35	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	41	8300	7000	17	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Date analysed	-			[NT]	51	10/12/2018	10/12/2018		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	51	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	51	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	51	5	4	22	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	51	21	21	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	51	19	16	17	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	51	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	51	16	15	6	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	51	72	70	3	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	51	60	68	12	[NT]	[NT]
Iron	mg/kg	1	Metals-020	[NT]	51	4300	4200	2	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

TRH Soil C10-C40 NEPM - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in samples 2 and 42 has caused interference.
Percent recovery for the surrogate is not possible to report as the high concentration of analytes in samples 35,36,37, and 52 have caused interference.

8 metals in soil - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 207550-28 for Cu. Therefore a triplicate result has been issued as laboratory sample number 207550-101.

PAHs in Soil - PQL has been raised due to interference from analytes(other than those being tested) in the samples 35,36 and 37.
PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of the sample/s.

PCBs in Soil - PQL has been raised due to interference from analytes(other than those being tested) in the sample 1,1d,2,4,5,8,9,13,15,17,21,21d,23,26,27,28,31,31d,32,41,41d,42,45,49,51,51d,53,55.
OP's in Soil - PQL has been raised due to interference from analytes(other than those being tested) in the sample 42.

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples 207550-1 to 60 were sub-sampled from jars provided by the client.

Asbestos: Excessive sample volumes were provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples 207550-61 to 100 were sub-sampled from bags provided by the client.

Quality Assurance / Quality Control
Detailed Site Investigation for Contamination
Flowers Drive, Catherine Hill Bay

Quality Assurance (QA) was maintained by:

- Compliance with a Project Quality Plan written for the objectives of the study;
- Using qualified engineers/scientists to undertake the field supervision and sampling;
- Following the Douglas Partners Pty Ltd (DP) operating procedures for sampling, field testing and decontamination as presented in Table D1; and
- Using NATA registered laboratories for sample testing that generally utilise standard laboratory methods of the US EPA, the APHA and NSW EPA.

Table D1: Field Procedures

Abbreviation	Procedure Name
FPM LOG	Logging
FPM DECONT	Decontamination of Personnel and Equipment
FPM ENVID	Sample Identification, Handling, Transport and Storage of Contamination Samples
FPM PIDETC	Operation of Field Analysers
FPM ENVSAMP	Sampling of Contaminated Soils

Notes to Table D1:
From DP Field Procedures Manual

Quality Control (QC) of the laboratory programme was achieved by the following means:

- Check Replicates – a specific sample was split in the field, placed in separate containers and labelled with different sample numbers, and sent to the laboratory for analysis;
- Method blanks - the laboratory ran reagent blanks to confirm the equipment and standards used were uncontaminated;
- Laboratory replicates - the laboratory split samples internally and conducted tests on separate extracts;
- Laboratory spikes - samples were spiked by the laboratory with a known concentration of contaminants and subsequently tested for percent recovery.

A. Replicates

A measure of the consistency of results for field samples is derived by the calculation of relative percentage differences (RPDs) for duplicate samples.

Replicates were tested to assess data 'precision' and the reproducibility as a measure of consistency of sampling techniques. Replicate samples were analysed at a rate of approximately 5% of primary samples. For soil samples, three intra-laboratory replicates were analysed. The Relative Percent Difference (RPD) between replicate results is used as a measure of laboratory reproducibility and is given by the following:

$$RPD = \frac{ABS(Replicate result 1 - Replicate result 2)}{(Replicate result 1 + Replicate result 2)/2} x 100$$

The RPD can have a value between 0% and 200%. An RPD data quality objective of up to 30% is considered to be within the acceptable range.

The comparative results of analysis between primary and duplicate samples are summarised in the table below. Where one or both results were below the PQL, an RPD was not calculated and have not been shown.

Table 3: RPD (%) Results for Soil (mg/kg)

Analyte		Sample ID and RPD								
		1036 / 0.1	D1	RPD	1017 / 0.4	D4	RPD	1002 / 0.3	D6	RPD
PAH	Total +ve PAHs	1.5	2.1	33	10	11	10	5.4	8.1	40
Metals	Arsenic	-	-	-	8	6	29	-	-	-
	Chromium (III+VI)	-	-	-	17	9	62	-	-	-
	Copper	20	21	5	-	-	-	21	17	21
	Lead	190	220	15	23	30	26	-	-	-
	Nickel	-	-	-	16	14	13	14	12	15
	Zinc	310	350	12	49	98	67	18	16	12
	Manganese	-	-	-	240	210	13	52	42	21
TRH	C10-C16	-	-	-	150	120	22	-	-	-
	F2-NAPHTHALENE	-	-	-	150	120	22	50	63	23
	F3	-	-	-	910	860	6	330	610	60
	F4	-	-	-	170	180	6	-	-	-
	Benzo(a) pyrene	-	-	-	-	-	-	0.09	0.2	76

The average RPD for individual contaminants were generally within the laboratory acceptance limits, with the exception of minor RPD exceedances for PAHs, TRH, B(a)P and total metals for a number of samples. The elevated RPDs in soil for PAHs, TRH and B(a)P were considered acceptable due to the non-homogenous nature of the filling. Similarly, the elevated RPDs in soil for metals (Cr, Zn) is considered to be due to the relatively low concentrations detected which results in high RPDs for small changes in concentration.

B. Method Blanks

All method blanks returned results lower than the laboratory detection limit, therefore are acceptable.

C. Laboratory Spikes

Recoveries in the order of 70% to 130% are generally considered to be acceptable for inorganic material and 60% to 140% for organic material. The recovered laboratory spikes ranged from 61% to 130% and are considered within the quality control objectives. The results should however be qualified and may slightly under-estimate or over-estimate contaminant concentrations in certain samples (ie biased low or high respectively).

D. Laboratory Replicates

The average RPD for individual contaminants were generally within the lab acceptance limits. Where RPDs for metals exceeded the laboratory acceptance limits, the laboratory conducted triplicate analyses which were found to be commensurate with the initial testing. The results are therefore considered acceptable.

E. Sample Holding Times

No samples were analysed outside the recommended holding times and is therefore considered acceptable.

Conclusions

In summary, while minor elevated results were identified, they can generally be attributed to the relatively low concentration of contaminants and the non-homogenous nature of the filling.

The accuracy and precision of the soil and water testing procedures, as inferred by the laboratory QA/QC data is considered to be of sufficient standard to allow the data reported to be used in interpret site contamination conditions.

Appendix E

Chain of Custody (Field and Despatch)
Sample Receipts

Douglas Partners
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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd

Project: DSI Area B Project No: 91402.03

Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
			Sample Type (tick)					Sampling			Received by: DP	Sample Sent (tick) ✓	
											Date:	Lab: ENVIROLAB	
Sample ID	Depth (m)	Duplicate / Replicate Sample	S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Storage Location*	Date: 29/11/18 6/12/18	
1038	0.1	–	S	E	–	✓	–	RJP	29/11/18	10:30am	Fridge	✓	
↓	0.4	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	✓	
↓	0.7	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	✓	
1040	0.2	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.3	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.5	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1023	0.1	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.5	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1037	0.1	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.5	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1039	0.05	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.35	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1036	0.1	D1	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.5	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1035	0.1	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.4	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
1042	0.2	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.5	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	0.9	–	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd
Project: DSI Area B Project No: 91402.03
Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
Sample ID	Depth (m)	Duplicate / Replicate Sample	Sample Type (tick)					Sampling			Received by:	Sample Sent (tick)	
											Date:	Lab: ENVIROLAB	
			S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Storage Location*	Date: 29/11/18 6/12/18	
1041	0.1	–	S	E	–	✓	–	MJP	27/11/18	2pm	Fridge	✓	
↓	0.4	–											
1034	0.3	–											
↓	0.8	–											
↓	1.2	–											
1033	0.4	–											
↓	0.7	–											
1032	0.3	D2											
↓	0.7	–											
1025	0.2	–	S	E	–	✓	–	MJP	28/11/18	9am	Fridge		
	0.4	–											
	1.8	–											
	2.4	–											
1029	0.2	–											
	0.5	–											
	0.8	–											
1028	0.4	D3											
	1.0	–											
	1.4	–											
1031	0.1	–											

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
0.3 - Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

Douglas Partners
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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd
Project: DSI Area B
Location: Flavers Dr, Catherine Hill Bay
Project No: 91402.03

Field										DP Office	Despatch	Notes
Sample ID	Depth (m)	Duplicate / Replicate Sample	Sample Type (tick)					Sampling			Received by: DP	Sample Sent (tick)	
			S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Date: 30/11/18	Lab: ENVIROLAB	
											Storage Location*	Date: 29/11/18 6/12/18	
1021	0.3		S	✓	—	✓	—	MJP	30/11/18	7am	Fridge	✓	
↓	1.0		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
↓	2.0												
↓	2.8												
↓	3.3												
1024	0.2												
↓	0.6												
↓	1.2												
↓	1.8												
↓	2.7												
1020	0.3												
↓	1.1												
↓	2.1												
↓	3.0												
1017	0.4	DUP											
1015	0.1												
↓	0.3												
1016	0.2												
↓	0.6												
↓	1.0												

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd

Project: DSI Area B Project No: 91402.03

Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
Sample ID	Depth (m)	Duplicate / Replicate Sample	Sample Type (tick)					Sampling			Received by: DP Date: 30/11/18	Sample Sent (tick) Lab: ENVIROLAB	
			S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Storage Location*	Date: 29/11/18 6/12/18	
1016	1.4		S	✓	—	✓	—	MDP	30/11/18	12pm	Fridge	✓	
1018	0.2												
↓	0.7												
1019	0.1												
↓	0.3												
↓	0.6												
1022	0.1												
↓	0.6												
1026	0.3												
↓	0.6												
1030	0.3												
↓	0.55												
	0.9												
↓	1.2												
	1.7												
↓	2.4												
1027	0.2												
↓	0.5												
↓	0.9											↓	

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

Douglas Partners
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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd
Project: DSI Area B Project No: 91402.03
Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
Sample ID	Depth (m)	Duplicate / Replicate Sample	Sample Type (tick)					Sampling			Received by: DP Date: 2/12/18 Storage Location*	Sample Sent (tick) Lab: ENV. LABS Date: 29/11/18 6/12/18	
			S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time			
1013	0.2		S	✓	–	✓	–	MJP	3/12/18	7am	Fridge	✓	
	1.0										✓		
	1.4												
1012	0.3												
	1.0												
	1.7												
1014	0.05												
	0.6												
1046	0.1												
	0.6												
1045	0.05												
	0.3												
1057	0.15												
	0.3												
	0.7												
1056	0.1												
	0.4												
1044	0.1												
	0.25												
	0.5											↓	

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd
Project: DSI Area B Project No: 91402.03
Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
Sample ID	Depth (m)	Duplicate / Replicate Sample	Sample Type (tick)					Sampling			Received by: DP Date: 4/12/18 Storage Location*	Sample Sent (tick) Lab: ENVIROLABS Date: 29/11/18 6/12/18	
			S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time			
1048	0.2	DS	S	✓	–	✓	–	MOP	3/12/18	12pm	Fridge	✓	
	0.6												
1049	0.1												
	0.6												
1010	0.3												
	2.0												
1047	0.3												
	0.7												
1009	0.6												
	1.2												
	2.0												
	2.4												
1011	0.3												
	1.0												
1054	0.4		S	✓	–	✓	–	MOP	4/12/18	7am	Fridge		
	1.0												
	2.0												
1008	0.3												
	1.0											✓	
	1.5												

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd

Project: DSI Area B Project No: 91402.03

Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
			Sample Type (tick)					Sampling			Received by: UP	Sample Sent (tick)	
											Date: 4/12/18	Lab: ENVIROLAB	
Sample ID	Depth (m)	Duplicate / Replicate Sample	S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Storage Location*	Date: 29/11/18 6/12/18	
1007	0.1		S	✓	–	–	✓	TMP	4/12/18	10am	Fridge	✓	
	0.6												
	1.0												
1051	0.7												
	1.7												
1005	0.1												
	0.8												
	1.2												
1006	0.2												
	0.5												
	0.9												
1004	0.2												
	0.7												
	1.2												
1003	0.4												
	1.0												
1053	0.3												
	0.8												
1001	0.1												
	0.3												

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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CHAIN OF CUSTODY FIELD SHEET

Client: Wallalong Land Developments Pty Ltd

Project: DSI Area B Project No: 91402.03

Location: Flavers Dr, Catherine Hill Bay

Field											DP Office	Despatch	Notes
			Sample Type (tick)					Sampling			Received by: DP	Sample Sent (tick)	
											Date: 4/12/18	Lab: Envirolab	
Sample ID	Depth (m)	Duplicate / Replicate Sample	S-soil W-water F-Fibro	Enviro	ASS	PID	Geo (bag / tube)	By	Date	Time	Storage Location*	Date: 29/11/18 6/12/18	
1001	0.7		S	✓	–	✓	–	MJP	4/12/18	3pm	Fridge	✓	
1002	1.0												
↓	1.8												
1002	0.3	SD6											
↓	0.7							↓	↓	↓			
↓	1.5												
1043	0.2							MJP	5/12/18	9am			
1055	0.2												
1050	0.05							↓	↓	↓	↓	↓	

Default containers - Soil (Environmental): glass, clear 125/250 mL with teflon liner
- Acid Sulphate Soil (ASS): double-wrapped plastic
- PID screening and fibro: plastic ziplock bag
- Soil (Geotechnical): plastic bag

*Default storage - Glass containers in fridge, ASS samples in fridge or freezer, PID and Geotechnical plastic bags shelved, all water samples in fridge or sent on the sample date

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206966

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1025 / 0.2 m	28/11/18	S	1											
1025 / 0.4 m	28/11/18	S	2	x	x	x	x	x	x					Combo 6A
1025 / 1.8 m	28/11/18	S	3	x	x	x	x	x	x					Combo 6A
1028 / 0.4 m	28/11/18	S	4	x	x	x	x	x	x					Combo 6A
1028 / 1.0 m	28/11/18	S	5											
1028 / 1.4 m	28/11/18	S	6	x	x	x	x	x	x					Combo 6A
1029 / 0.2 m	28/11/18	S	7	x	x	x	x	x	x					Combo 6A
1029 / 0.5 m	28/11/18	S	8	x	x	x	x	x	x					Combo 6A
1031 / 0.1 m	28/11/18	S	9	x	x	x	x	x	x					Combo 6A
1032 / 0.3 m	27/11/18	S	10	x	x	x	x	x	x					Combo 6A
1033 / 0.4 m	27/11/18	S	11	x	x	x	x	x	x					Combo 6A
1033 / 0.7 m	27/11/18	S	12	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse - As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 7/12/18 (COC)

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1034 / 0.3 m	27/11/18	S	13	x	x	x	x	x	x					Combo 6A
1034 / 0.8 m	27/11/18	S	14	x	x	x	x	x	x					Combo 6A
1035 / 0.1 m	27/11/18	S	15	x	x	x	x	x	x					Combo 6A
1036 / 0.1 m	27/11/18	S	16	x	x	x	x	x	x					Combo 6A
1036 / 0.5 m	27/11/18	S	17	x	x	x	x	x	x					Combo 6A
1037 / 0.1m	27/11/18	S	18	x	x	x	x	x	x					Combo 6A
1038 / 0.1m	27/11/18	S	19	x	x	x	x	x	x					Combo 6A
1038 / 0.4m	27/11/18	S	20	x	x	x	x	x	x					Combo 6A
1039 / 0.05 m	27/11/18	S	21	x	x	x	x	x	x					Combo 6A
1039 / 0.35 m	27/11/18	S	22	x	x	x	x	x	x					Combo 6A
1040 / 0.2m	27/11/18	S	23	x	x	x	x	x	x					Combo 6A
1040 / 0.5m	27/11/18	S	24	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse - As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day · ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref:.....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067
DP Order No: 141513	**DP Contact Person: Michael Gawn**	
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200** **Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1041 / 0.1 m	27/11/18	S	25	x	x	x	x	x	x					Combo 6A
1041 / 0.4 m	27/11/18	S	26											
1042 / 0.2 m	27/11/18	S	27	x	x	x	x	x	x					Combo 6A
1042 / 0.5 m	27/11/18	S	28	x	x	x	x	x	x					Combo 6A
D1	27/11/18	S	29	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse - As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab**	
DP Order No: 141513	**DP Contact Person: Michael Gawn**	12 Ashley St, Chatswood 2067	
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed in the next few days**										
1025 / 0.2 m	28/11/18	S	1											
1025 / 0.4 m	28/11/18	S	2											
1025 / 1.8 m	28/11/18	S	3											
1028 / 0.4 m	28/11/18	S	4											
1028 / 1.0 m	28/11/18	S	5											
1028 / 1.4 m	28/11/18	S	6											
1029 / 0.2 m	28/11/18	S	7											
1029 / 0.5 m	28/11/18	S	8											
1031 / 0.1 m	28/11/18	S	9											
1032 / 0.3 m	27/11/18	S	10											
1033 / 0.4 m	27/11/18	S	11											
1033 / 0.7 m	27/11/18	S	12											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 206966
Date Received: 30/11/18
Time Received: 11:00
Received By: TN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 30/11/18 11:00

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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T.N

~~205~~ 206966

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No:	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed in the next few days**										
1034 / 0.3 m	27/11/18	S	13											
1034 / 0.8 m	27/11/18	S	14											
1035 / 0.1 m	27/11/18	S	15											
1036 / 0.1 m	27/11/18	S	16											
1036 / 0.5 m	27/11/18	S	17											
1037 / 0.1m	27/11/18	S	18											
1038 / 0.1m	27/11/18	S	19											
1038 / 0.4m	27/11/18	S	20											
1039 / 0.05 m	27/11/18	S	21											
1039 / 0.35 m	27/11/18	S	22											
1040 / 0.2m	27/11/18	S	23											
1040 / 0.5m	27/11/18	S	24											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
Geotechnics | Environment | Groundwater

TN
206966

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No:	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed in the next few days**										
1041 / 0.1 m	27/11/18	S	25											
1041 / 0.4 m	27/11/18	S	26											
1042 / 0.2 m	27/11/18	S	27											
1042 / 0.5 m	27/11/18	S	28											
D1	27/11/18	S	29											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....29.....

Date relinquished:.....29/11/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
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207550

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1001 / 0.1m	04/12/18	S	1	x	x	x	x	x	x					Combo 6A
1002 / 0.3m	04/12/18	S	2	x	x	x	x	x	x					Combo 6A
1002 / 0.7m	04/12/18	S	3	x	x	x	x	x	x					Combo 6A
1003 / 0.4m	04/12/18	S	4	x	x	x	x	x	x					Combo 6A
1004 / 0.2m	04/12/18	S	5	x	x	x	x	x	x					Combo 6A
1004 / 0.7m	04/12/18	S	6	x	x	x	x	x	x					Combo 6A
1004 / 1.2m	04/12/18	S	7	x	x	x	x	x	x					Combo 6A
1006 / 0.2m	04/12/18	S	8	x	x	x	x	x	x					Combo 6A
1006 / 0.5m	04/12/18	S	9	x	x	x	x	x	x					Combo 6A
1007 / 0.1m	04/12/18	S	10	x	x	x	x	x	x					Combo 6A
1008 / 1.0m	04/12/18	S	11	x	x	x	x	x	x					Combo 6A
1008 / 1.5m	04/12/18	S	12	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse - As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1009 / 0.6m	03/12/18	S	13	x	x	x	x	x	x					Combo 6A
1009 / 1.2m	03/12/18	S	14	x	x	x	x	x	x					Combo 6A
1010 / 2.0m	03/12/18	S	15	x	x	x	x	x	x					Combo 6A
1011 / 0.3m	03/12/18	S	16	x	x	x	x	x	x					Combo 6A
1012 / 0.3m	03/12/18	S	17	x	x	x	x	x	x					Combo 6A
1012 / 1.7m	03/12/18	S	18	x	x	x	x	x	x					Combo 6A
1013 / 1.0m	03/12/18	S	19	x	x	x	x	x	x					Combo 6A
1015 / 0.1m	30/11/18	S	20	x	x	x	x	x	x					Combo 6A
1016 / 0.2m	30/11/18	S	21	x	x	x	x	x	x					Combo 6A
1016 / 1.0m	30/11/18	S	22	x	x	x	x	x	x					Combo 6A
1017 / 0.4m	30/11/18	S	23	x	x	x	x	x	x					Combo 6A
1018 / 0.2m	30/11/18	S	24	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse - As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....

Lab Ref: .....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
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.....
Email: michael.gawn@douglaspartners.com.au

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1018 / 0.7m	30/11/18	S	25	x	x	x	x	x	x					Combo 6A
1019 / 0.1m	30/11/18	S	26	x	x	x	x	x	x					Combo 6A
1019 / 0.3m	30/11/18	S	27	x	x	x	x	x	x					Combo 6A
1020 / 0.3m	30/11/18	S	28	x	x	x	x	x	x					Combo 6A
1020 / 1.1m	30/11/18	S	29	x	x	x	x	x	x					Combo 6A
1020 / 3.05m	30/11/18	S	30	x	x	x	x	x	x					Combo 6A
1021 / 0.3m	30/11/18	S	31	x	x	x	x	x	x					Combo 6A
1021 / 1.0m	30/11/18	S	32	x	x	x	x	x	x					Combo 6A
1021 / 2.8m	30/11/18	S	33	x	x	x	x	x	x					Combo 6A
1024 / 0.6m	30/11/18	S	34	x	x	x	x	x	x					Combo 6A
1024 / 1.2m	30/11/18	S	35	x	x	x	x	x	x					Combo 6A
1024 / 1.8m	30/11/18	S	36	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

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Total number of samples in container: ..... 101.....

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Douglas Partners Pty Ltd
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Email: michael.gawn@douglaspartners.com.au

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Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1024 / 2.7m	30/11/18	S	37	x	x	x	x	x	x					Combo 6A
1026 / 0.3m	30/11/18	S	38	x	x	x	x	x	x					Combo 6A
1026 / 0.6m	30/11/18	S	39	x	x	x	x	x	x					Combo 6A
1027 / 0.2m	30/11/18	S	40	x	x	x	x	x	x					Combo 6A
1030 / 0.55m	30/11/18	S	41	x	x	x	x	x	x					Combo 6A
1030 / 1.2m	30/11/18	S	42	x	x	x	x	x	x					Combo 6A
1030 / 1.7m	30/11/18	S	43	x	x	x	x	x	x					Combo 6A
Broken → 1044 / 0.25m	03/12/18	S	–	x	x	x	x	x	x					Combo 6A
on arrival 1046 / 0.1m	03/12/18	S	44	x	x	x	x	x	x					Combo 6A
1047 / 0.3m	03/12/18	S	45	x	x	x	x	x	x					Combo 6A
1047 / 0.7m	03/12/18	S	46	x	x	x	x	x	x					Combo 6A
1048 / 0.2m	03/12/18	S	47	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

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Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
1048 / 0.6m	03/12/18	S	46	x	x	x	x	x	x					Combo 6A
1051 / 0.7m	04/12/18	S	49	x	x	x	x	x	x					Combo 6A
1051 / 1.7m	04/12/18	S	50	x	x	x	x	x	x					Combo 6A
1052 / 1.0m	04/12/18	S	51	x	x	x	x	x	x					Combo 6A
1052 / 1.8m	04/12/18	S	52	x	x	x	x	x	x					Combo 6A
1054 / 0.4m	04/12/18	S	53	x	x	x	x	x	x					Combo 6A
1054 / 1.0m	04/12/18	S	54	x	x	x	x	x	x					Combo 6A
1055 / 0.2m	05/12/18	S	55	x	x	x	x	x	x					Combo 6A
1056 / 0.1m	03/12/18	S	56	x	x	x	x	x	x					Combo 6A
1057 / 0.15m	03/12/18	S	57	x	x	x	x	x	x					Combo 6A
1057 / 0.7m	03/12/18	S	58	x	x	x	x	x	x					Combo 6A
D4	30/11/18	S	59	x	x	x	x	x	x					Combo 6A
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
D6	04/12/18	S	60	x	x	x	x	x	x					Combo 6A
1039F	05/12/18	S	61						x					
S1	05/12/18	S	62						x					
S3	05/12/18	S	63						x					
S4	05/12/18	S	64						x					
S4A	05/12/18	S	65						x					
S6	05/12/18	S	66						x					
S7	05/12/18	S	67						x					
S8	05/12/18	S	68						x					
S9	05/12/18	S	69						x					
S10	05/12/18	S	70						x					
S12	05/12/18	S	71						x					
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
S14	05/12/18	S	72						x					
S14A	05/12/18	S	73						x					
S15	05/12/18	S	74						x					
S15A	05/12/18	S	75						x					
S16	05/12/18	S	76						x					
S17	05/12/18	S	77						x					
S17A	05/12/18	S	78						x					
S18	05/12/18	S	79						x					
S18A	05/12/18	S	80						x					
S19	05/12/18	S	81						x					
S21	05/12/18	S	82						x					
S21A	05/12/18	S	83						x					
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
S22	05/12/18	S	84						x					
NR S23	05/12/18	S	NR						x					
S24	05/12/18	S	85						x					
S25	05/12/18	S	86						x					
S26	05/12/18	S	87						x					
S27	05/12/18	S	88						x					
S28	05/12/18	S	89						x					
S30	05/12/18	S	90						x					
S32	05/12/18	S	91						x					
S33	05/12/18	S	92						x					
S34	05/12/18	S	93						x					
S35	05/12/18	S	94						x					
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	Metals *	BTEX/ TRH	OCs/ OPs	PAHs	PCBs	Asbestos					
S37	05/12/18	S	95						x					
S38	05/12/18	S	96						x					
S39	05/12/18	S	97						x					
S40	05/12/18	S	98						x					
S41	05/12/18	S	99						x					
S30A	5/12		100											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
1001 / 0.1m	04/12/18	S	1											
1002 / 0.3m	04/12/18	S	2											
1002 / 0.7m	04/12/18	S	3											
1003 / 0.4m	04/12/18	S	4											
1004 / 0.2m	04/12/18	S	5											
1004 / 0.7m	04/12/18	S	6											
1004 / 1.2m	04/12/18	S	7											
1006 / 0.2m	04/12/18	S	8											
1006 / 0.5m	04/12/18	S	9											
1007 / 0.1m	04/12/18	S	10											
1008 / 1.0m	04/12/18	S	11											
1008 / 1.5m	04/12/18	S	12											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 207550
Date Received: 7/12/18
Time Received: 1045
Received By: SE
Temp: Cool/Ambient
Cooling: Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

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SAMPLES RECEIVED BY LAB
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Signature: .....SE.....

Date: .....7/12/18.....

Lab Ref: .....207550.....

Send results to:
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Email: michael.gawn@douglaspartners.com.au

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
1009 / 0.6m	03/12/18	S	13											
1009 / 1.2m	03/12/18	S	14											
1010 / 2.0m	03/12/18	S	15											
1011 / 0.3m	03/12/18	S	16											
1012 / 0.3m	03/12/18	S	17											
1012 / 1.7m	03/12/18	S	18											
1013 / 1.0m	03/12/18	S	19											
1015 / 0.1m	30/11/18	S	20											
1016 / 0.2m	30/11/18	S	21											
1016 / 1.0m	30/11/18	S	22											
1017 / 0.4m	30/11/18	S	23											
1018 / 0.2m	30/11/18	S	24											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

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Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
1018 / 0.7m	30/11/18	S	25											
1019 / 0.1m	30/11/18	S	26											
1019 / 0.3m	30/11/18	S	27											
1020 / 0.3m	30/11/18	S	28											
1020 / 1.1m	30/11/18	S	29											
1020 / 3.05m	30/11/18	S	30											
1021 / 0.3m	30/11/18	S	31											
1021 / 1.0m	30/11/18	S	32											
1021 / 2.8m	30/11/18	S	33											
1024 / 0.6m	30/11/18	S	34											
1024 / 1.2m	30/11/18	S	35											
1024 / 1.8m	30/11/18	S	36											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 7/12/18

Lab Ref: 207550

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
1024 / 2.7m	30/11/18	S	37											
1026 / 0.3m	30/11/18	S	38											
1026 / 0.6m	30/11/18	S	39											
1027 / 0.2m	30/11/18	S	40											
1030 / 0.55m	30/11/18	S	41											
1030 / 1.2m	30/11/18	S	42											
1030 / 1.7m	30/11/18	S	43											
1044 / 0.25m	03/12/18	S	–											
1046 / 0.1m	03/12/18	S	44											
1047 / 0.3m	03/12/18	S	45											
1047 / 0.7m	03/12/18	S	46											
1048 / 0.2m	03/12/18	S	47											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

Taken upon receipt Wed

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....7/12/18.....

Lab Ref: .....207550.....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab** 12 Ashley St, Chatswood 2067	
DP Order No: 141513	**DP Contact Person: Michael Gawn**		
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes											Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**											
1048 / 0.6m	03/12/18	S	48												
1051 / 0.7m	04/12/18	S	49												
1051 / 1.7m	04/12/18	S	50												-
1052 / 1.0m	04/12/18	S	51												
1052 / 1.8m	04/12/18	S	52												
1054 / 0.4m	04/12/18	S	53												
1054 / 1.0m	04/12/18	S	54												
1055 / 0.2m	05/12/18	S	55												
1056 / 0.1m	03/12/18	S	56												
1057 / 0.15m	03/12/18	S	57												
1057 / 0.7m	03/12/18	S	58												
D4	30/11/18	S	59												
PQL (S) mg/kg															
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐														

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 7/12/18

Lab Ref: 207560

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab**	
DP Order No: 141513	**DP Contact Person: Michael Gawn**	12 Ashley St, Chatswood 2067	
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
D6	04/12/18	S	60											
1039F	05/12/18	S	61											
S1	05/12/18	S	62											
S3	05/12/18	S	63											
S4	05/12/18	S	64											
S4A	05/12/18	S	65											
S6	05/12/18	S	66											
S7	05/12/18	S	67											
S8	05/12/18	S	68											
S9	05/12/18	S	69											
S10	05/12/18	S	70											
S12	05/12/18	S	71											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: .....7/12/18.....

Lab Ref: .....207550.....

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab**	
DP Order No: 141513	**DP Contact Person: Michael Gawn**	12 Ashley St, Chatswood 2067	
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes											Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**											
S14	05/12/18	S	72												
S14A	05/12/18	S	73												
S15	05/12/18	S	74												
S15A	05/12/18	S	75												
S16	05/12/18	S	76												
S17	05/12/18	S	77												
S17A	05/12/18	S	78												
S18	05/12/18	S	79												
S18A	05/12/18	S	80												
S19	05/12/18	S	81												
S21	05/12/18	S	82												
S21A	05/12/18	S	83												
PQL (S) mg/kg															
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐														

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 7/12/18

Lab Ref: 207550

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
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Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab**
DP Order No: 141513	**DP Contact Person: Michael Gawn**	12 Ashley St, Chatswood 2067
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200** **Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample				Analytes										Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**										
S22	05/12/18	S	84											
NR (Ken) S23	05/12/18	S	NR											
S24	05/12/18	S	85											
S25	05/12/18	S	86											
S26	05/12/18	S	87											
S27	05/12/18	S	88											
S28	05/12/18	S	89											
S30	05/12/18	S	90											
S32	05/12/18	S	91											
S33	05/12/18	S	92											
S34	05/12/18	S	93											
S35	05/12/18	S	94											
PQL (S) mg/kg														
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: ..... 101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....[signature]

Date: 7/12/18

Lab Ref: 207550

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91402.03	**Suburb/Town: Catherine Hill Bay**	**To: Envirolab**	
DP Order No: 141513	**DP Contact Person: Michael Gawn**	12 Ashley St, Chatswood 2067	
Prior Storage: Esky ☒ Fridge ☒ Shelved ☐		**Ph: 9910-6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☒ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes											Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	**Testing to be confirmed tomorrow**											
S37	05/12/18	S	95												
S38	05/12/18	S	96												
S39	05/12/18	S	97												
S40	05/12/18	S	98												
S41	05/12/18	S	99												
PQL (S) mg/kg															
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐														

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe

Total number of samples in container: .....101.....

Date relinquished:.....06/12/18..... By: ...MJP.....

Results required by:.....Standard TAT.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours x Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 7/12/18

Lab Ref: 207550 10:45

Send results to:
Douglas Partners Pty Ltd
Address: .....
.....
.....
.....
Email: michael.gawn@douglaspartners.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Michael Gawn

Sample Login Details

Your reference	91402.03, Catherine Hill Bay
Envirolab Reference	206966
Date Sample Received	30/11/2018
Date Instructions Received	30/11/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	29 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	13.2
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Misc Inorg - Soil	Asbestos ID - soils	On Hold
1025/0.2m											✓
1025/0.4m											✓
1025/1.8m											✓
1028/0.4m											✓
1028/1.0m											✓
1028/1.4m											✓
1029/0.2m											✓
1029/0.5m											✓
1031/0.1m											✓
1032/0.3m											✓
1033/0.4m											✓
1033/0.7m											✓
1034/0.3m											✓
1034/0.8m											✓
1035/0.1m											✓
1036/0.1m											✓
1036/0.5m											✓
1037/0.1m											✓
1038/0.1m											✓
1038/0.4m											✓
1039/0.05m											✓
1039/0.35m											✓
1040/0.2m											✓
1040/0.5m											✓
1041/0.1m											✓
1041/0.4m											✓
1042/0.2m											✓
1042/0.5m											✓
D1											✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Michael Gawn

Sample Login Details

Your reference	91402.03, Catherine Hill Bay
Envirolab Reference	207550
Date Sample Received	30/11/2018
Date Instructions Received	07/12/2018
Date Results Expected to be Reported	14/12/2018

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	94 Soil, 6 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	7.0
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Sample 1044/0.25m was recieved broken and was unrecoverable.
Sample S23 was not recieved.
There were 2 bags labeled S30 which were different soils to each other. One has been labeled S30A and was added as an extra sample.

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Asbestos ID - materials
1001 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1002 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1002 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1003 / 0.4m	✓	✓	✓	✓	✓	✓	✓	✓	
1004 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1004 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1004 / 1.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1006 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1006 / 0.5m	✓	✓	✓	✓	✓	✓	✓	✓	
1007 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1008 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1008 / 1.5m	✓	✓	✓	✓	✓	✓	✓	✓	
1009 / 0.6m	✓	✓	✓	✓	✓	✓	✓	✓	
1009 / 1.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1010 / 2.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1011 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1012 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1012 / 1.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1013 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1015 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1016 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1016 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1017 / 0.4m	✓	✓	✓	✓	✓	✓	✓	✓	
1018 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1018 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1019 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1019 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1020 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1020 / 1.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1020 / 3.05m	✓	✓	✓	✓	✓	✓	✓	✓	
1021 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1021 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	

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www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Asbestos ID - materials
1021 / 2.8m	✓	✓	✓	✓	✓	✓	✓	✓	
1024 / 0.6m	✓	✓	✓	✓	✓	✓	✓	✓	
1024 / 1.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1024 / 1.8m	✓	✓	✓	✓	✓	✓	✓	✓	
1024 / 2.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1026 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1026 / 0.6m	✓	✓	✓	✓	✓	✓	✓	✓	
1027 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1030 / 0.55m	✓	✓	✓	✓	✓	✓	✓	✓	
1030 / 1.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1030 / 1.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1046 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1047 / 0.3m	✓	✓	✓	✓	✓	✓	✓	✓	
1047 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1048 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1048 / 0.6m	✓	✓	✓	✓	✓	✓	✓	✓	
1051 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1051 / 1.7m	✓	✓	✓	✓	✓	✓	✓	✓	
1052 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1052 / 1.8m	✓	✓	✓	✓	✓	✓	✓	✓	
1054 / 0.4m	✓	✓	✓	✓	✓	✓	✓	✓	
1054 / 1.0m	✓	✓	✓	✓	✓	✓	✓	✓	
1055 / 0.2m	✓	✓	✓	✓	✓	✓	✓	✓	
1056 / 0.1m	✓	✓	✓	✓	✓	✓	✓	✓	
1057 / 0.15m	✓	✓	✓	✓	✓	✓	✓	✓	
1057 / 0.7m	✓	✓	✓	✓	✓	✓	✓	✓	
D4	✓	✓	✓	✓	✓	✓	✓	✓	
D6	✓	✓	✓	✓	✓	✓	✓	✓	
1039F									✓
S1								✓	
S3								✓	
S4									✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Asbestos ID - materials
S4A								✓	
S6								✓	
S7								✓	
S8								✓	
S9								✓	
S10								✓	
S12								✓	
S14									✓
S14A								✓	
S15								✓	
S15A								✓	
S16								✓	
S17									✓
S17A								✓	
S18									✓
S18A								✓	
S19								✓	
S21									✓
S21A								✓	
S22								✓	
S24								✓	
S25								✓	
S26								✓	
S27								✓	
S28								✓	
S30								✓	
S32								✓	
S33								✓	
S34								✓	
S35								✓	
S37								✓	
S38								✓	

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www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Asbestos ID - materials
S39								✓	
S40								✓	
S41								✓	
S30A								✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Appendix F

Title Search Information

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

LRS NSW **Sydney**

Address: - Colliery Drive, Catherine Hill Bay

Description: - Lots 1 & 2 D.P. 1180181

As regards Lot 1 D.P. 1180181

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
23.05.1896 (1896 to 1957)	The Wallarah Coal Company Limited	Vol 1192 Fol 63 Now Vol 6696 Fol 113
24.01.1957 (1957 to 2009)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited	Vol 6696 Fol 113 Now 223/1102989
04.03.2009 (2009 to 2017)	Catherine Hill Bay Land Pty Ltd	223/1102989 Now 1/1180181
31.07.2017 (2017 to date)	# Wallalong Land Developments Pty Limited	1/1180181

Denotes current registered proprietor

Leases: -

- 25.09.1934 to The Council of the Shire of Lake Macquarie, of part of the land in Volume 4376 Folio 28 (? Affecting)

Easements: - NIL

As regards Lot 2 D.P. 1180181

As regards the parts numbered (1) on the attached Cadastral Records Enquiry Report

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
23.05.1896 (1896 to 1957)	The Wallarah Coal Company Limited	Vol 1192 Fol 63 Now Vol 6696 Fol 113
24.01.1957 (1957 to 2009)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited	Vol 6696 Fol 113 Now 223/1102989
04.03.2009 (2009 to 2017)	Catherine Hill Bay Land Pty Ltd	223/1102989 Now 1/1180181

Leases: -

- 25.09.1934 to The Council of the Shire of Lake Macquarie, of part of the land in Volume 4376 Folio 28 (? Affecting)

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

As regards the parts numbered (2) on the attached Cadastral Records Enquiry Report

Date of Acquisition and term held	**Registered Proprietor(s) & Occupations where available**	**Reference to Title at Acquisition and sale**
29.02.1912 (1912 to 1957)	The Wallarah Coal Company Limited	Vol 190 Fol 39
19.08.1957 (1957 to 2017)	J. & A. Brown & Abermain Seaham Collieries Limited Now Coal & Allied Operations Pty Limited	Vol 190 Fol 39 Now 2/1180181

Continued as regards the whole of Lot 2 D.P. 1180181

Date of Acquisition and term held	**Registered Proprietor(s) & Occupations where available**	**Reference to Title at Acquisition and sale**
01.08.2017 (2017 to date)	# Wallalong Land Developments Pty Limited	2/1180181

Denotes current registered proprietor

Leases, continued: - NIL

Easements: -

- 24.04.2013 (D.P. 1180181) Easement for Electricity and other purposes 15 wide and variable

---

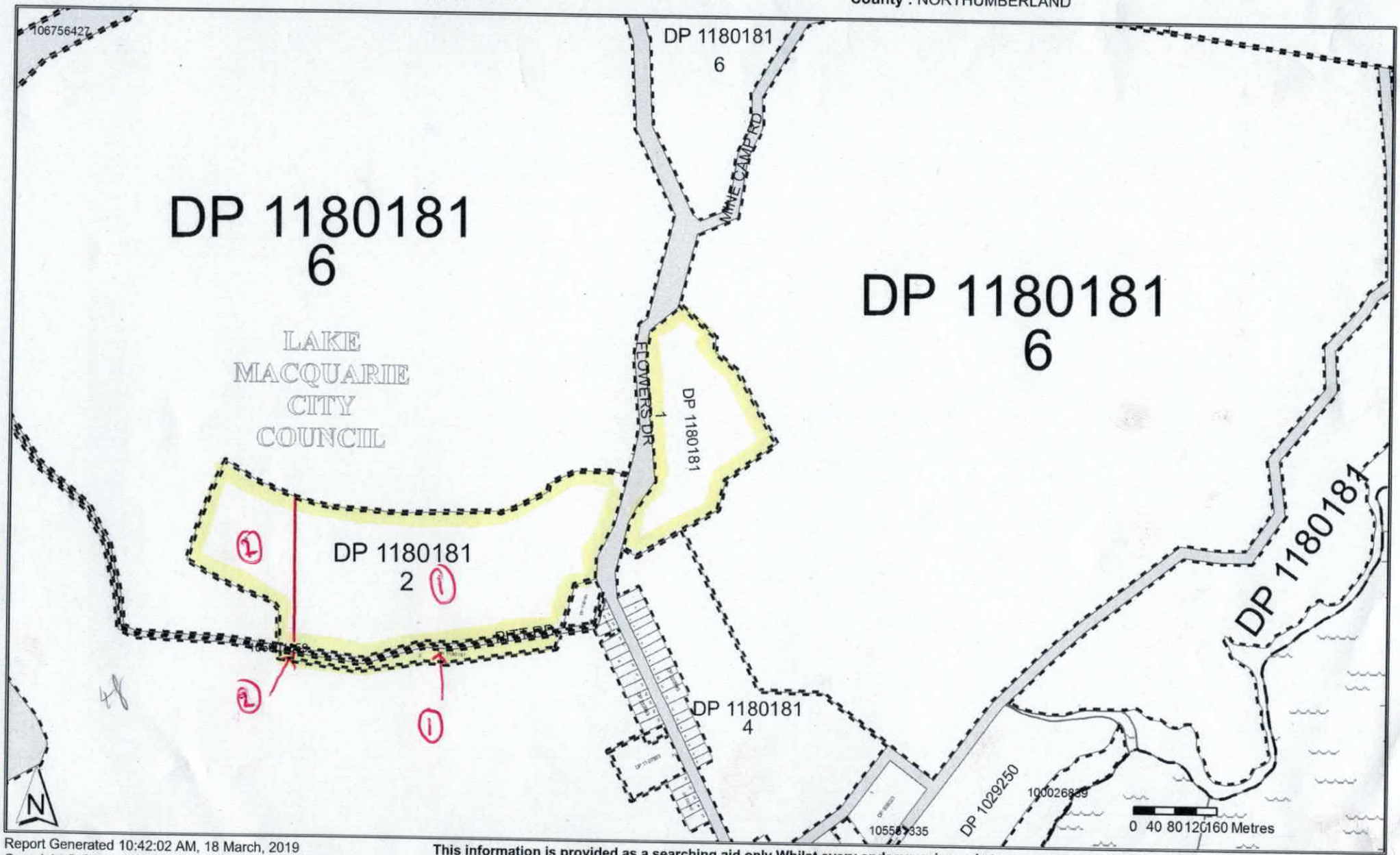
Yours Sincerely,
Mark Groll
19 March 2019

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 1 DP 1180181

Locality : CATHERINE HILL BAY
LGA : LAKE MACQUARIE
Parish : WALLARAH
County : NORTHUMBERLAND

Ref : CMapIT



Report Generated 10:42:02 AM, 18 March, 2019
Copyright © Crown in right of New South Wales, 2017

This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

InfoTrack Your Searching Partner.

Advanced Search
Address (0)
Lot
Suburb (1)
POI
Survey Mark
Suburb
CATHERINE HILL BAY
Search
Reset
Suburb
CATHERINE HILL BAY
Tool
oading results...
Lot
lot
section
plan
1
Null
DP1180181

Click to add a point
Tool
ading results...
Lot
lot
section
plan
2
Null
DP1180181

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan

Sheet 5 of 9 sheets

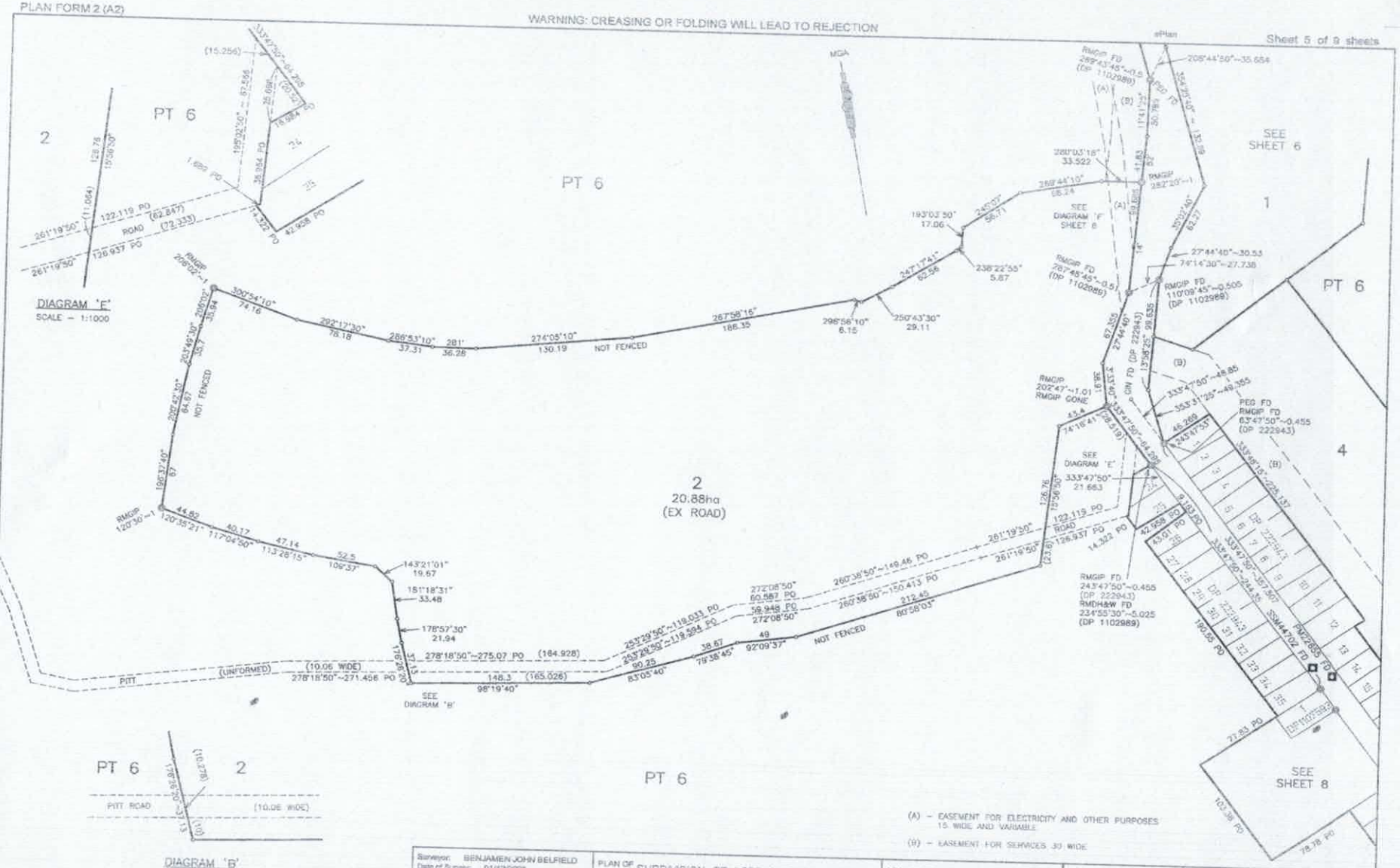


DIAGRAM 'F'
SCALE – 1:1000

DIAGRAM 'B'
SCALE – 1:1000

Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 07181DPB – (11/04/2013) Survey Report 2008(m7100(1014) Additional Sheets 2012(m7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/17/2012 Lengths are in metres. Reduction Ratio 1: 2000	Registered 24.4.2013	DP1180181

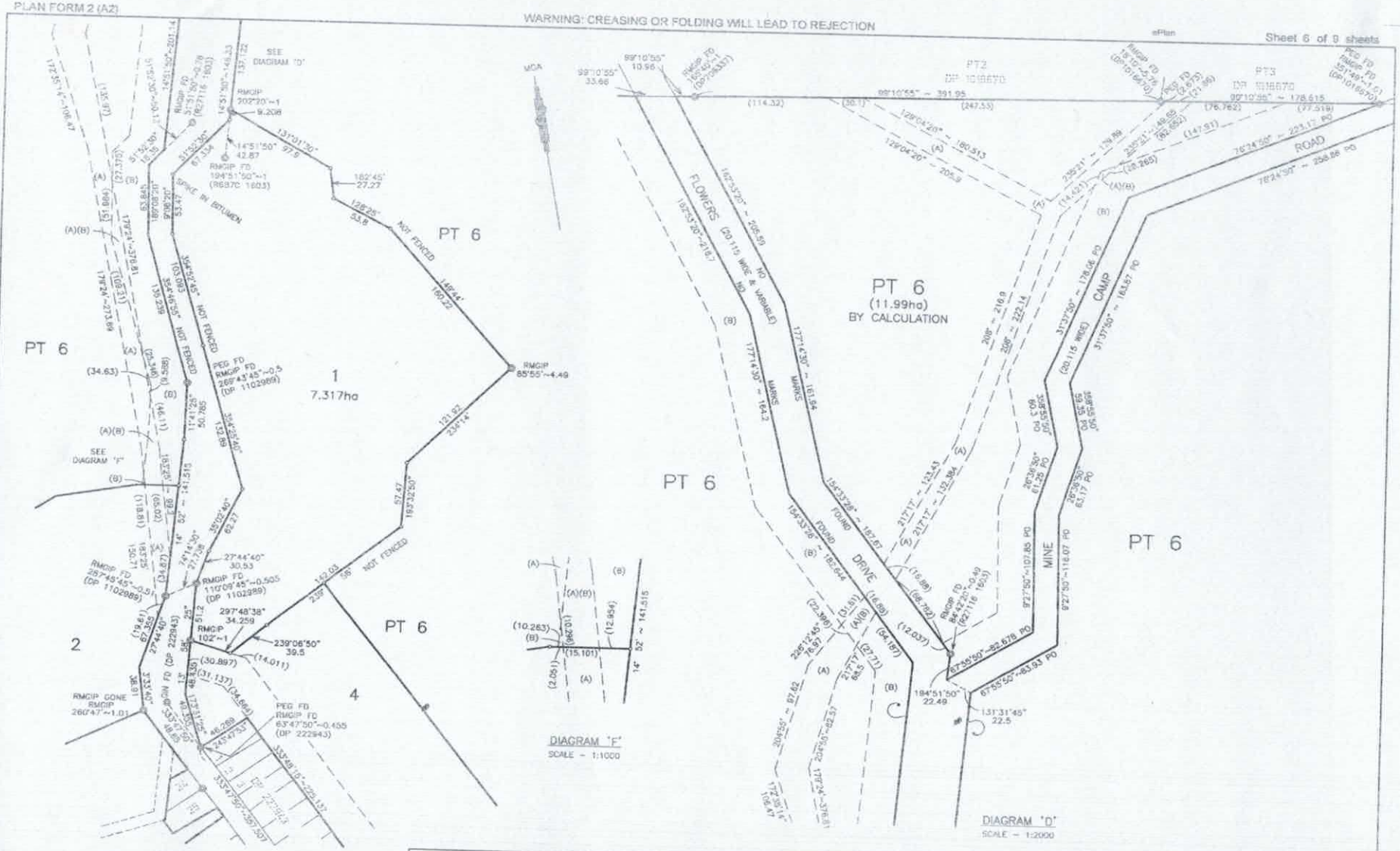
Req:R118927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:5 of 12
Ref:catherine hill bay /Src:M

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan

Sheet 6 of 9 sheets



(A) – EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 15 WIDE AND VARIABLE

(B) – EASEMENT FOR SERVICES 30 WIDE

Surveyor: BENJAMEN JOHN WELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 07181DPB – (11/04/2013) Survey Report 2008dx7100(1914) Additional Sheets 2012dx7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 2000	Registered 24.4.2013	DP1180181

Req:R118927 /Doc:DP 1180181 B /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:6 of 12
Ref:catherine hill bay /Src:M

InfoTrack

Req:R118927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:1 of 12
Ref:catherine hill bay /Src:M

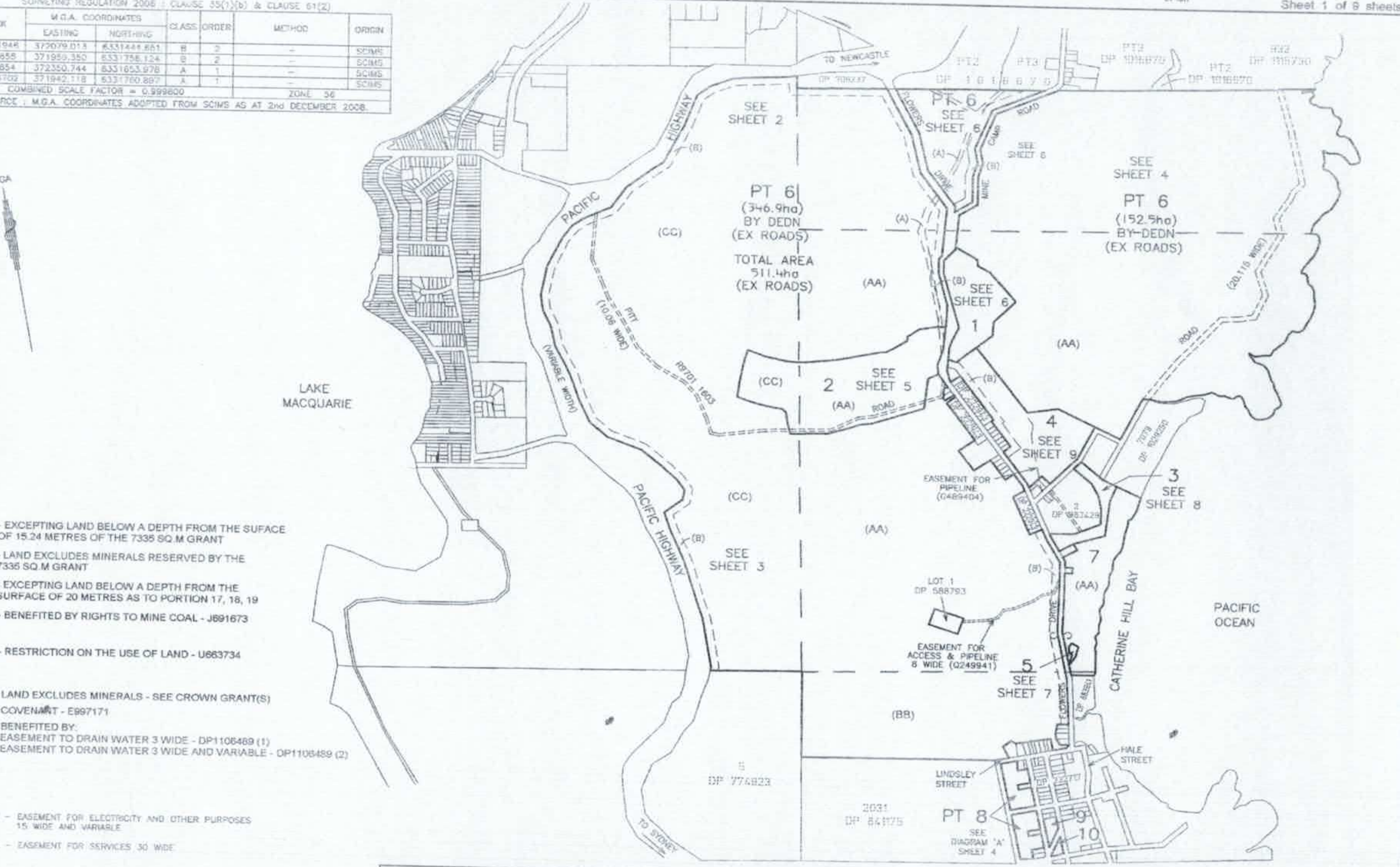
PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan

SURVEYING REGULATION 2006 : CLAUSE 35(1)(b) & CLAUSE 61(2)

MARK	M.G.A. COORDINATES		CLASS	ORDER	METHOD	ORIGIN
	EASTING	NORTHING				
SSM 81946	372079.013	6331441.661	B	2	–	SCIMS
PM 22655	371959.350	6331756.124	B	2	–	SCIMS
PM 22654	372350.744	6331653.978	A	1	–	SCIMS
SSM 44702	371942.118	6331760.897	A	1	–	SCIMS
COMBINED SCALE FACTOR = 0.999800					ZONE 56	
SOURCE : M.G.A. COORDINATES ADOPTED FROM SCIMS AS AT 2nd DECEMBER 2008.						



(AA) - EXCEPTING LAND BELOW A DEPTH FROM THE SUFACE OF 15.24 METRES OF THE 7335 SQ.M GRANT
- LAND EXCLUDES MINERALS RESERVED BY THE 7335 SQ.M GRANT
- EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 20 METRES AS TO PORTION 17, 18, 19
- BENEFITED BY RIGHTS TO MINE COAL - J891673

(BB) - RESTRICTION ON THE USE OF LAND - U663734

(CC) - LAND EXCLUDES MINERALS - SEE CROWN GRANT(S)
- COVENANT - E997171
- BENEFITED BY:
EASEMENT TO DRAIN WATER 3 WIDE - DP1106489 (1)
EASEMENT TO DRAIN WATER 3 WIDE AND VARIABLE - DP1106489 (2)

(A) - EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 15 WIDE AND VARIABLE

(B) - EASEMENT FOR SERVICES 30 WIDE

Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 07181DPB - (11/04/2013) Survey Report 2008m7100(1014) Additional Sheets 2012m7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 10000	Registered 24.4.2013	DP1180181

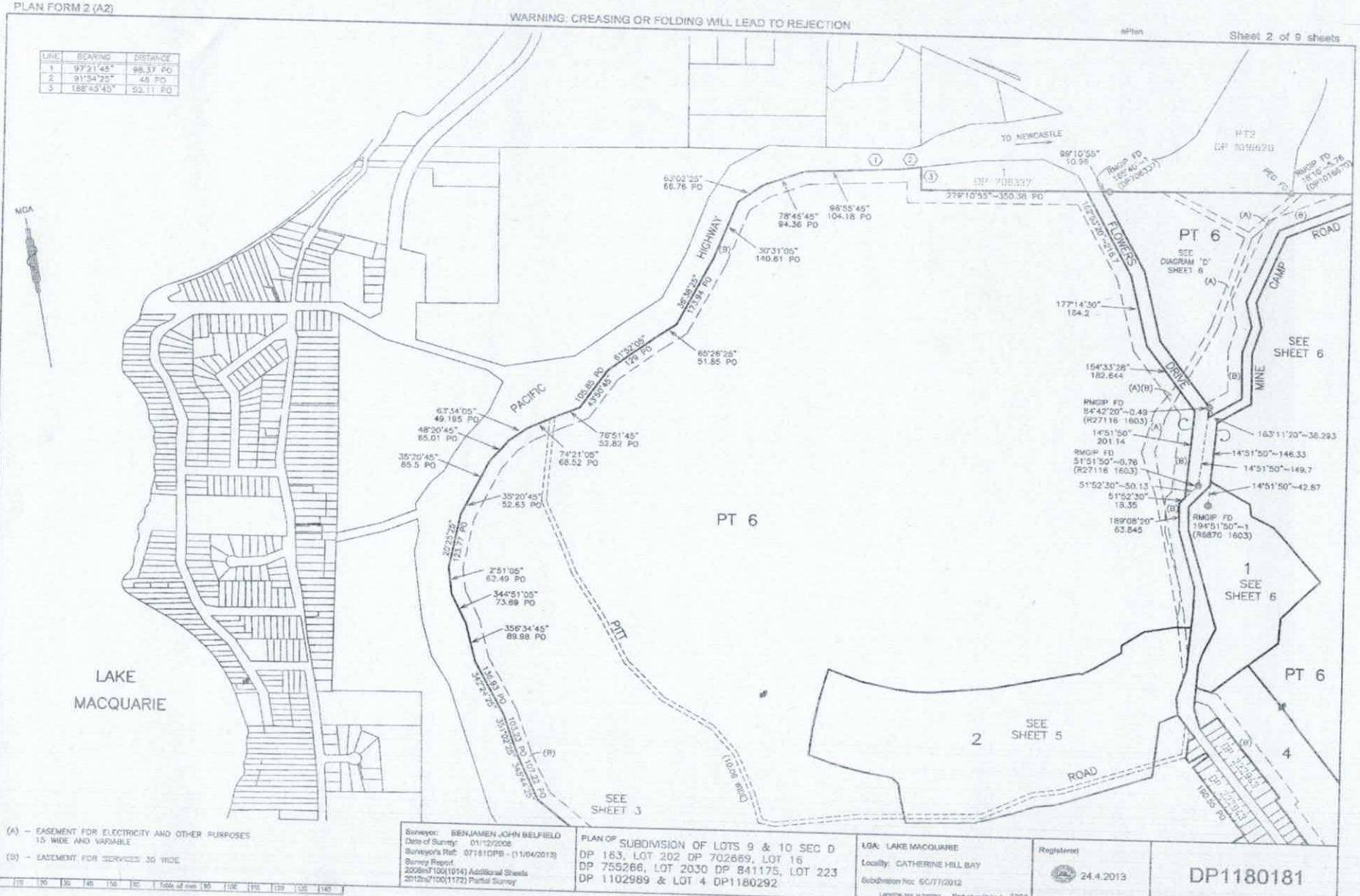
PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan

Req:R11827 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:2 of 12
Ref:catherine hill bay /Src:M

LINE	BEARING	DISTANCE
1	97°21'45"	98.37 PO
2	91°54'25"	45 PO
3	188°45'45"	52.11 PO



(A) – EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 15 WIDE AND VARIABLE

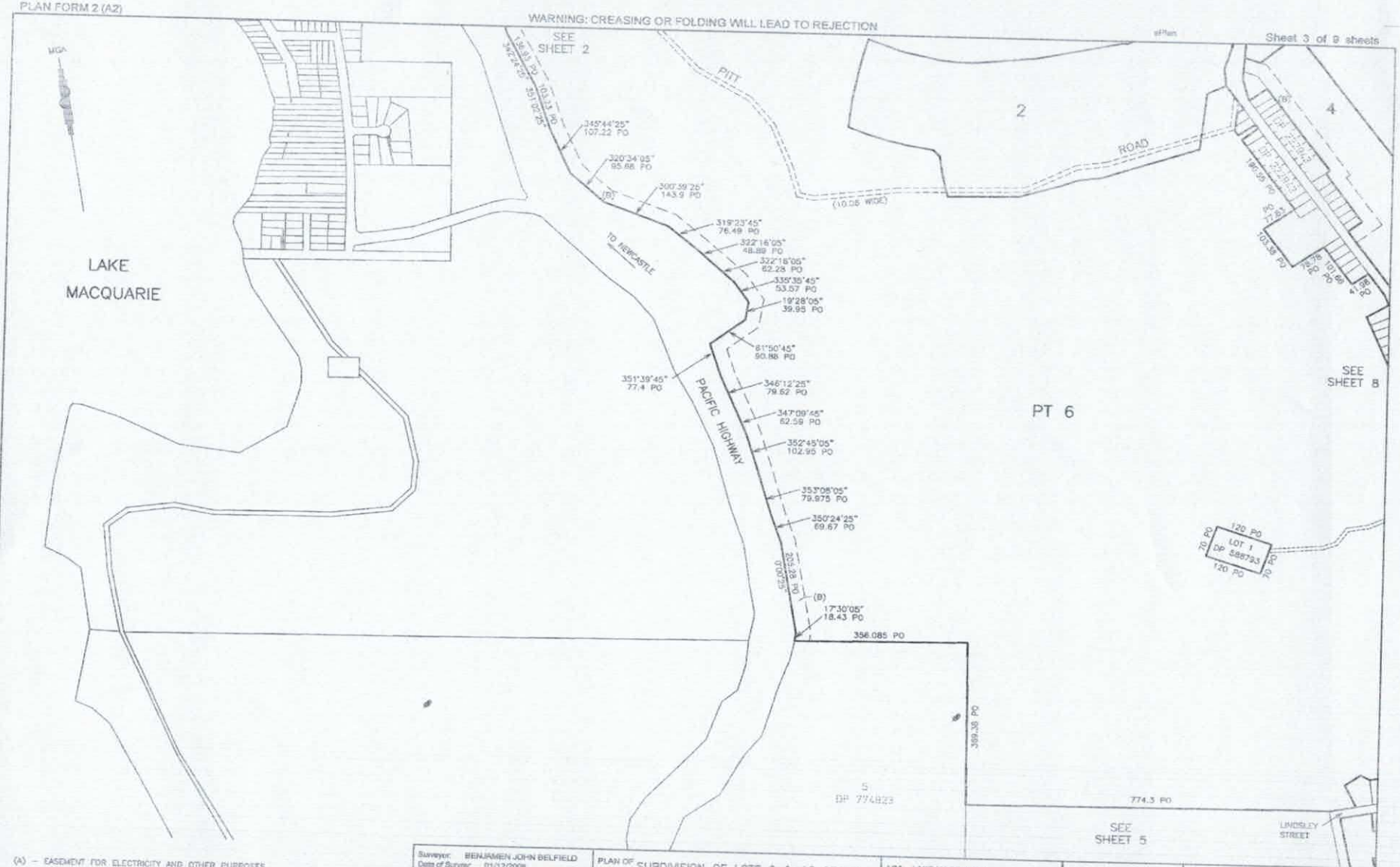
(B) – EASEMENT FOR SERVICES 30 WIDE

Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 071810PB - (11/04/2013) Survey Report 2008m7100(1014) Additional Sheets 2012m7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 3000	Registered 24.4.2013	DP1180181

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet 3 of 9 sheets



(A) – EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 10 WIDE AND VARIABLE

(B) – EASEMENT FOR SERVICES 30 WIDE

Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 07181DPB - (11/04/2013) Survey Report 2008m7100(1014) Additional Sheets 2012m7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision Ref: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 5000	Registered 24.4.2013	DP1180181

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Ref:catherine hill bay /Src:M

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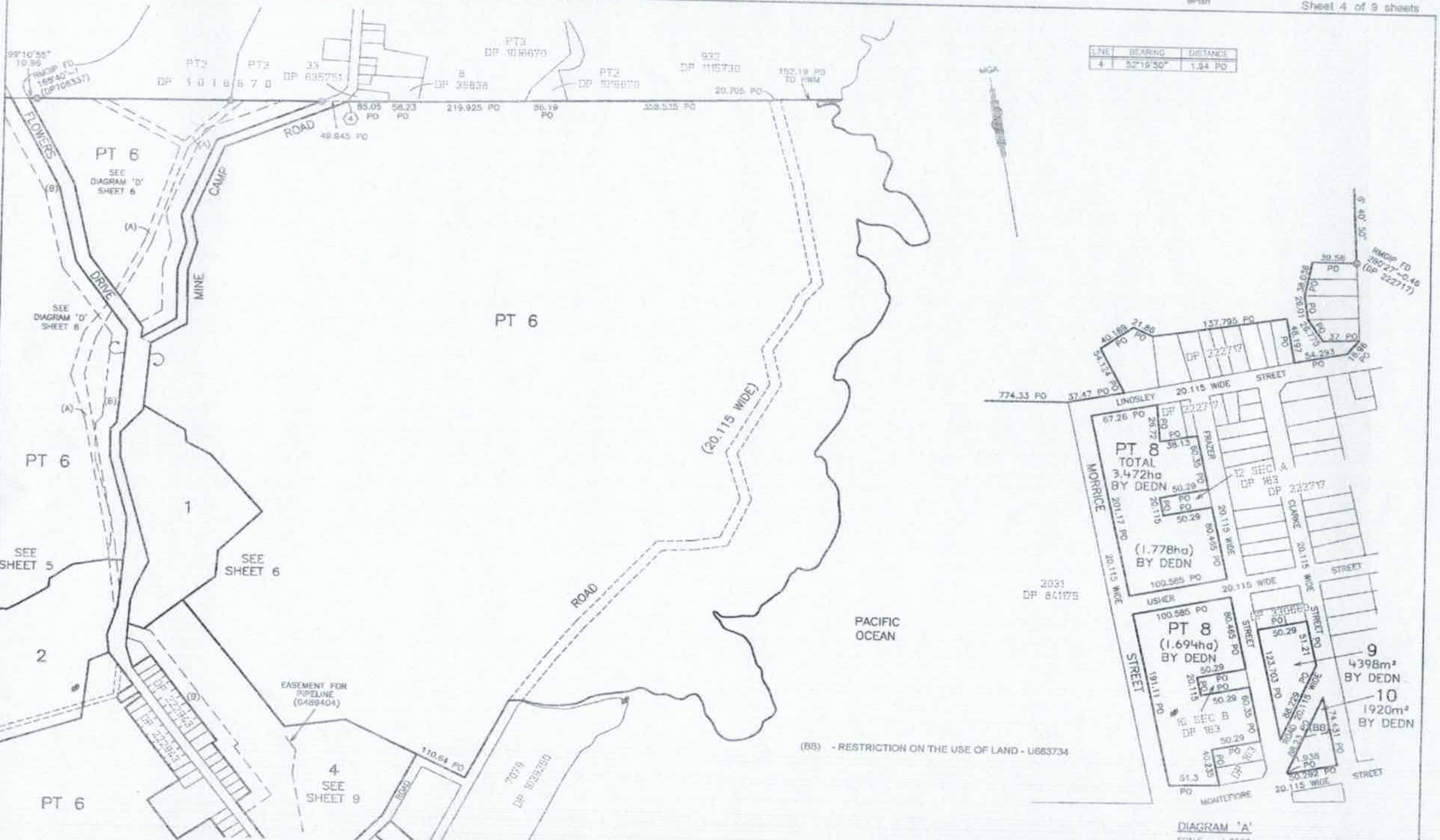
Ref:catherine hill bay /Src:M

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ePlan



(A) – EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 15 WIDE AND VARIABLE

(B) – EASEMENT FOR SERVICES 30 WIDE

Surveyor: BENJAMEN JOHN BELFIELD
Date of Survey: 01/12/2008
Surveyor's Ref: 07181DPB - (11/04/2013)
Survey Report
2008m7100(1014) Additional Sheets
2012m7100(1172) Partial Survey

PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292

LGA: LAKE MACQUARIE
Locality: CATHERINE HILL BAY
Subdivision No: SC/770/2012
Lengths are in metres. Reduction Ratio 1: 5000

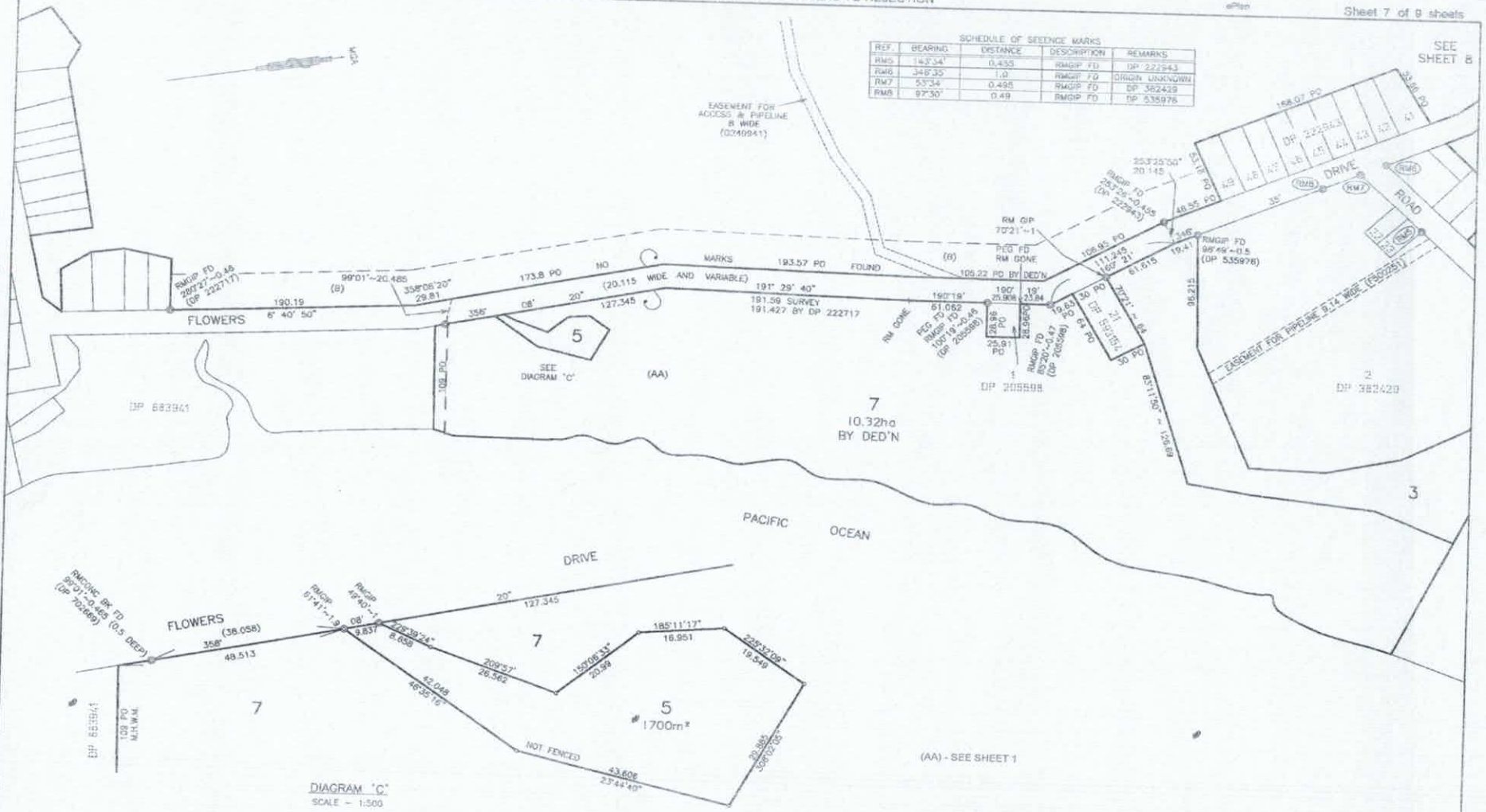
Registered 24.4.2013

DP1180181

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet 7 of 9 sheets



Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 1/11/2008 Surveyor's Ref: 07181DP8 - (11/04/2013) Survey Report: 2008/a7100(1014) Additional Sheets 2012/a7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 2000	Registered: 24 4 2013	DP1180181

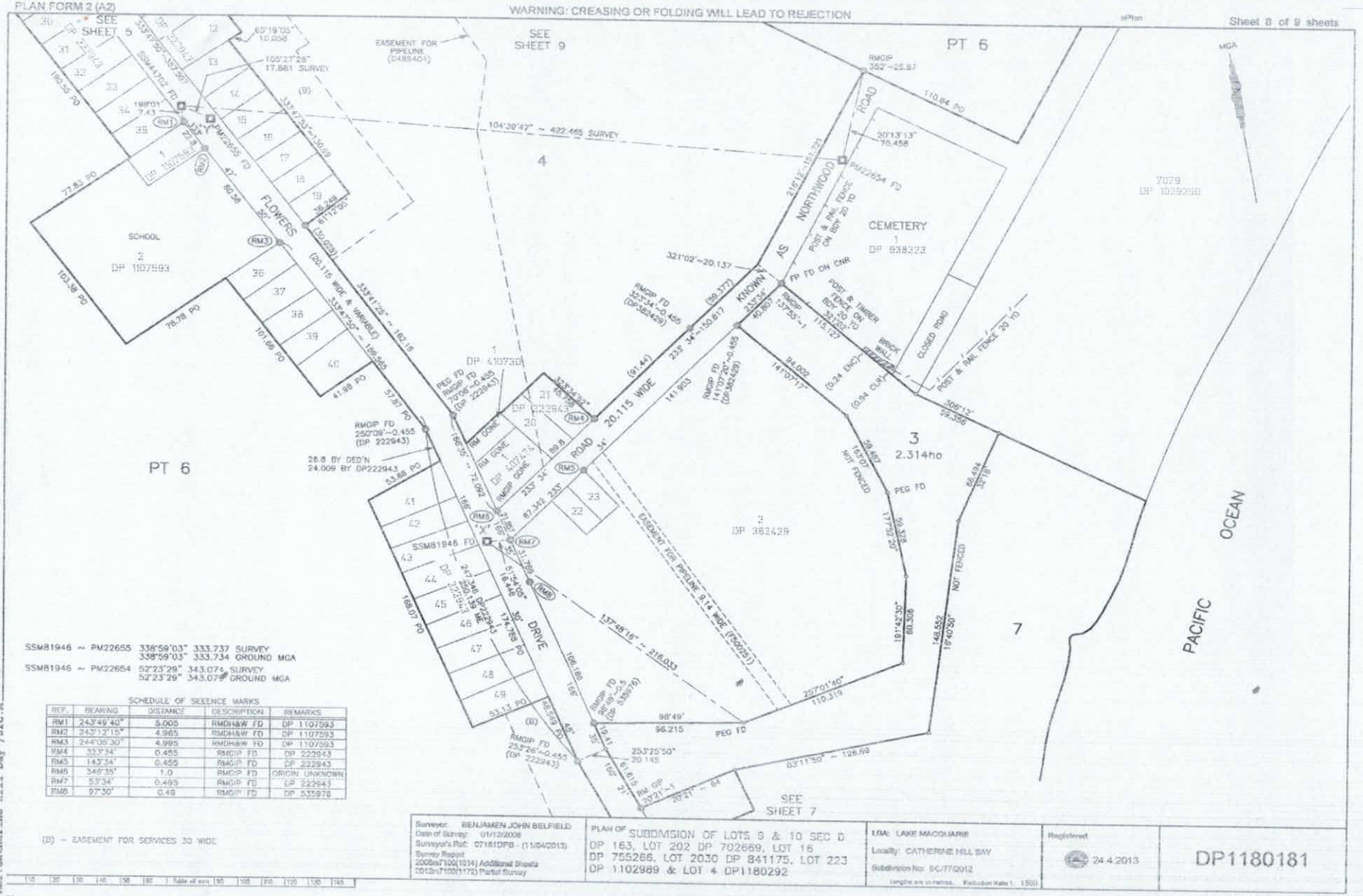
Req:R118927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:7 of 12
Ref:catherine hill bay /Src:M

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

sPlan

Sheet 8 of 9 sheets



SCHEDULE OF SEEENCE MARKS

REF.	BEARING	DISTANCE	DESCRIPTION	REMARKS
RM1	243°49'40"	5.005	RMDH&W FD	DP 1107593
RM2	243°12'15"	4.965	RMDH&W FD	DP 1107593
RM3	244°06'30"	4.995	RMDH&W FD	DP 1107593
RM4	323°34'	0.455	RMCIP FD	DP 222943
RM5	143°34'	0.455	RMCIP FD	DP 222943
RM6	346°35'	1.0	RMCIP FD	ORIGIN UNKNOWN
RM7	53°34'	0.495	RMCIP FD	DP 222943
RM8	97°30'	0.49	RMCIP FD	DP 535978

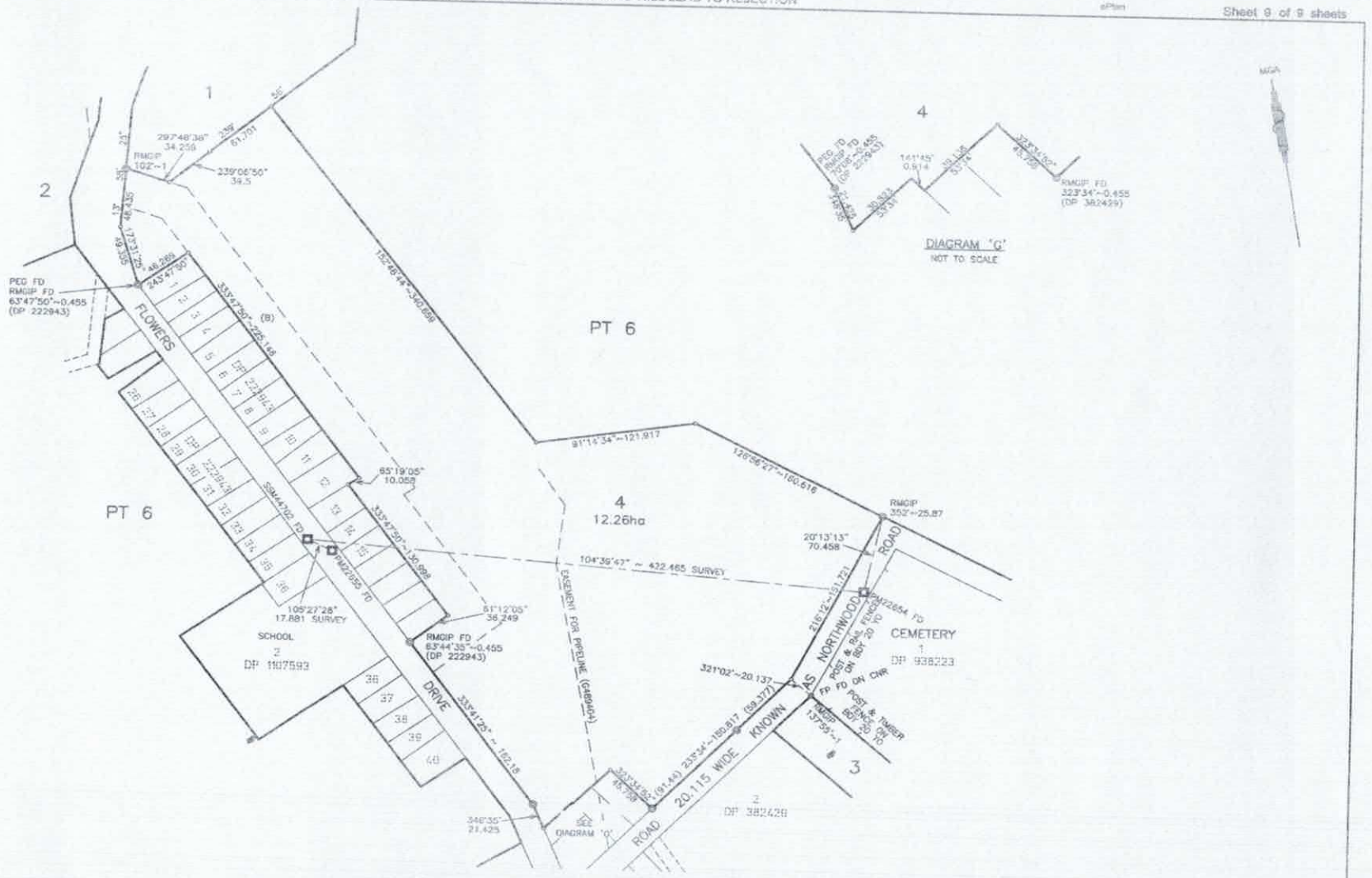
Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2006 Surveyor's Ref: 07181DPB - (11/04/2013) Survey Report 2008m7100(1014) Additional Sheets 2012p7100(1172) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702669, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision No: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 1500	Registered 24.4.2013	DP1180181

Req:R116927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:8 of 12
Ref:catherine hill bay /Src:M

PLAN FORM 2 (A2)

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Sheet 9 of 9 sheets



Surveyor: BENJAMEN JOHN BELFIELD Date of Survey: 01/12/2008 Surveyor's Ref: 07181DP9 - (11/04/2013) Survey Report 2008/m7100(1314) Additional Sheets 2010/m7100(1170) Partial Survey	PLAN OF SUBDIVISION OF LOTS 9 & 10 SEC D DP 163, LOT 202 DP 702569, LOT 16 DP 755266, LOT 2030 DP 841175, LOT 223 DP 1102989 & LOT 4 DP1180292	LGA: LAKE MACQUARIE Locality: CATHERINE HILL BAY Subdivision Ref: SC/77/2012 Lengths are in metres. Reduction Ratio 1: 2000	Registered 24.4.2013	DP1180181

Req:R18927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:9 of 12
Ref:catherine hill bay /Src:M

Req:R118927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:10 of 12
Ref:catherine hill bay /Src:M

PLAN FORM 6 WARNING: Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 3 sheet(s)

SIGNATURES, SEALS and STATEMENTS of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

Pursuant to Section 88B of the Conveyancing Act 1919 it is intended to create:

1. Easement for electricity and other purposes 15 wide and variable.
2. Easement for services 30 wide.

* DP1180181

Registered: 24.4.2013 *

Title System: TORRENS

Purpose: SUBDIVISION

PLAN OF SUBDIVISION OF Lots 9 & 10 Sec D DP 163, Lot 202 DP 702669, Lot 16 DP 755266, Lot 2030 DP 841175, Lot 223 DP 1102989 and Lot 4 DP 1180292

LGA: LAKE MACQUARIE

Locality: CATHERINE HILL BAY

Parish: WALLARAH

County: NORTHUMBERLAND

* OFFICE USE ONLY

Use PLAN FORM 6A
for additional certificates, signatures, seals and statements

Crown Lands NSW/Western Lands Office Approval

I.....in approving this plan certify
(Authorised Officer)
that all necessary approvals in regard to the allocation of the land shown herein have been given

Signature:.....
Date:.....
File Number:.....
Office:.....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to:

the proposed SUBDIVISION set out herein
(insert 'subdivision' or 'new road')

.....
* Authorised Person/~~General Manager~~/~~Accredited Certifier~~

Consent Authority: LAKE MACQUARIE CITY COUNCIL
Date of Endorsement: 15 FEBRUARY 2013
Accreditation no:
Subdivision Certificate no: SC/77/2012
File no: MISC/78/2010

* Delete whichever is inapplicable.

Surveying Regulation, 2006

I, BENJAMEN JOHN BELFIELD of MONTEATH & POWYS PTY LTD a surveyor registered under the *Surveying Act, 2002*, certify that the survey represented in this plan is accurate, has been made in accordance with the *Surveying Regulation, 2006* and was completed on 27 FEBRUARY 2009.

The survey relates to Lots 1 to 5, Lots 6, 7, 8, 9 & 10 complied.
(specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)

Signature ..... *Dated:* 27/02/09
Surveyor registered under the Surveying Act, 2002

Datum Line: 'X' – 'Y'
Type: ~~Urban~~/Rural

Plans used in the preparation of survey/~~compilation~~

DP 163	DP 588793	DP 841175
DP 205598	DP 593154	DP 854197
DP 222717	DP 702669	DP 938223
DP 222943	DP 706337	DP 1016670
DP 382429	DP 729035	DP 1102989
DP 407474	DP 736170	DP 1107593
DP 410730	DP 736171	R 6870 1603
DP 440549	DP 746077	R 27116 1603
DP 535976	DP 755266	R 11799 1603

SURVEYOR'S REFERENCE: 07/181 2008 M 7100 (1014) Additional Sheets 2012 M 7100 (1172) Partial Survey Survey Report

DP1180181

Req:R118927 /Doc:DP 1180181 P /Rev:26-Apr-2013 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:40 /Seq:11 of 12
Ref:catherine hill bay /Src:M

PLAN FORM 6A (Annexure Sheet) WARNING: Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

PLAN OF SUBDIVISION OF Lots 9 & 10 Sec D DP 163, Lot 202 DP 702669, Lot 16 DP 755266, Lot 2030 DP 841175, Lot 223 DP 1102989 & Lot 4 DP 1180292

DP1180181 *

Registered: 24.4.2013 *

* OFFICE USE ONLY

Subdivision Certificate No: SC/77/2012 Date of Endorsement: 15/2/2013

Executed by **Coal & Allied Operations Pty Ltd ABN 16 000 023 656** in accordance with section 127 of the Corporations Act 2001 by or in the presence of:

Signature of Director

Matthew William Halliday

Print name of Director in full

Signature of ~~Director~~/Secretary

Gillian Mary Lyons

Print name of ~~Director~~/Secretary in full

Executed by **Catherine Hill Bay Land Pty Ltd ABN 79 129 266 459** in accordance with section 127 of the Corporations Act 2001 by or in the presence of:

Signature of Director

Eric Stephen Biggs

Print name of Director in full

Signature of ~~Director~~/Secretary

Claire Elizabeth Fidler

Print name of ~~Director~~/Secretary in full

SURVEYOR'S REFERENCE: 07/181

DP1180181

 WARNING: Creasing or folding will lead to rejection ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 3 of 3 sheet(s)

PLAN OF SUBDIVISION OF Lots 9 & 10 Sec D DP 163, Lot 202 DP 702669, Lot 16 DP 755266, Lot 2030 DP 841175, Lot 223 DP 1102989 & Lot 4 DP 1180292

* DP1180181

Registered: 24.4.2013

* OFFICE USE ONLY

Subdivision Certificate No: SC/77/2012 Date of Endorsement: 15/2/2013

Lisa Anne Maffina
EXECUTED for and on behalf of AUSGRID by ~~Katherine Margaret Gunton~~ its duly constituted Attorney pursuant to Power of Attorney registered Book ~~4528~~ No. ~~401~~ in the presence of: 4691 639 LM

.....
~~Katherine Margaret Gunton~~
Lisa Anne Maffina

.....
Witness

.....Melissa Kylie Penney
Name of Witness (please print)

570 George Street,
Sydney, NSW, 2000

.....
Address of Witness

Signed for and on behalf of Hunter Water Corporation ABN 46 228 513 446 by **Stephen George Phillips** its attorney under a Power of Attorney dated 14 June 2012 Registered **Book 4633 No. 465** and the Attorney declares that the Attorney has not received notice of the revocation of such Power of Attorney in the presence of:

D Bindley
Signature of Witness

.....
Signature of Attorney

SURVEYOR'S REFERENCE: 07/181

DP1180181

InfoTrack
Your Searching Partner

PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP 854197

SIGNATURE AND SEALS ONLY

the COMMON SEAL of [illegible] was affixed by [illegible] Director

Director

Secretary

SURVEY PRACTICE REGULATION 1990 (CLAUSE 32 (2))				
MARK	I.S.G. COORDINATES		ZONE	ACCURACY
	EASTING	NORTHING		
SSM 28232	357 365.486	6 332 662.956	56/1	2
SSM 28418	357 334.514	6 332 236.080	56/1	3
SSM 28419	357 307.803	6 332 310.271	56/1	3
I.S.G. COORDINATES ADOPTED FROM LAND INFORMATION CENTRE ON 20TH APRIL 1995				
COMBINED SEA LEVEL & SCALE FACTOR 0.99997				

SCHEDULE OF REFERENCE MARKS			
COR.	BEARING	DIST.	FROM
A	89° 15'	0.635	R.M.C.I.P.
B	85° 10'	0.485	R.M.C.B. FD. – (D.P. 254490)
C	85° 04'	0.5	R.M.C.B. FD. – (D.P. 636565)

I.S.G.

DIAGRAM
SCALE 1:800

CRANGAN BAY DRIVE (30 WIDE & VARIABLE)

NORDS WHARF ROAD

SEE DIAGRAM

SEE SHEET 2

SSM 87682 FD. (NOT ESTABLISHED)

SSM 28232 FD.

SSM 28418 FD.

SSM 28419 FD.

R.M.C.B. FD. 104°16' – 0.455 (D.P. 254490)

REF. GUM APM15 FD. 201° 57' – 12.01 (M24129)

R.M.C.B. FD. 27°53' – 0.5 (D.P. 636565)

SOUTHERN MOST TELEVISION TRANSMISSION TOWER MT. SUGARLOAF

74°48'52"	283.251	BY SURVEY (CALC.)
74°48'52"	283.237	I.S.G. GND.

34°38'42"	453.103	BY SURVEY
34°38'58"	453.086	I.S.G. GND.

Crown Lands Office Approval

PLAN APPROVED .....
Authorised Officer
Land District .....
Paper No. .....
Field Book ..... pages .....

Council's Certificate

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of [clause 9 Division 4 of the Hunter Water Board Act 1991/s.38A of Part 5 Division 7 of the Hunter Water Board (Corporatisation) Act 1991,

have been complied with by the applicant in relation to the proposed Subdivision
(Select "new road", "subdivision" or "consolidation") set out herein

Subdivision No. 85/198

Date 7/8/95

(Signature) .....
General Manager/Authorised Person

Council File No. 4/4901/0004

*This part of certificate to be deleted where the application is only for a consolidation lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Water Board and the Hunter Water Corporation Ltd.

†Delete if inapplicable

SURVEYOR'S REFERENCE: 4/4901/0004

Registered: 14-11-1995

D.A. No 95/188 OF 7.8.1995

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: 9427-2, 5, 42

Last Plan: DP 736171

PLAN

OF SUBDIVISION OF LOT 10 D.P. 736171

Lengths are in metres. Reduction Ratio 1:2000

LGA: LAKE MACQUARIE

Locality: NORDS WHARF

Parish: WALLARAH

County: NORTHUMBERLAND

This is sheet 1 of my plan in ..... sheets.
(Details if inapplicable)

I, PETER WILLIAM THOMPSON
of P.O. BOX 1908, HUNTER REGION MAIL CENTRE, 2310

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulation 1990 and was completed on 8TH MAY 1995

Signature: P. Thompson
Surveyor registered under Surveyors Act, 1929, as amended
Datum Line of Azimuth 'X – Y'
Plan(s) used in preparation of survey/compilation.

D.P. 254490
D.P. 636565
D.P. 736171

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

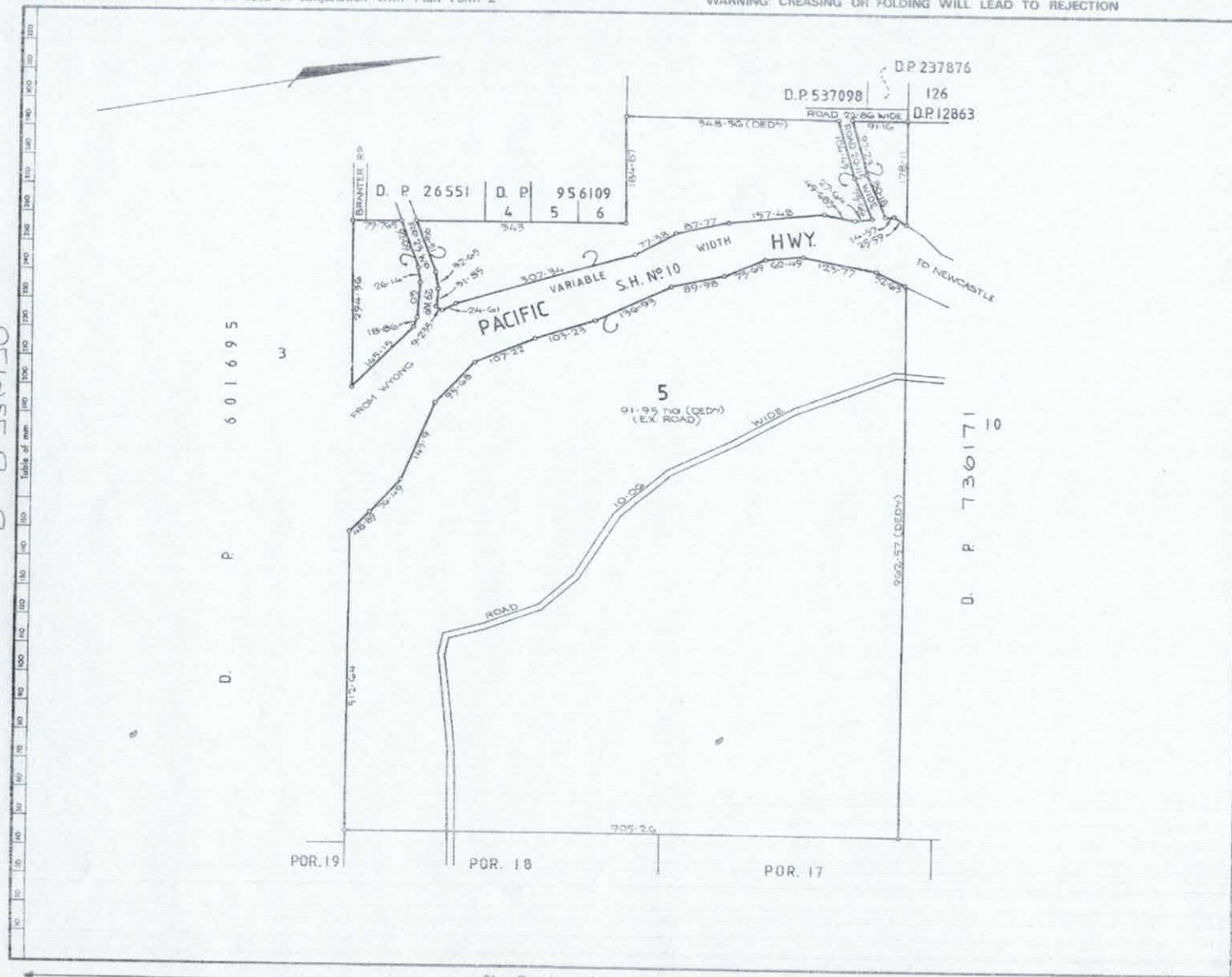
PLAN AMENDED IN CTO AT SURVEYOR'S REQUEST

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Req:R118764 /Doc:DP 0854197 P /Rev:16-Nov-1995 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:1 of 2
Ref:catherine hill bay /Src:M

PLAN FORM 3a To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



D.P. 736170

Registered: 23.9.1986

This is sheet 3 of my plan in 3 sheets dated 11.9.1985

16.6.1986

Surveyor registered under Surveyors Act 1929

This is sheet of the plan of
Sheets covered by my Certificate No.
of

Council Clerk

City	LAKE MACQUARIE
Locality:	NORDS WHARF
Parish:	WALLARAH
County:	NORTHUMBERLAND

Statements of Intention – Continued:

Reduction Ratio 1:5000

Lengths are in metres

Plan Drawing only to appear in this space

D.M.R. FILE: 10/252.1822 PT 2 D.M.R. PLAN: 0010 252 SS 2140

D.P. 736170

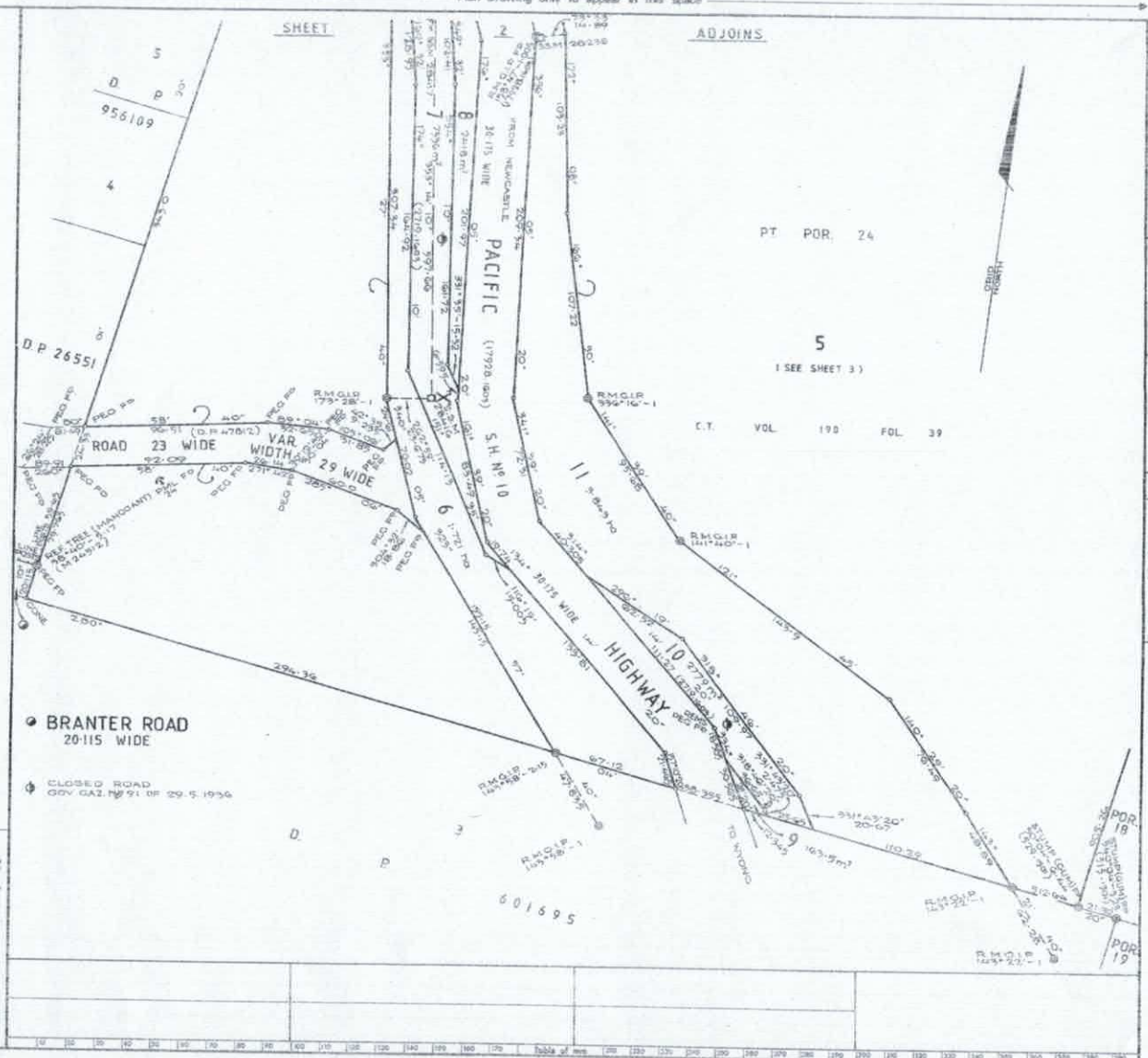
Req:R118780 /Doc:DP 0736170 P /Rev:13-Aug-2012 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:3 of 3
Ref:catherine hill bay /Src:M

InfoTrack

Req:R118780 /Doc:DP 0736170 P /Rev:13-Aug-2012 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:1 of 3
Ref:catherine hill bay /Src:M

PLAN FORM 2a

Plan Drawing only to appear in this space



D.P. 736170 (E)

Registered: 23.9.1986

C.A.:

Title System: TORRENS

Purpose: ACQUISITION
(NOT A CURRENT PLAN AT REGN. SEE SEC. 32 TAA L.G. ACT)

Ref. Map: U5427-5, 42, 44, 53

Last Plan:

PLAN OF LAND TO BE ACQUIRED FOR THE PURPOSES OF THE STATE ROADS ACT, 1986

Reduction Ratio 1:1500
Lengths are in metres.

City:	LAKE MACQUARIE
Locality:	NORDS WHARF
Parish:	WALLARAH
County:	NORTHUMBERLAND

This is sheet 1 of my plan in 3 sheets
(Delete if inapplicable).

I, MALCOLM LINDSAY GARRY
of DEPARTMENT OF MAIN ROADS
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan
is accurate and has been made *(1) by me ~~[illegible]~~ in accordance with the Survey Practice Regulations, 1932, and was completed on 1
11.9.1985

Signature: M.L. Garry 16.6.1986

Surveyor registered under Surveyors Act, 1929 as amended
Datum Line of Azimuth X - Y D.M.R.

PLAN No 0010 252 CS 0001 & 4.
P.B.s 0010 252 FP 5449-5448 (FOIL)
Parish for use only for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

BS 89

LOTS 6 TO 19 INCL. ARE REQUIRED FOR ROAD AND AFTER ACQUISITION AND REMOVAL OF IMPROVEMENTS WILL ULTIMATELY BE DECLARED PUBLIC ROAD

APPROVED:

FOR DEPUTY PRINCIPAL SURVEYOR AND PROPERTY OFFICER, DEPARTMENT OF MAIN ROADS.

Council Clerk's Certificate

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

(b) the requirements of section 346 of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed
(Insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No.

Date

Signature

Council Clerk

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the area of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

*Delete if inapplicable.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

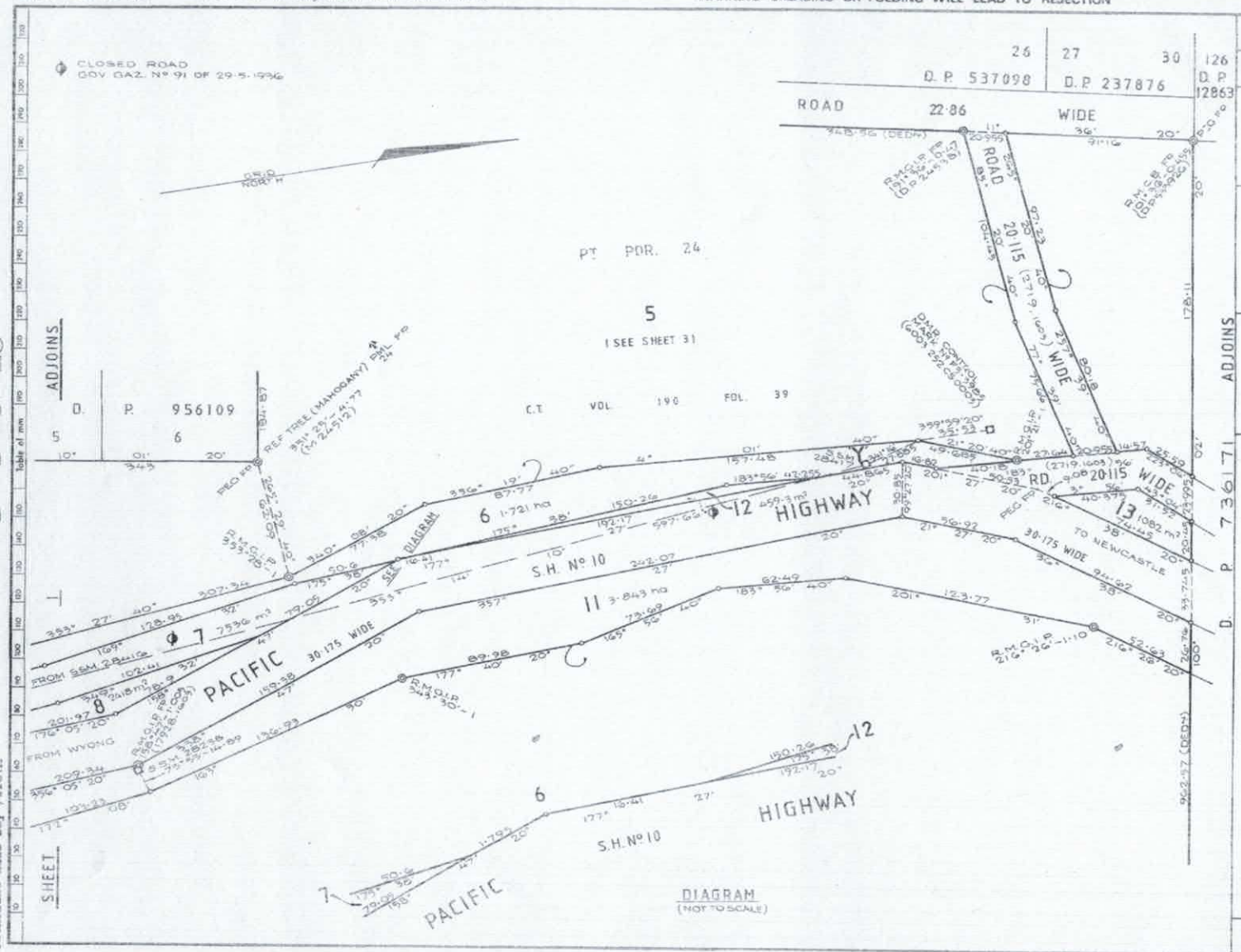
D.M.R. FILE: 10/292.1822 PT2 D.M.R. PLAN: 0010 252 SS 2140

N009E3A

D.P. 736170

PLAN FORM 3a To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



D.P. 736170

Registered: 23.9.1986

This is sheet 2 of my plan in 3 sheets dated 11.9.1985

16.6.1986

Surveyor registered under Surveyors Act 1929

This is sheet of the plan of Sheets covered by my Certificate No. of

Council Clerk

City: LAKE MACQUARIE

Locality: NORDS WHARF

Parish: WALLARAH

County: NORTHUMBERLAND

Statements of Intention – Continued

Reduction Ratio 1:1500

Lengths are in metres

Plan Drawing only to appear in this space

D.M.R. FILE 10/252 1822 PT 2 D.M.R. PLAN: 0010 252 SS 2140

D.P. 736170

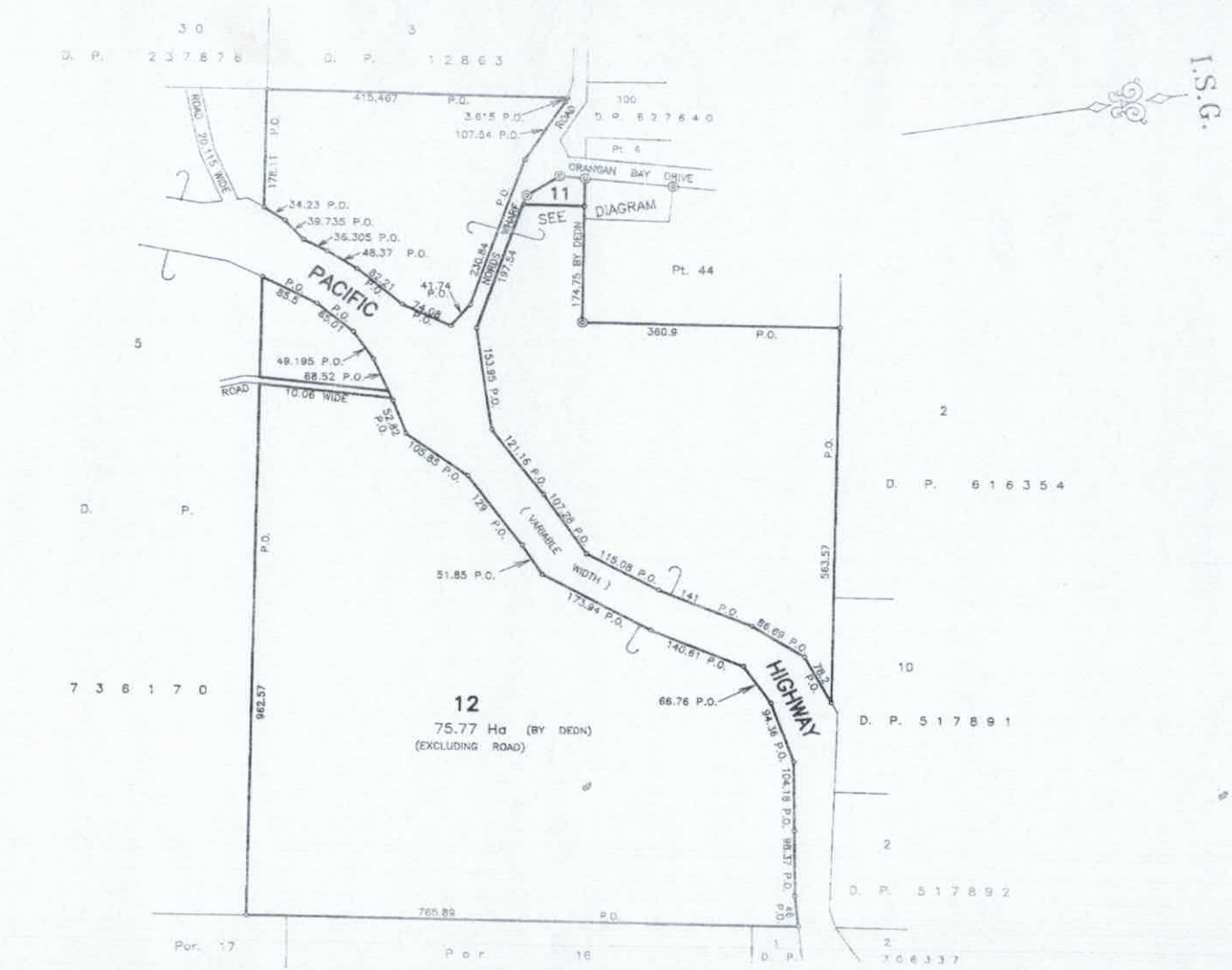
Reg:R118780 /Doc:DP 0736170 P /Rev:13-Aug-2012 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:2 of 3
Ref:catherine hill bay /Src:M

PLAN FORM 3

To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY



DP 854197

Registered: 14-11-1995

This is sheet 2 of my plan in 2 sheets
dated 8TH MAY 1995

P. Thompson

Surveyor registered under Surveyors Act 1908

This is sheet 2 of the plan of 2 sheets covered by my Certificate No. 18 dated 4-4-1901 - 08:00 A.M. to 7-4-1901 - 17:00 P.M.

Council Clerk

For use where space is insufficient in any panel on Plan Form 2

Reduction Ratio 1: 4000

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE 4/4901/0004

Req:R118784 /Doc:DP 0854197 P /Rev:16-Nov-1995 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:2 of 2
Ref:Catherine hill bay /Src:M

PLAN FORM 3

To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY

DP 854197

Registered: 14-11-1995

This is sheet 2 of my plan in 2 sheets dated 8TH MAY 1995

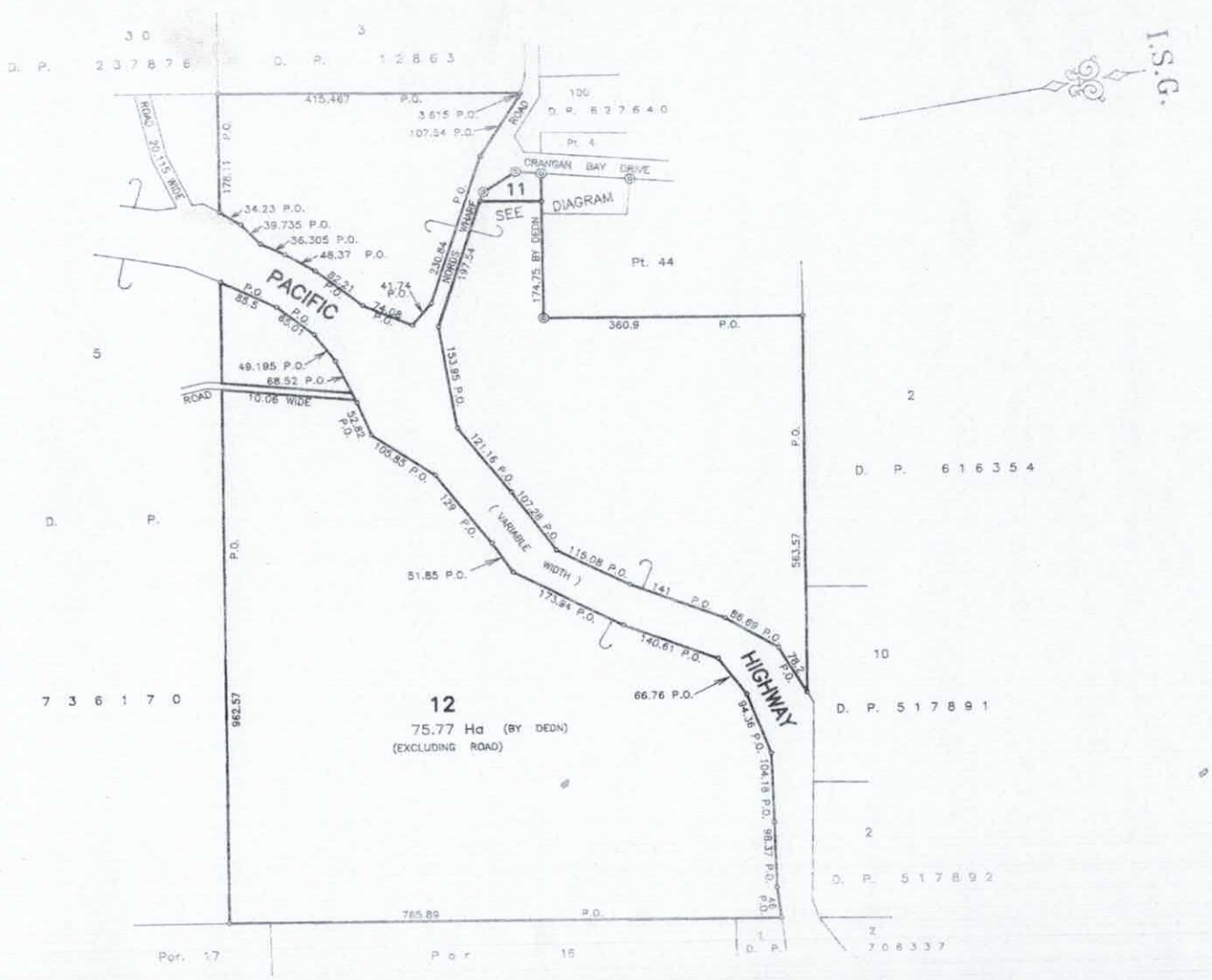
P. Thompson

Surveyor registered under Surveyors Act 1929

This is sheet 2 of the plan of 2 sheets covered by my Certificate no. 95-188 4-4901-0004 of 07-08-95

Council Clerk

For use where space is insufficient in any panel on Plan Form 2.



Reduction Ratio 1: 4000

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE 4/4901/0004

Req:R118784 /Doc:DP 0854197 P /Rev:16-Nov-1995 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:2 of 2
Ref:catherine hill bay /Src:M

InfoTrack

PLAN FORM 2

Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP1102989

Registered: 10-11-2006

C.A.

Title System: TORRENS

Purpose: ACQUISITION (NOT A CURRENT PLAN - SEE SECTION 7A CONVEYANCING ACT, 1919)

Ref. Map: U-5427-9*

Last Plan: DP 993194

PLAN
OF PROPOSED ACQUISITION FOR ROAD WIDENING WITHIN LOT 22, D.P. 593154

Lengths are in metres. Reduction Ratio 1: 1500

LGA: LAKE MACQUARIE

Locality: CATHERINE HILL BAY

Parish: WALLARAH

County: NORTHUMBERLAND

This is Sheet 1 of my plan in sheets. (Delete if inapplicable)

Surveying Regulation 2001

I, PETER WILLIAM THOMPSON of LAKE MACQUARIE CITY COUNCIL, P.O.BOX 1906, HUNTER REGION MAIL CENTRE, 2310, a surveyor registered under the Surveying Act, 2002, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation, 2001 and was completed on 10/05/2005

The survey relates to ROAD WIDENING

(Here specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey)

(Signature) Dated 7/11/06

Datum Line: 'X-Y'

Zone: Urban/Rural

Plans used in preparation of survey/compilation.

D.P.222943
D.P.593154
R6870-1603

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

IT IS INTENDED TO ACQUIRE LOTS 221 & 222 DELINEATED HEREON FOR THE PURPOSE OF ROAD WIDENING EXCEPTING THE LAND BELOW A DEPTH FROM THE SURFACE OF 20 METRES.

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

Crown Lands Office Approval

PLAN APPROVED Authorised Officer

Land District

Paper No.

Field Book: pages

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed set out herein

* [Insert 'subdivision' or 'new road']

* Authorised Person/General Manager/Accredited Certifier

Consent Authority

Date of endorsement

Subdivision Certificate no:

File no.

Delete whichever is inapplicable.

If the plan is to be lodged electronically in the Land Titles Office, it should include a signature in an electronic or digital format approved by the Registrar-General.

SURVEYOR'S REF.: F2004/12619

M.G.A.

CONTINUED BELOW

R.M.G.I.P. 269°44' 0.5

FLOWERS DRIVE

1°41'40" 50.785

1°41'40" 95.97

354°25'55" 132.89

104°44'25" 21.45

14°52'15" 141.515

221 2714m²

215°02'55" 56.11

35°02'55" 62.27

50.925

55° 30.53

R.M.G.I.P. 287°46' 0.51

R.M.G.I.P. 110°10' 0.505

44° (R/DE & VAR.) (20.115 44° R/DE & VAR.) 62.145 99.635

67.355 20° 27

183°38'40" 29.255 48.85 173°11'40" 64.295

78°41'10" 20.815

222 1609m²

183°33'25" 35°48'25" 333°46'25" 333°46'25" 108.36

D.P. 1 2 3 4 5 6 7 8

D.P. 24 25 26 27 28 29

10.06 WIDE ROAD

DRIVE

151°31'55" 130.76

SSM44702 FD. 'X'

156°35'38" 344.673 M.G.A. GND. & BY SURVEY.

SSMB1946 FD. 'Y'

52°23'45" 343.078 BY SURVEY 52°23'28" 343.078 M.G.A. GND.

PM22654 FD.

D.P.854197 12

D.P.755268 16

2809.5 P.O.

D.P.736170 3

556.8 P.O.

223
238.16Ha.
(BY DEDN.)

EXCL ROADS, D.P. 222943, D.P. 588793, D.P. 593154, D.P. 535976, D.P. 410730, D.P. 407474, D.P. 952963, D.P. 205598, D.P. 1029250, D.P. 938225.

21.325 P.O.

D.P.746077 6

834.2 P.O.

D.P.774923 5

1118.9 P.O.

2030

D.P.841175

EASEMENT FOR PIPELINE (WIDE D405404)

D.P. 952963 D.P. 410730 D.P. 407474 D.P. 952963 D.P. 1029250 D.P. 222943 D.P. 222944 D.P. 535976 D.P. 593154 D.P. 205598

EASEMENT FOR ACCESS & PIPELINE 8 WIDE (Q249941)

D.P. 1029250

PACIFIC OCEAN

SOUTH DRIVE

DIAGRAM
1:8000

ORIG. PEG & R.M.G.I.P. FD. 194°51'35" 1.005 (R6870-1603)

14°51'35" 160.97

172°58'30" 1066.79 TO SSM 81946 FD.

FLOWERS DRIVE

354°25'55" 132.89

1°14'40" 30.785

174°25'55" 85.97

R.M.G.I.P. 269°44' 0.5

SURVEYORS (PRACTICE) REGULATION 2001 :CLAUSE 32 (2)					
MARK	M.G.A. COORDINATES		ZONE	CLASS	ORDER
	EASTING	NORTHING			
PM22654	372 350.744	6 331 653.978	56	A	1
SSM44702	371 942.118	6 331 760.897	56	A	1
SSM81946	372 079.013	6 331 444.651	56	B	2
M.G.A. COORDINATES ADOPTED FROM LAND & PROPERTY INFORMATION CENTRE ON 9TH MAY 2005.					
COMBINED SEA LEVEL & SCALE FACTOR: 0.999799					

SCHEDULE OF REFERENCE MARKS			
COR.	BEARING	DISTANCE	DESCRIPTION
1	243°48'25"	0.455	R.M.G.I.P. FD. (D.P.222943)
	254°11'	5.045	R.M.D.H.& W. IN KB
2	243°48'25"	0.455	R.M.G.I.P. FD (D.P.222943)
	234°56'	5.025	R.M.D.H.& W. IN KB.
3	63°48'25"	0.455	R.M.G.I.P. FD. (D.P.222943)

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

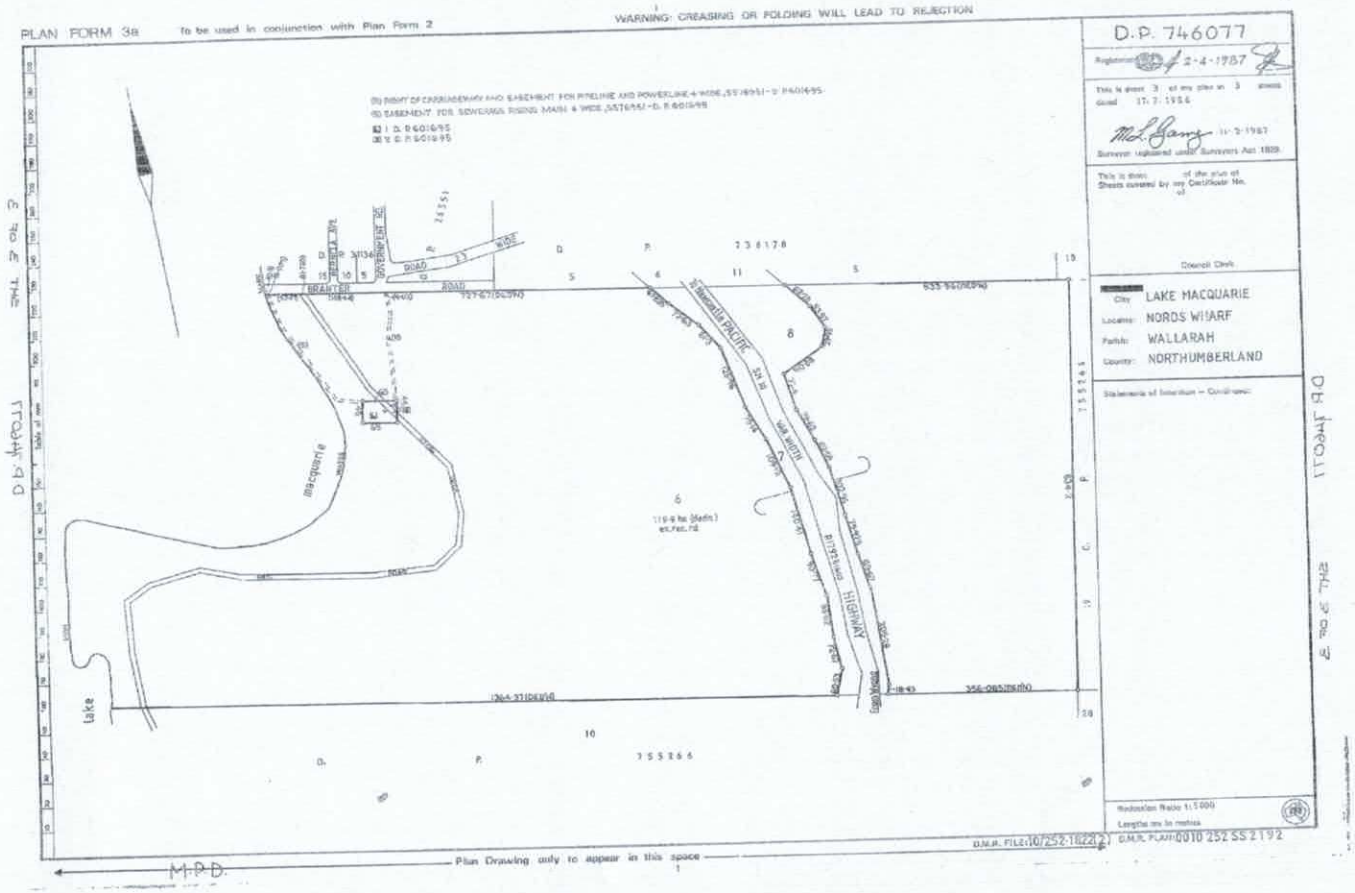
7014244DP

Req:R19871 /Doc:DP 1102989 P /Rev:14-Nov-2006 /Sts:SC.OK /Pgs:ALL /Prt:19-Mar-2019 08:33 /Seq:1 of 1
Ref:catherine hill bay /Src:M

Reg:R18782 /Doc:DP 0746077 P /Rev:28-Jun-1992 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:3 of 3
Ref:catherine hill bay /Src:M

PLAN FORM 3B To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 2nd April, 1987

InfoTrack
Your Searching Partner.

Req:R118782 /Doc:DP 0746077 2 /Rev:28-Jun-1992 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:1 of 3
Ref:catharine hill bay /Src:M

PLAN FORM 2a

Plan Drawing only to appear in this space

D.P. 746077

Registered: 2-4-1987

D.A.:

Title System: TORRENS

Purpose: ACQUISITION (SEE A CURSING PLAN AP 18534 VIDE S 327 TA 1-5 ACT)

Ref. Map: 9342-44 9342-55

Last Plan: D.P. 601695

PLAN OF LAND TO BE ACQUIRED FOR THE PURPOSES OF THE STATE ROADS ACT, 1986

Reduction Ratio 1: 1000

Lengths are in metres

City: LAKE MACQUARIE

Locality: NORDS WHARF

Parish: WALLARAH

County: NORTHUMBERLAND

This is sheet 1 of my plan in 3 sheets.
(Delete if inapplicable)

I, MALCOLM LINDSAY BARRY

of DEPARTMENT OF MAIN ROADS, N.S.W.

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan

is accurate and has been made *(I) by me or under my supervision or (2) in accordance with the Survey Practice Regulations, 1933, and was completed on

13-7-1986

Signature: [signature] 13-3-1987

Surveyor registered under the Surveyors Act, 1929, as amended

Station Line or Network: A DP, Sheet 1.

*Strike out either (1) or (2). *Insert date of survey.

DP 601695 S 175
Parish for use only for roadways or purposes ancillary thereto or for public purposes, drainage reserves, easements or restrictions as to user

LOT(S) 1 AND 5 ARE ACQUIRED FOR ROAD AND AFTER ACQUISITION AND RESUMPTION IS EFFECTED WILL ULTIMATELY BE DECLARED PUBLIC ROAD

APPROVED:

[signature]

FOR DEPUTY PROPER SURVEYOR AND FOR COUNTY OF [illegible]
DEPARTMENT OF MAIN ROADS.

N 0 0 3 E 3 A

Sheet 1 of 3 Sheets

D.P. 746077

Council Clerk's Certificate

I hereby certify that —

(a) the requirements of the Local Government Act, 1919 [strike through: that the requirements for the subdivision of parish, and

*(b) the requirements of section 568 of the Metropolitan Water, Sewerage and Drainage Act, 1924, as amended, Hunter District Water, Sewerage, and Drainage Act, 1938, as amended

have been complied with by the applicant in relation to the proposed [insert "new road", "subdivision" or "consolidation"] as per plan hereto

Subdivision No. .....

Date .....

.....
Signature Council Clerk

*Use para (a) in conjunction with the application in order for a consolidation to be registered as a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

(Delete if inapplicable.)

M.P.D.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

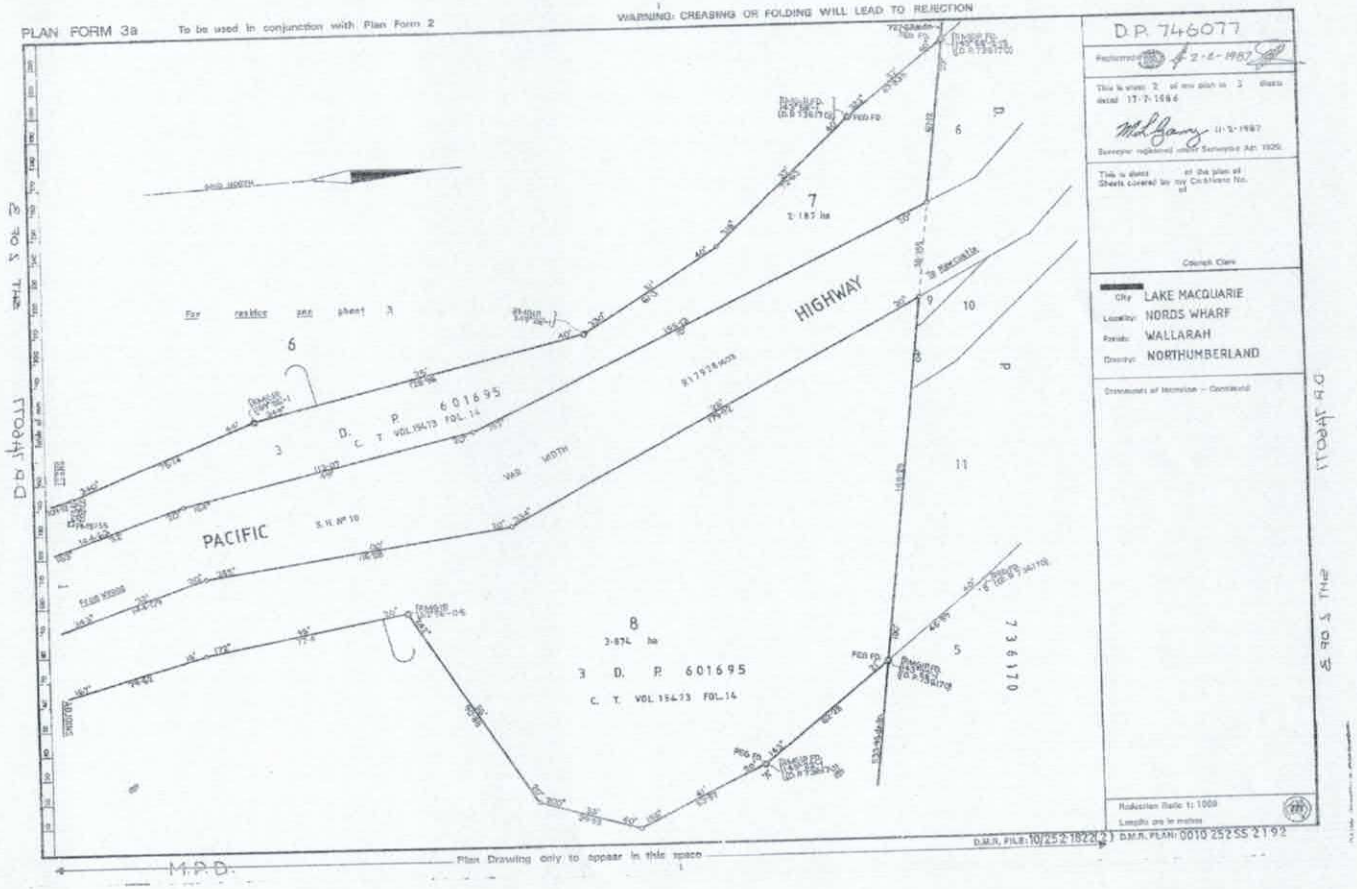
D.M.R. FILE: 10/232.1822(2) D.M.R. PLAN: 0010 252 SS 2192

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 2nd April, 1987

Req:R136782 /Doc:DP 0746077 P /Rev:28-Jun-1992 /Sts:OK.OK /Pgs:ALL /Prt:19-Mar-2019 08:14 /Seq:2 of 3
Ref:catherine hill bay /Src:M

PLAN FORM 3a To be used in conjunction with Plan Form 2

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION



This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 2nd April, 1987

Req:R111558 /Doc:CT 13544-110 CT /Rev:27-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:18-Mar-2019 10:39
Ref:catherine hill bay /Src:M

13544110

CERTIFICATE OF TITLE

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

Vol. 13544 Fol. 110

Crown Grants Vol. 915 Fol.211
Vol.4378 Fol. 38

Prior Title Vol. ~~6697~~ 6696 Fol.113

EDITION ISSUED 1979MT

CANCELLED 1978

Reg. Gen. 30-3-1981

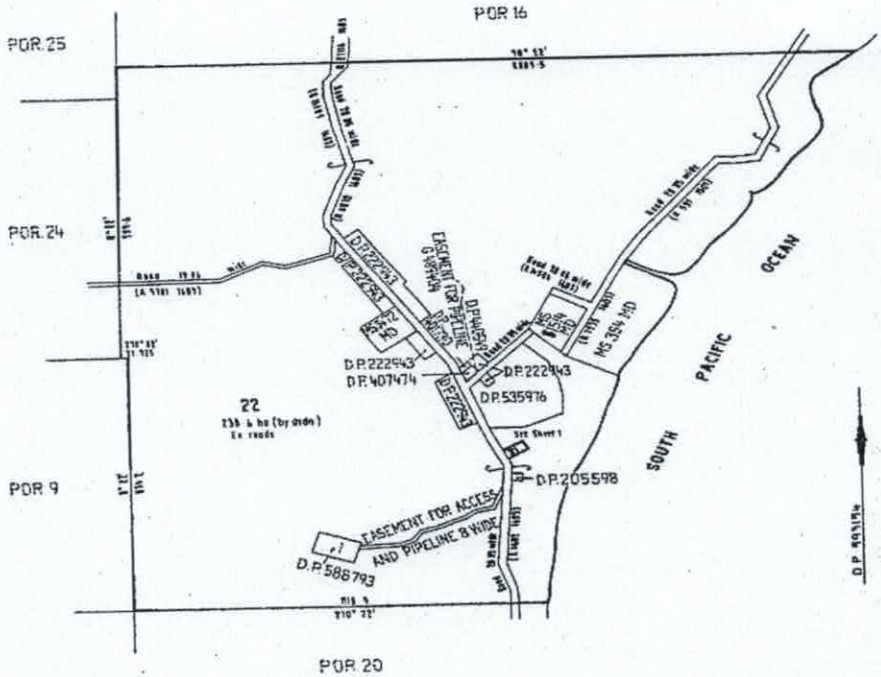
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

SEE AUTO FOLIO

Registrar General.

(Page 1) Vol. 13544 Fol. 110

PLAN SHOWING LOCATION OF LAND
LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 22 in Deposited Plan 593154 at Catherine Hill Bay in the Municipality of Lake Macquarie Parish of Wallarah and County of Northumberland. EXCEPTING THEREOUT the land below a depth of 15.24 metres from the surface of the 7335 square metres grant and the minerals reserved by the 7335 square metres grant and the land below a depth of 20 metres of Portions 17, 18 and 19.

FIRST SCHEDULE

J. & A. BROWN & ABERMAIN SEAHAM COLLIERIES LIMITED.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. G489404 Easement for Pipeline affecting the part of the land above described shown so burdened in Deposited Plan 593154.
3. J691673 Rights of mine coal appurtenant to the coal and other minerals and metals under the land above described affecting the land comprised in Certificate of Title Volume 9142 Folio 116.
4. Q249941 Easement for Access and Pipeline affecting the part of the land above described shown so burdened in Deposited Plan 593154.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Req:R111558 /Doc:CT 13544-110 CT /Rev:27-Jan-2011 /Sts:OK.SC /Pgs:ALL /Prt:18-Mar-2019 10:39
Ref:catherine hill bay /Src:M

REFER SDB 1979M77

Vol. 13544 Fol. 110

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2019 10:39AM

FOLIO: 22/593154

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13544 FOL 110

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
22/9/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
10/11/2006	DP1102989	DEPOSITED PLAN	
~~12/2/2007~~	~~AC871487~~	~~TRANSFER~~	FOLIO CANCELLED

*** END OF SEARCH ***

catherine hill bay

PRINTED ON 18/3/2019

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Received: 18/03/2019 10:39:01

Req:R111545 /Doc:DL AC871487 /Rev:14-Feb-2007 /Sts:NO.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:1 of 4
Ref:catherine hill bay /Src:M

Form: 01T
Release: 3.0
www.lands.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AC871487D

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
08-01-2007 0003981252-001
SECTION 277-ORIGINAL
NO DUTY PAYABLE

Revenue NSW
TORRENS TITLE
YEAR 2005 N4
TERATION NOTED

(A) Folio Identifier 22/593154; Part, being Lots 221 and 222 in DP 1102989
PROD

(B) **LODGED BY**

Document Collection Box	Name, Address or DX and Telephone	CODES
BOX 582W	SERVICE FIRST REGISTRATION DX 189 SYDNEY PH [illegible] Reference: [illegible] Coq	T TW (Sheriff)

(C) **TRANSFEROR** Coal and Allied Operations Pty Limited ACN 000 023 656

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 5,500.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Council of the City of Lake Macquarie ABN 81065027868

(I) **TENANCY:**

DATE 22.12.06

(J) Certified correct for the purposes of the Real Property Act 1900 by the corporation named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appear(s) below.

Corporation: Coal and Allied Operations Pty Limited
Authority: s 127 Corporations Act

Signature of authorised person:
Name of authorised person: Michelle Clare Tilley
Office held: COMPANY SECRETARY

Signature of authorised person:
Name of authorised person: Robert Stanley Light
Office held: DIRECTOR

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: Peter Rees
Signatory's capacity: transferee's solicitor

Req:R111545 /Doc:DL AC871487 /Rev:14-Feb-2007 /Sts:NO.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:2 of 4
Ref:catherine hill bay /Src:M

Film with AC871487

STATUTORY DECLARATION

I **HELEN ELIZABETH MURRAY** of 28 Honeysuckle Drive, Newcastle in the State of New South Wales, Solicitor solemnly and sincerely declare that:

1. I am the solicitor acting for Coal & Allied Operations Pty Limited ACN 000 023 656 formerly J & A Brown & Abermain Seaham Collieries Limited.

2. On 19 March 1980 J & A Brown & Abermain Seaham Collieries Limited converted to a proprietary company and changed its name to Coal & Allied Operations Pty Limited.

3. A copy of the Certificate of Incorporation on conversion to a proprietary company and change of name is **attached**.

AND I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

Declared at Newcastle this)
22nd day of December 2006)
before me:)

.....

.....
Solicitor/~~Justice of the Peace~~

HEM\SYA\DNEW\4187172\1

2053

Req:R111545 /Doc:DL AC871487 /Rev:14-Feb-2007 /Sts:NO.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:3 of 4
Ref:catherine hill bay /Src:M

"A"

No. of Company
13618-14

Certificate of Incorporation on Conversion to a Proprietary Company AND CHANGE OF NAME.

Companies Act, 1961 – (Section 26 (3))

This is to Certify *that*

J. & A. Brown & Abermain Seaham Collieries Limited

which was on the nineteenth *day of* January , 19 31,
incorporated under the Companies Act, ~~19XX~~ 1899, *as a company limited by shares,*
did on the nineteenth *day of* March , 19 80,
convert to a proprietary company and that the name of the company now is

COAL & ALLIED OPERATIONS PTY. LIMITED

Given *under the seal of the Corporate Affairs Commission at Sydney,*
this nineteenth *day of* March , 19 80.

F. J. O. Ryan.

Commissioner.

3053

Req:R111545 /Doc:DL AC871487 /Rev:14-Feb-2007 /Sts:NO.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:4 of 4
Ref:catherine hill bay /Src:M

DATED

STATUTORY DECLARATION

of

HELEN ELIZABETH MURRAY

SPARKE HELMORE
Solicitors & Notaries
28 Honeysuckle Drive
NEWCASTLE NSW 2300
DX 7829 NEWCASTLE
Phone: 02 4924 7200
Fax: 02 4924 7299

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2019 10:38AM

FOLIO: 223/1102989

First Title(s): VOL 915 FOL 211 VOL 4378 FOL 38
Prior Title(s): 22/593154

Recorded	Number	Type of Instrument	C.T. Issue
10/11/2006	DP1102989	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
~~12/2/2007~~	~~AC871487~~	~~TRANSFER~~	FOLIO CREATED EDITION 1
12/2/2007	AC929507	DEPARTMENTAL DEALING	EDITION 2
4/3/2009	AE534509	TRANSFER	EDITION 3
1/11/2012	AH337658	DEPARTMENTAL DEALING	
24/4/2013	DP1180181	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

catherine hill bay

PRINTED ON 18/3/2019

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Received: 18/03/2019 10:38:25

Req:R111548 /Doc:DL AE534509 /Rev:05-Mar-2009 /Sts:SC.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:1 of 5
Ref:catherine hill bay /Src:M

Form: 01T
Licence: 03-11-027
Licensee: Blake Dawson

TRANSFER

New South Wales
Real Property Act 1900

AE534509D

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
24-02-2009 0005318111-001
SECTION 281-ORIGINAL
NO DUTY PAYABLE

Ø STAT DEC RECHARGE

(A) **TORRENS TITLE** If appropriate, specify the part transferred
Folio identifiers 202/702669, 2030/841175, 223/1102989, 16/755266 & Auto Consol 1600-165

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
238N	123155F Blake Dawson DX 355 Sydney Tel: 02 9258 6000 Reference (optional): 02-1403-3817	T TW (Sheriff)

(C) **TRANSFEROR** Coal & Allied Operations Pty Limited ACN 000 023 656
(formerly J. & A. Brown & Abermain Seaham Collieries Limited)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1.00 and as regards
(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple.
(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable): 1. 2. 3.

(H) **TRANSFEREE** Catherine Hill Bay Land Pty Ltd ACN 129 266 459

(I) **TENANCY:**

DATE 24 / 11 / 2008
dd mm yyyy

(J) See annexure for execution.

ALL HANDWRITING MUST BE IN BLOCK CAPITALS
Vol 915-210
Vol 1600-165

ANNEXURE TO TRANSFER DATED 24 November 2008 BETWEEN COAL & ALLIED OPERATIONS PTY LIMITED AS TRANSFEROR AND CATHERINE HILL BAY LAND PTY LTD AS TRANSFEREE

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: **COAL & ALLIED OPERATIONS PTY LIMITED**

Authority: Section 127 of the Corporations Act

Signature of authorised person

Robert Stanley Light

Name of authorised person

[Director, ~~Secretary, Sole Director/Secretary~~]
Office held

Signature of authorised person

Susan Jane Casey

Name of authorised person

[~~Director~~, Secretary, ~~Sole Director/ Secretary~~]
Office held

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: **CATHERINE HILL BAY LAND PTY LTD**

Authority: Section 127 of the Corporations Act

Signature of authorised person

Robert Stanley Light

Name of authorised person

[Director, ~~Secretary, Sole Director/Secretary~~]
Office held

Signature of authorised person

Susan Jane Casey

Name of authorised person

[~~Director~~, Secretary, ~~Sole Director/ Secretary~~]
Office held

Req:R111548 /Doc:DL AE534509 /Rev:05-Mar-2009 /Sts:SC.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:3 of 5
Ref:catherine hill bay /Src:M

AE534509

FILM

STATUTORY DECLARATION

I, Geoffrey Rock of 1011 Lemington Road, in the State of New South Wales, do solemnly and sincerely declare that:

1. On or about April 2008, Blake Dawson was instructed to act on behalf of Coal & Allied Operations Pty Limited ACN 000 023 656 in respect of various properties being the land contained in certificates of title folio identifiers 202/702669, 2030/841175, 223/1102989, 16/755266 & Auto Consol 1600-165 ("the **Property**").

2. Coal & Allied Operations Pty Limited ACN 000 023 656 was formerly known as J & A Brown & Abermain Seaham Collieries Limited.

3. I am instructed that J & A Brown & Abermain Seaham Collieries Limited changed its name to Coal & Allied Operations Pty Limited ACN 000 023 656 on 19 March 1980.

4. Coal & Allied Operations Pty Limited ACN 000 023 656 wishes to record its change of name to enable registration of the transfer to Catherine Hill Bay Land Pty Ltd ACN 129 266 459.

5. A copy of the Certificate of Incorporation of Change of Name is attached and marked with the letter "A".

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act 1900.

SUBSCRIBED and **DECLARED** at)
in the State of New South Wales)
this 11th day of FEBRUARY)
2009)

before me:)

.....
Solicitor/Justice of the Peace

.....
Declarant

Barbara Lynette Currie
Justice of the Peace in New South Wales
Registration No. 165268

STATUTORY DECLARATION

of

Geoffrey Rock

Req:R111548 /Doc:DL AE534509 /Rev:05-Mar-2009 /Sts:SC.OK /Pgs:ALL /Prt:18-Mar-2019 10:38 /Seq:5 of 5
Ref:catherine hill bay /Src:M

"A"

No. of Company
13618-14

6572497

Certificate of Incorporation on Conversion to a Proprietary Company AND CHANGE OF NAME.

Companies Act, 1961 – (Section 26 (3))

This is to Certify *that*

J. & A. Brown & Abermain Seaham Collieries Limited

which was on the nineteenth *day of* January , 19 31,
incorporated under the Companies Act, ~~1XXX~~ 1899, *as a company limited by shares,*
did on the nineteenth *day of* March , 19 80,
convert to a proprietary company and that the name of the company now is

COAL & ALLIED OPERATIONS PTY. LIMITED

Given *under the seal of the Corporate Affairs Commission at Sydney,*
this nineteenth *day of* March , 19 80.

F. J. O. Ryan.

Commissioner.

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2019 10:37AM

FOLIO: 1/1180181

First Title(s): VOL 915 FOL 211
Prior Title(s): 223/1102989

Recorded	Number	Type of Instrument	C.T. Issue
24/4/2013	DP1180181	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
30/4/2013	AH183405	REQUEST	EDITION 1
31/7/2017	AM603575	TRANSFER	
31/7/2017	AM603576	MORTGAGE	EDITION 2
8/9/2018	AN695391	DEPARTMENTAL DEALING	EDITION 3 CORD ISSUED

*** END OF SEARCH ***

catherine hill bay

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Received: 18/03/2019 10:37:31

LAND REGISTRY SERVICES **Title Search** InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/1180181

SEARCH DATE	TIME	EDITION NO	DATE
18/3/2019	10:36 AM	3	8/9/2018

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY WESTPAC BANKING CORPORATION.

LAND

LOT 1 IN DEPOSITED PLAN 1180181
AT CATHERINE HILL BAY
LOCAL GOVERNMENT AREA LAKE MACQUARIE
PARISH OF WALLARAH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1180181

FIRST SCHEDULE

WALLALONG LAND DEVELOPMENTS PTY LIMITED (T AM603575)

SECOND SCHEDULE (7 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 15.24 METRES OF THE 7335 SQUARE METRES GRANT
3 LAND EXCLUDES MINERALS RESERVED BY THE 7335 SQUARE METRES GRANT
4 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 20 METRES AS TO POR 17, 18 & 19
5 J691673 RIGHTS TO MINE COAL AND OTHER MINERALS AND METALS APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND COMPRISED IN VOLUME 9142 FOL 116
6 AH183405 PLANNING AGREEMENT PURSUANT TO SECTION 7.6 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979
7 AM603576 MORTGAGE TO WESTPAC BANKING CORPORATION

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

catherine hill bay PRINTED ON 18/3/2019

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LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2019 10:38AM

FOLIO: 4/1180292

First Title(s): VOL 190 FOL 38 VOL 190 FOL 39
VOL 4831 FOL 12 VOL 877 FOL 1
Prior Title(s): 5/736170 ~~6/746077~~
~~12/854197~~

Recorded	Number	Type of Instrument	C.T. Issue
26/2/2013	DP1180292	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
24/4/2013	DP1180181	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

catherine hill bay

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LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
18/3/2019 10:37AM

FOLIO: 2/1180181

First Title(s): VOL 190 FOL 39 VOL 915 FOL 211
Prior Title(s): 223/1102989 4/1180292

Recorded	Number	Type of Instrument	C.T. Issue
24/4/2013	DP1180181	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
30/4/2013	AH183405	REQUEST	EDITION 1
1/8/2017	AM608874	TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 2

*** END OF SEARCH ***

catherine hill bay

PRINTED ON 18/3/2019

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Form: 01T
Licence: 01-05-025
Licensee: LEAP Legal Software Pty Limited
Firm name: Kilmurray Lawyers

TRANSFER

New South Wales
Real Property Act 1900

AM608874T

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the ... by this form for the establishment and maintenance of the Real Property A... the Register is made available to any person for search upon payment of a fee, if any.

Office of State Revenue
NSW Treasury
Client No: 1406120 387
Duty: $10.00 Trans No: 9070166
Asst details:

STAMP DUTY — Office of State Revenue use only

(A) TORRENS TITLE: 2/1180181

(B) LODGED BY

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
BOX 30P	L J KANE & CO LLPN 123818G Reference: PK: WALLALONG	T TW

(C) TRANSFEROR: CATHERINE HILL BAY LAND PTY LTD ABN 79 129 266 459 and
COAL AND ALLIED OPERATIONS PTY LIMITED ABN 16 000 023 656

(D) CONSIDERATION: The transferor acknowledges receipt of the consideration of Contract dated 13/02/2017 and as regards the abovementioned land transfers to the transferee an estate in fee simple.

(E) ESTATE

(F) SHARE TRANSFERRED

(G) Encumbrances (if applicable):

(H) TRANSFEREE: WALLALONG LAND DEVELOPMENTS PTY LIMITED ACN 158 521 567

TENANCY:

(I) DATE

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: Catherine Hill Bay Land Pty Ltd ABN 79 129 266 459
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: Simon John Ellinor
Office held: Director

Signature of authorised person:
Name of authorised person: Antony James Field
Office held: Company Secretary

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:
Signatory's name: Andrew McLeod
Signatory's capacity: Solicitor for the Transferee

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1264658 Full name: Andrew McLeod Signature:

* *s 117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

Annexure A to Transfer

PARTIES:

CATHERINE HILL BAY LAND PTY LTD ABN 79 129 266 459 AND COAL & ALLIED OPERATIONS PTY LIMITED ABN 16 000 023 656 - Transferor

WALLALONG LAND DEVELOPMENTS PTY LIMITED ACN 158 521 567 – Transferee

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appears(s) below pursuant to the authority specified.

Corporation: COAL AND ALLIED OPERATIONS PTY LIMITED ABN 16 000 023 656
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:

.....

Name of authorised person: Simon John Ellinor
Office held: Director

Signature of authorised person:

.....

Name of authorised person: Antony James Field
Office held: Company Secretary

* *s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

LAND REGISTRY SERVICES **Title Search** InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1180181

SEARCH DATE	TIME	EDITION NO	DATE
18/3/2019	10:37 AM	2	1/8/2017

LAND

LOT 2 IN DEPOSITED PLAN 1180181
AT CATHERINE HILL BAY
LOCAL GOVERNMENT AREA LAKE MACQUARIE
PARISH OF WALLARAH COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1180181

FIRST SCHEDULE

WALLALONG LAND DEVELOPMENTS PTY LIMITED (TZ AM608874)

SECOND SCHEDULE (11 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 LAND EXCLUDES MINERALS WITHIN THE PART(S) SHOWN SO INDICATED IN THE TITLE DIAGRAM - SEE CROWN GRANT(S)
3 E997171 COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM.
4 DP1106489 EASEMENT TO DRAIN WATER 3 METRES WIDE REFERRED TO AND NUMBERED (1) IN THE S.88B INSTRUMENT APPURTENANT TO THE PART(S) SHOWN SO BENIFITED IN THE TITLE DIAGRAM
5 DP1106489 EASEMENT TO DRAIN WATER 3 METRES WIDE AND VARIABLE REFERRED TO AND NUMBERED (2) IN THE S.88B INSTRUMENT APPURTENANT TO THE PART(S) SHOWN SO BENIFITED IN THE TITLE DIAGRAM
6 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 15.24 METRES OF THE 7335 SQUARE METRES GRANT WITHIN THE PART(S) SHOWN DESIGNATED 'AA' IN THE TITLE DIAGRAM
7 LAND EXCLUDES MINERALS RESERVED BY THE 7335 SQUARE METRES GRANT WITHIN THE PART(S) SHOWN DESIGNATED 'AA' IN THE TITLE DIAGRAM
8 EXCEPTING LAND BELOW A DEPTH FROM THE SURFACE OF 20 METRES AS TO POR 17, 18 & 19 WITHIN THE PART(S) SHOWN DESIGNATED 'AA' IN THE TITLE DIAGRAM
9 J691673 RIGHTS TO MINE COAL AND OTHER MINERALS AND METALS APPURTENANT TO THE PART SHOWN SO BENEFITED IN THE TITLE DIAGRAM AFFECTING THE LAND COMPRISED IN VOLUME 9142 FOL 116
10 DP1180181 EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 15 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
11 AH183405 PLANNING AGREEMENT PURSUANT TO SECTION 7.6 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

END OF PAGE 1 - CONTINUED OVER

FOLIO: 2/1180181

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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Appendix G

Drawing 1 – Test Location Plan

Drawing 2 – Test Location Plan with Depth of Filling

Drawing 3 – Location of HSL Exceedences

Drawing 4 – Location of ESL Exceedences for Total Recoverable Hydrocarbons

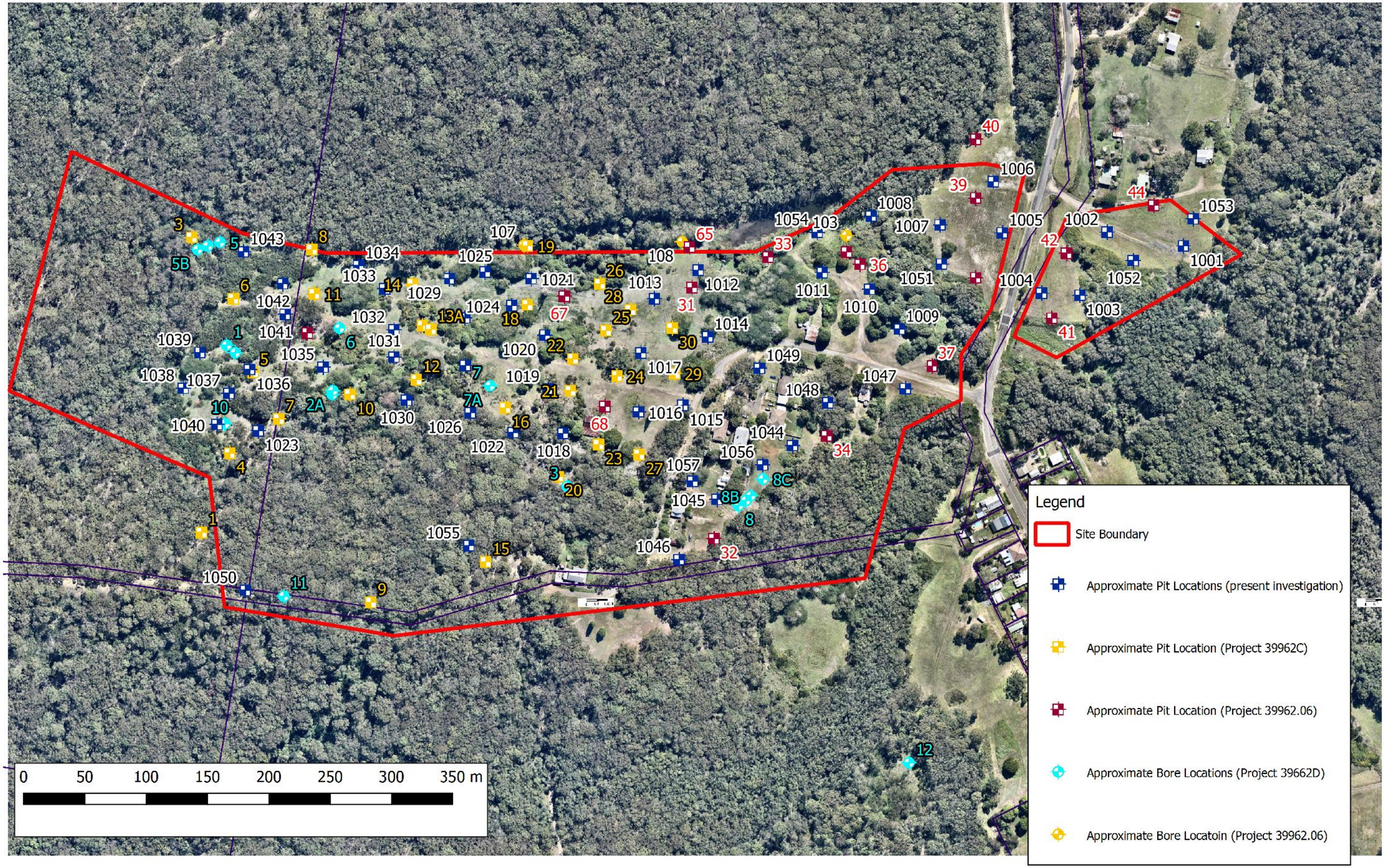
Drawing 5 – Location of ESL Exceedences for Metals

Drawing 6 – Location and Orientation of Site Condition Photos

Drawing 7 – Location of Surface Samples for Asbestos Testing

Drawing 8 – Former Structures on the Site

Drawing 9 – Sampling Locations together with former structures on the site



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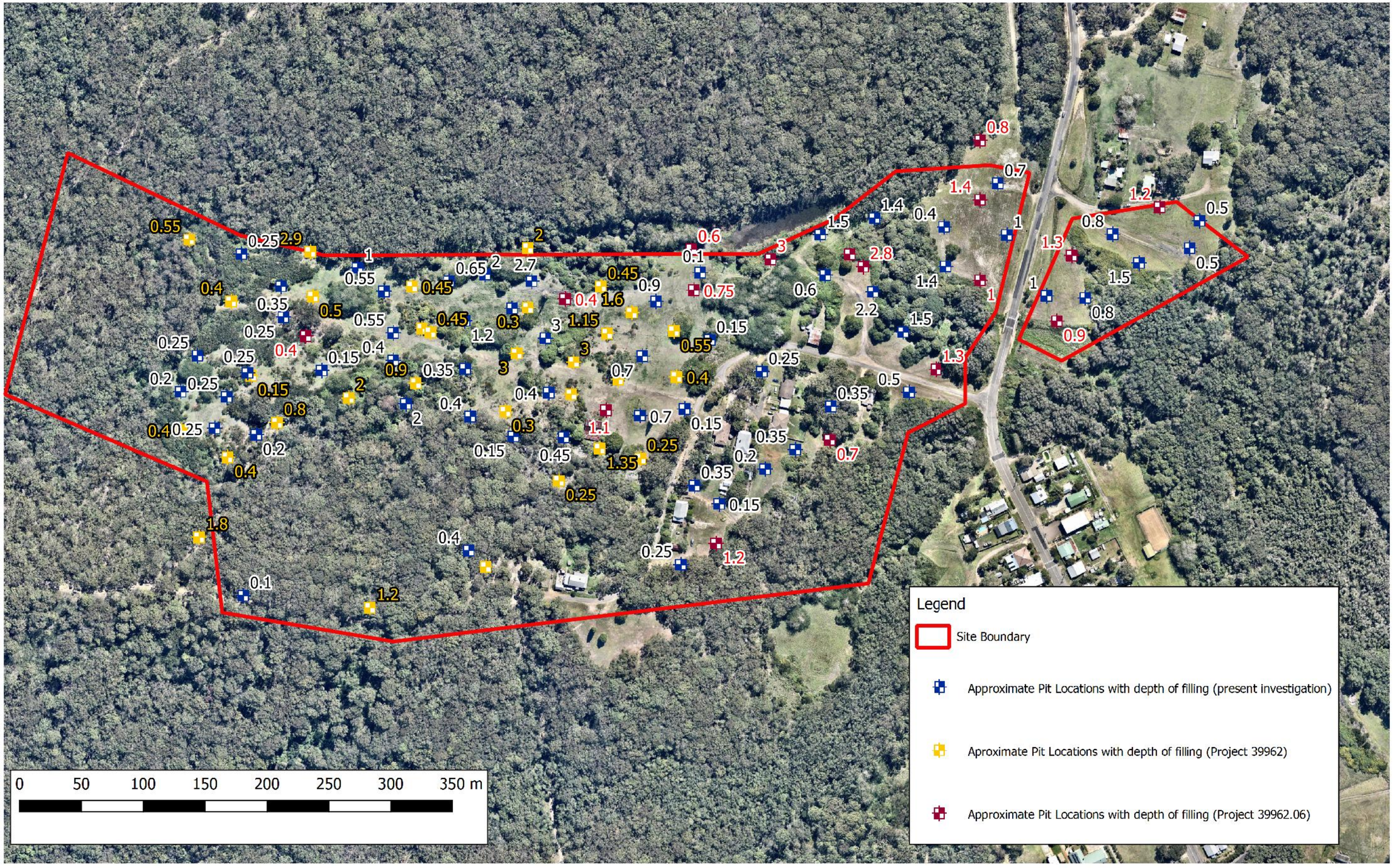
CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	26.11.2018

TITLE: **Test Location Plan**
Proposed Residential Development
Catherine Hill Bay

PROJECT No:	91402.03
DRAWING No:	1
REVISION:	0



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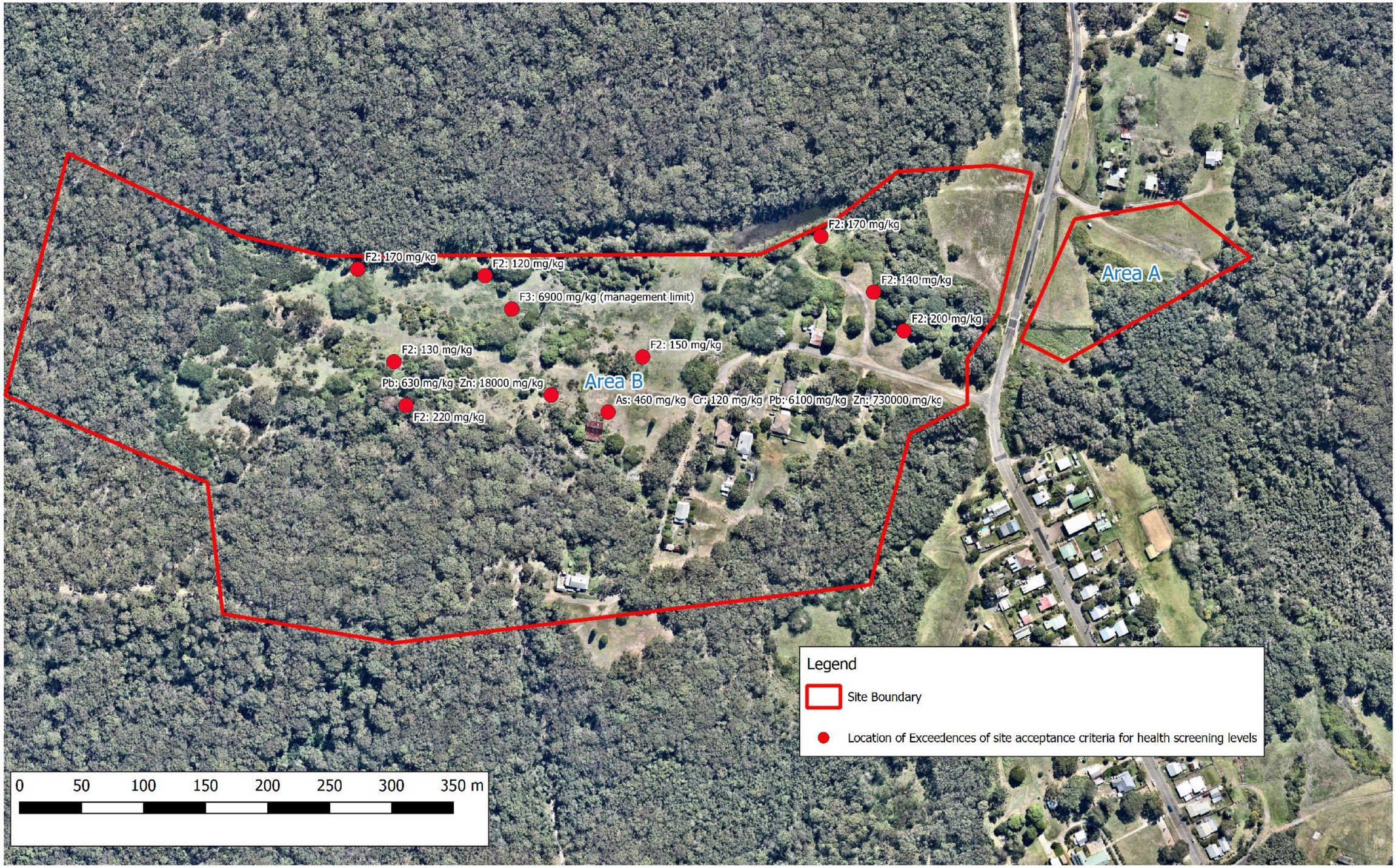
CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	26.11.2018

TITLE: **Test Location Plan - with depth of filling**
Proposed Residential Development
Catherine Hill Bay

N

PROJECT No:	91402.03
DRAWING No:	2
REVISION:	0



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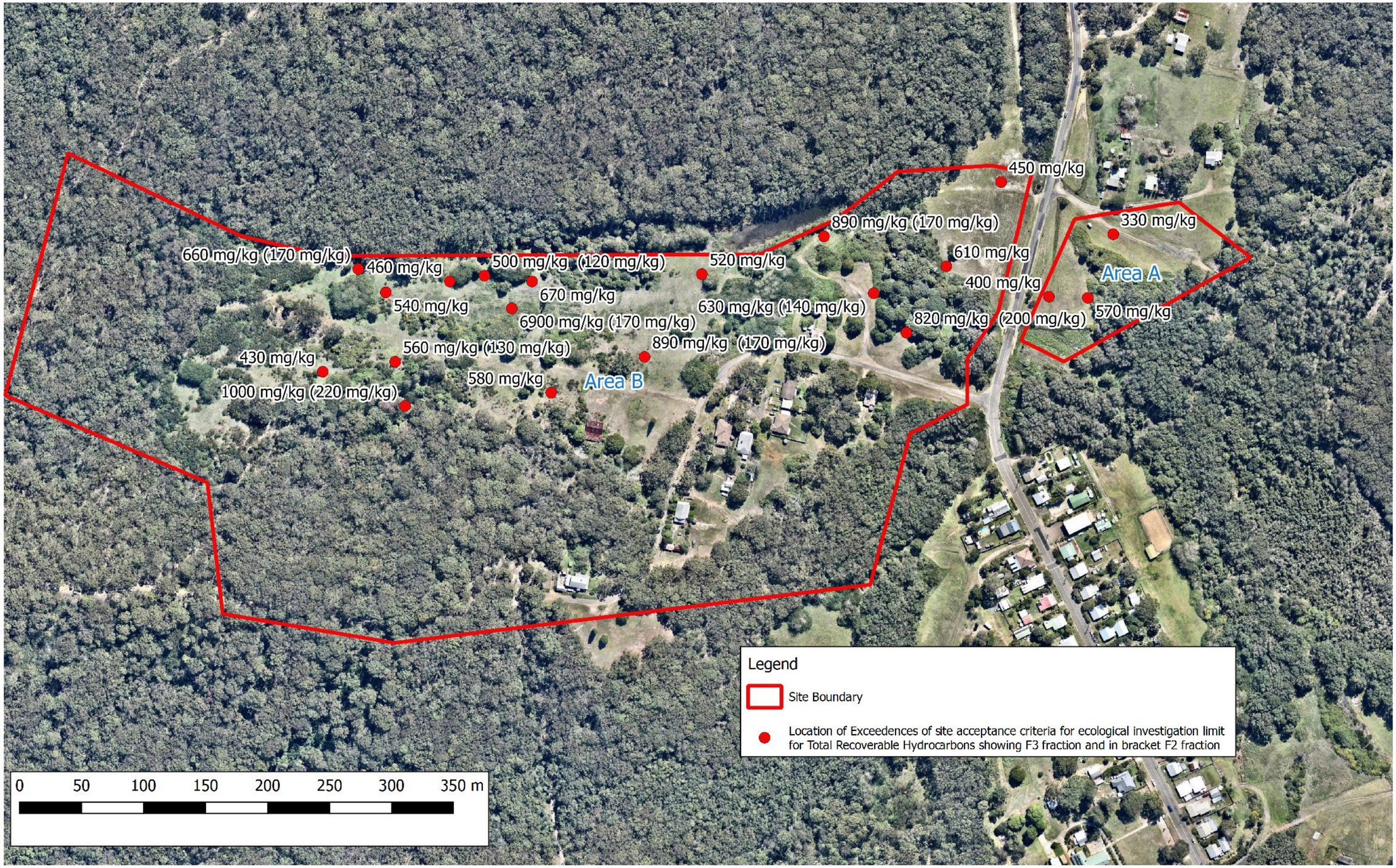
CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	26.11.2018

TITLE: **Location of HSL Exceedences**
Proposed Residential Development
Catherine Hill Bay

PROJECT No:	91402.03
DRAWING No:	3
REVISION:	0



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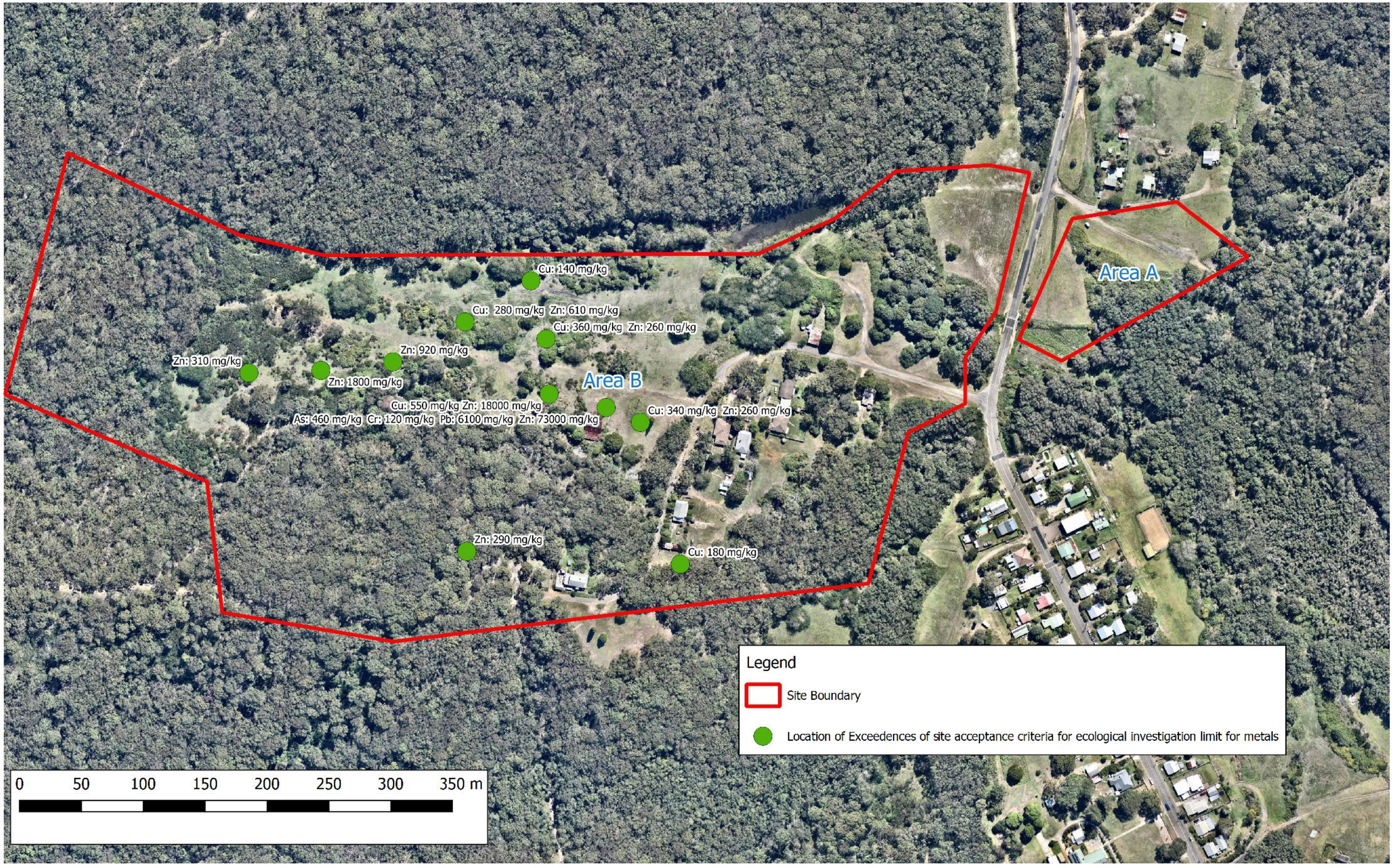
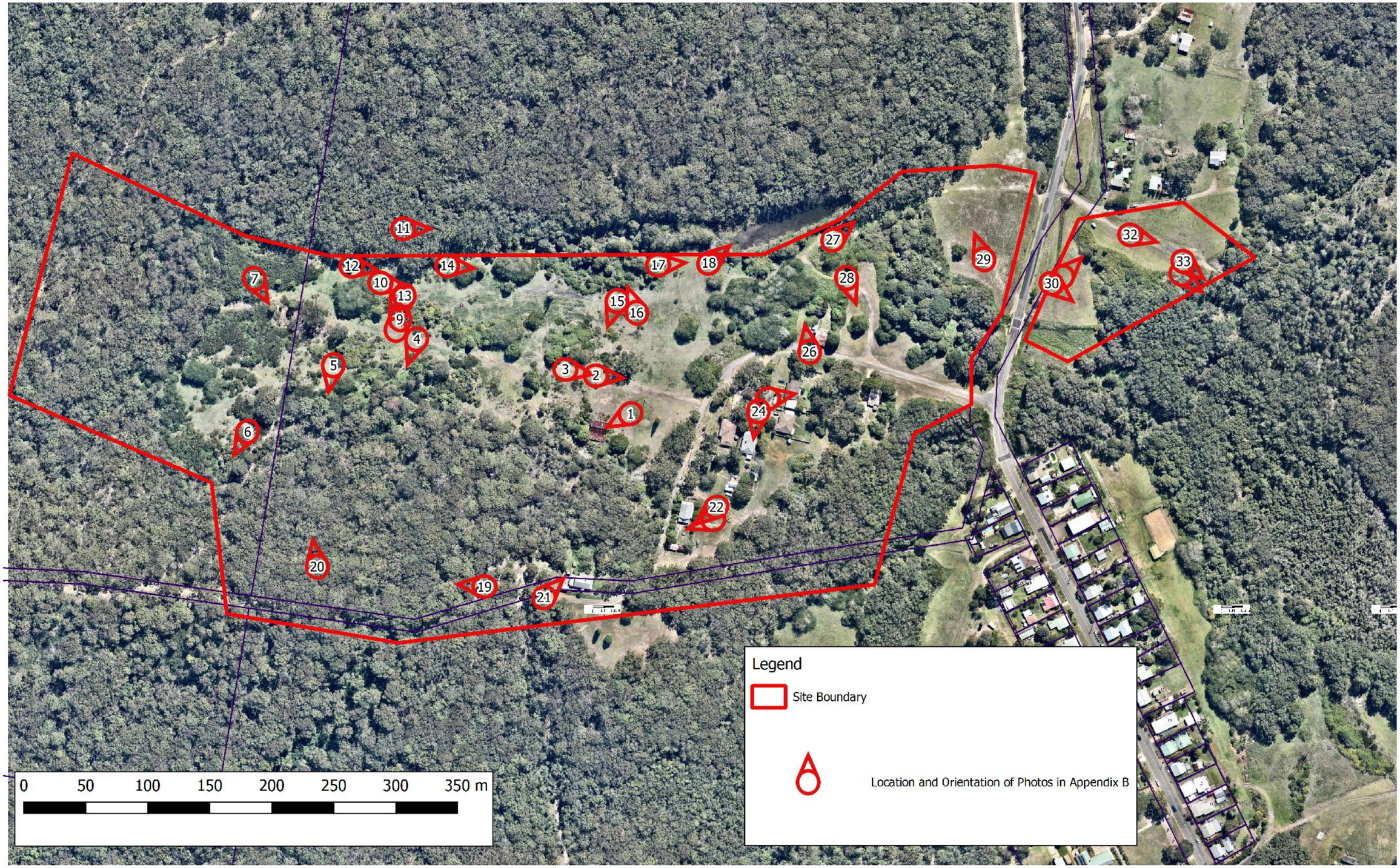
CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	26.11.2018

TITLE: **Location of ESLExceedences for Total Recoverable Hydrocarbons**
Proposed Residential Development
Catherine Hill Bay

PROJECT No:	91402.03
DRAWING No:	4
REVISION:	0



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Wallalong Land Developments Pty Ltd	TITLE: **Location of ESLExceedences for Metals**	PROJECT No: 91402.03
	OFFICE: Newcastle DRAWN BY: MPG	**Proposed Residential Development**	DRAWING No: 5
	SCALE: 1:3000 @ A3 DATE: 26.11.2018	**Catherine Hill Bay**	REVISION: 0



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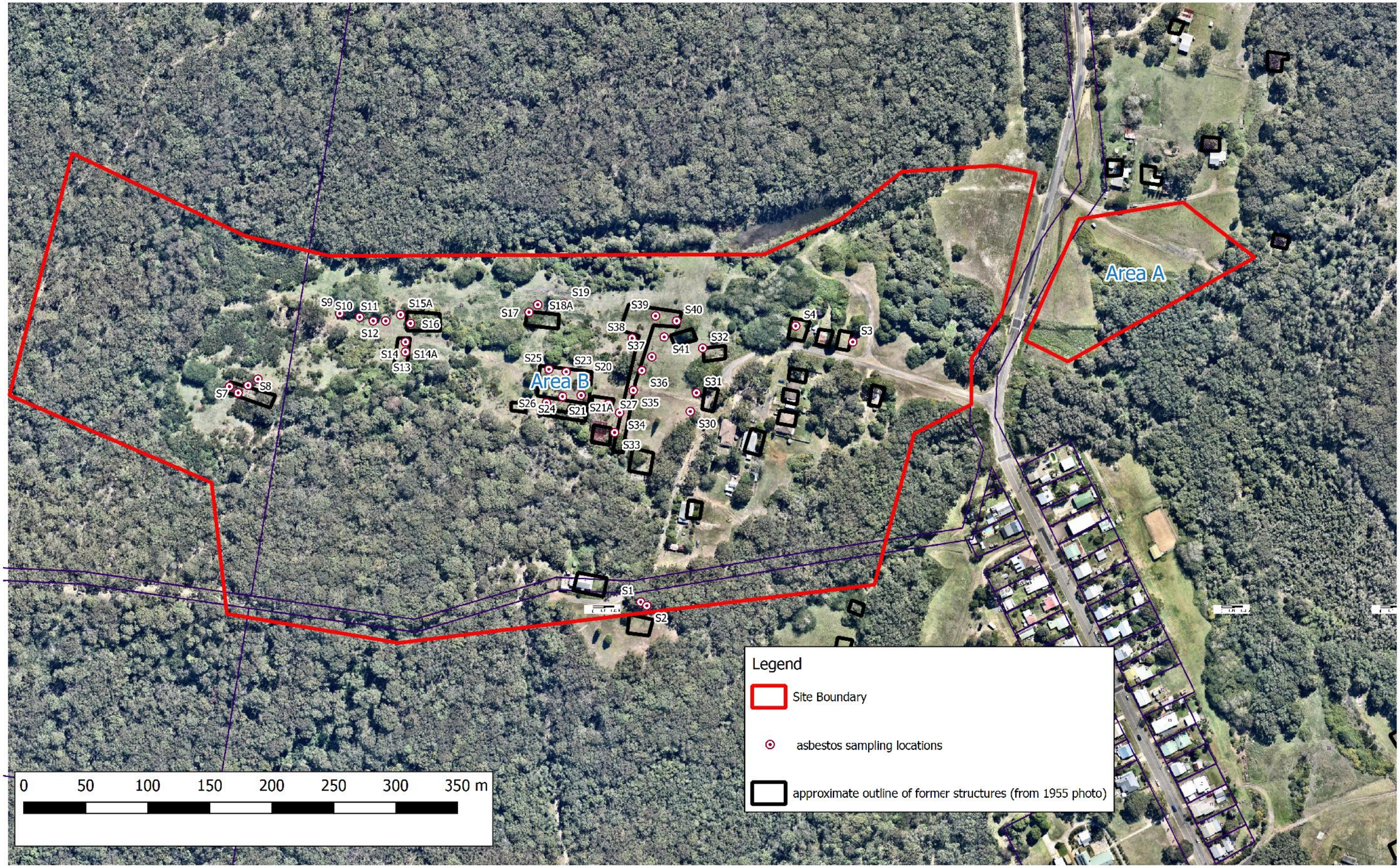
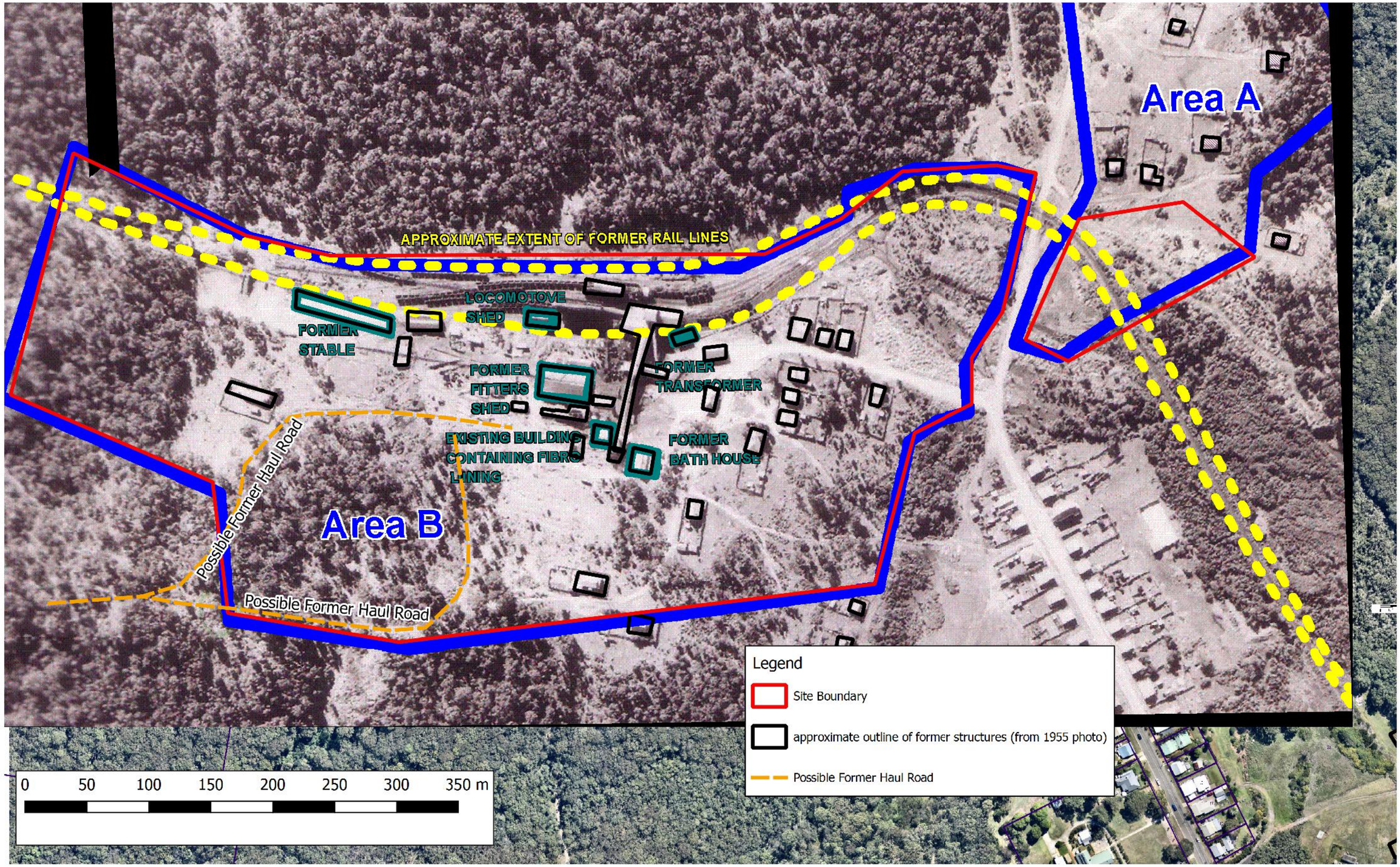
CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	19.03.2019

TITLE: **Location and orientation of photos in Appendix B**
Proposed Residential Development
Catherine Hill Bay

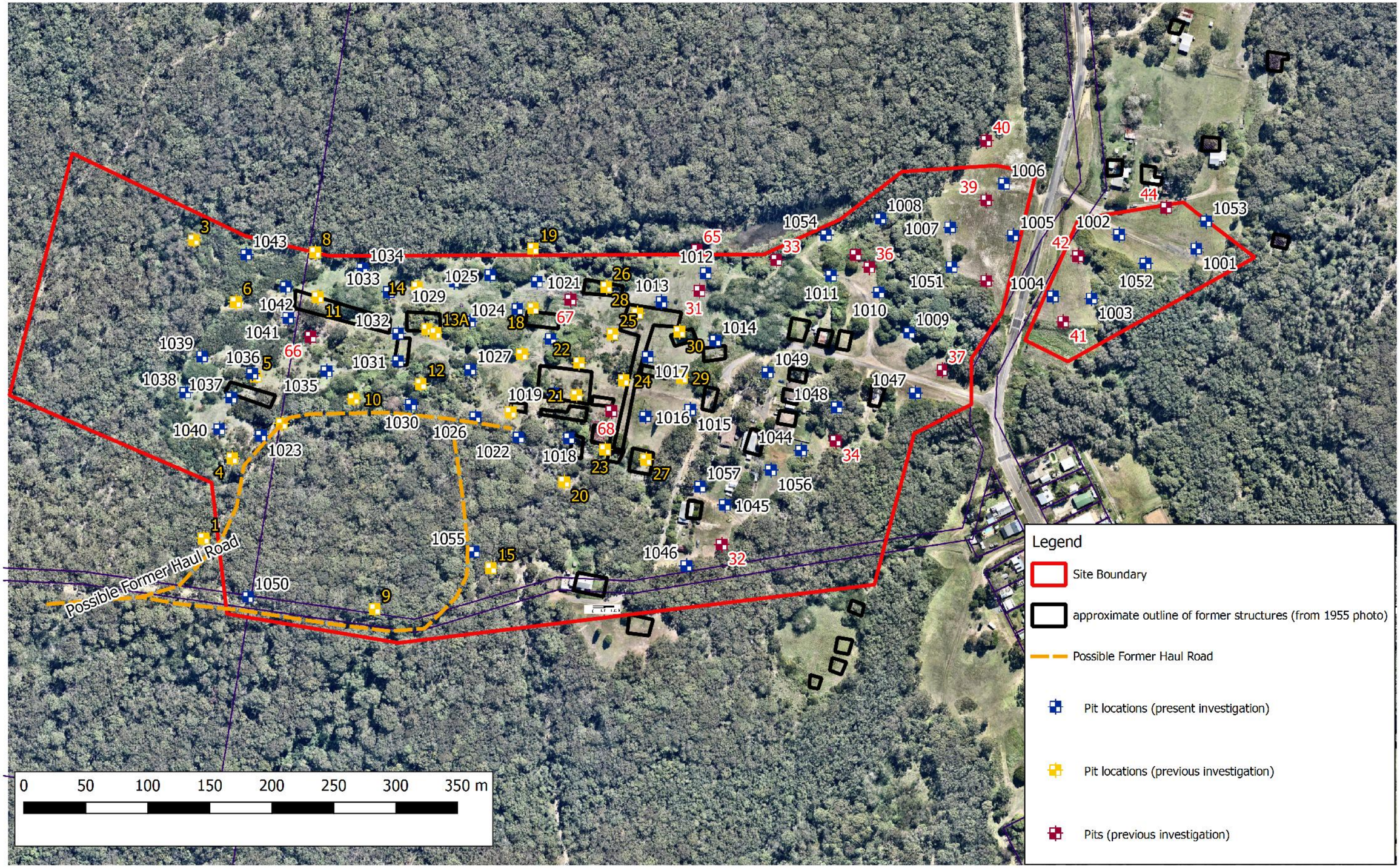
PROJECT No:	91402.03
DRAWING No:	6
REVISION:	0



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Wallalong Land Developments Pty Ltd	TITLE: **Location of Surface Samples for Asbestos Testing** **Proposed Residential Development** **Catherine Hill Bay**	PROJECT No: 91402.03
	OFFICE: Newcastle / DRAWN BY: MPG		DRAWING No: 7
	SCALE: 1:3000 @ A3 / DATE: 19.03.2019		REVISION: 0



Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Wallalong Land Developments Pty Ltd		TITLE: **Former structures on the site** **Proposed Residential Development** **Catherine Hill Bay**	N	PROJECT No: 91402.03
	OFFICE: Newcastle	DRAWN BY: MPG			DRAWING No: 8
	SCALE: 1:3000 @ A3	DATE: 19.03.2019			REVISION: 0



Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Wallalong Land Developments Pty Ltd		
OFFICE:	Newcastle	DRAWN BY:	MPG
SCALE:	1:3000 @ A3	DATE:	19.03.2019

TITLE: **Sampling Locations together with former structures on the site**
Proposed Residential Development
Catherine Hill Bay

N

PROJECT No:	91402.03
DRAWING No:	9
REVISION:	0