

The Uniting Church in Australia Property Trust (NSW) For Uniting (NSW.ACT)

Phase 1 Environmental Site Assessment

War Memorial Hospital 125 Birrell Street, Waverley NSW 2024

> 12 April 2017 51594/104024 (Rev 0) JBS&G

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## **Executive Summary**

JBS&G Australia Pty Ltd (JBS&G) was engaged by Uniting Church in Australia Property Trust (NSW) For Uniting (NSW.ACT) (Uniting, the Client) to review and update a previous Due Diligence / Phase 1 Environmental Site assessment (ESA) of the War Memorial Hospital located at 125 Birrell St, Waverley, NSW (the site). The revised site has an area of approximately 3 hectares (ha). The site location and site layout are presented on **Figure 1** and **Figure 2**, respectively. The legal identification of the site, including lot and Deposited Plan (DP) numbers is provided in **Table 2.1**.

The site is proposed to be redeveloped including expansion of the existing aged care / aged health services campus that would expand the hospital with additional aged care and independent living facilities, office space and areas for community services across the balance of the site. Further, there may be underground parking which will extend out from buildings under open spaces of the site.

The objectives of the investigation were to characterise potential contamination at the site and to draw preliminary conclusions regarding the suitability of the site for the proposed site, or make recommendations on future works required to enable such conclusions to be made.

The scope of work comprised a desktop review of the initial detailed site inspection (2012) and limited soil investigation, a new detailed site inspection (2016), evaluation of existing soil data against current NEPC (2013) guidance and preparation of an updated ESA.

Based on the findings of this assessment and subject to the limitations in **Section 11**, the following conclusions are provided:

- The main portion of the site is understood to have been owned by the Vickery family from 1866 until 1919, when the property was gifted to the Methodist Church for use as a hospital, which continues to the current day. Former residential lots bordering the main portion of the site have gradually been acquired for incorporation into the currently defined site extent.
- A limited site sampling program was implemented in 2012, inclusive of 20 sampling locations. Fill materials generally comprising silty sand with inclusions of ash, slag, tiles, concrete and sandstone gravels were observed to depths ranging from 0.3 to 1.1 m bgs, although some locations did not penetrate the depth of fill material due to obstructions. Natural sands were encountered at three locations at depth ranging from 0.35 to 0.75 m bgs.
- Lead concentrations in fill material in some areas of the site have been identified to represent a potentially unacceptable risk to human receptors under the proposed land use scenario and copper and zinc concentrations in fill material have been identified to represent a potentially unacceptable risk to ecological receptors.
- PAHs including carcinogenic PAHs (as BaP TEQ) concentrations in fill material in some areas of the site have been identified to represent a potentially unacceptable risk to human receptors under the proposed land use scenario and B(a)P concentrations in fill material in some areas of the site represents a potentially unacceptable risk to ecological receptors.
- Concentrations of remaining COPCs, including asbestos, were identified at soil sampling locations to be present at concentrations less than the adopted site assessment criteria.
- No chemical mixtures, aesthetic issues or significant offsite migration risks were identified.
- Whilst areas of near surface fill material have been identified at the site as being impacted with heavy metals and PAHs to varying extent as a result of past land uses, the scale and



extent of the identified impact is not such that common remediation and/or management techniques could not render the site suitable for the future proposed uses. As such, the potential for contamination to occur at the site is considered not to represent a significant barrier to future development of the site.

The following recommendations are made in light of the conclusions:

- Further detailed site investigation be undertaken in accordance with NSW EPA guidance once a detailed development proposal has been designed for the site such that the nature and scale of the investigation may be targeted toward areas of proposed ground disturbance and the most sensitive land uses including landscaped areas to provide appropriate data to draw specific conclusions in relation to the suitability of the site with respect to the anticipated exposure scenarios.
- Subject to the outcome of the detailed investigation activities a remedial/management strategy will be developed to address requirements for management of unacceptable soil contamination risks prior to or during future development activities such that the site (or site portion) may be considered suitable for proposed future use.
- The detailed site assessment reports and, if required, remedial action plan documentation will be required to be submitted with specific development applications to the consent authority for approval as part of the development planning process.
- Given the age of buildings at the site, hazardous materials surveys should also be completed on existing buildings proposed for demolition to ensure appropriate management of materials during demolition of structures as part of future redevelopment activities.



## 1. Introduction

## 1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Uniting Church in Australia Property Trust (NSW) For Uniting (NSW.ACT) (Uniting, the Client) to review and update a previous Due Diligence / Phase 1 Environmental Site assessment (ESA) of the War Memorial Hospital located at 125 Birrell St, Waverley, NSW (the site). The revised site has an area of approximately 3 hectares (ha). The site location and site layout are presented on **Figure 1** and **Figure 2**, respectively. The legal identification of the site, including lot and Deposited Plan (DP) numbers is provided in **Table 2.1**.

JBS&G (as JBS Environmental P/L) were engaged by UnitingCare in 2012 to complete a due diligence level Phase 1 ESA of the War Memorial Hospital Site. The results of the assessment have previously been presented in two documents:

- Due Diligence Assessment, War Memorial Hospital Site at 125 Birrell St, Waverley NSW. JBS, January 2013 (JBS 2013a); and
- War Memorial Hospital Due Diligence Assessment Results, JBS, 6 February 2013 (JBS 2013b).

The site is proposed to be redeveloped including expansion of the existing aged care / aged health services campus that would expand the hospital with additional aged care and independent living facilities, office space and areas for community services across the balance of the site. Further, there may be underground parking which will extend out from buildings under open spaces of the site.

The site is proposed to be redeveloped including expansion of the existing aged care / aged health services campus that would expand the hospital with the development of additional aged care and independent living facilities, office space and areas for community services across the balance of the site. Further, there may be underground parking which will extend out from buildings under open spaces of the site. At the time of the JBS (2013) assessment it was understood that Uniting was considering development of the site with additional aged care/ health services and the assessment was to assist early master planning of the site. The 2013 assessment area comprised an area of approximately 3 hectares (ha) comprising seven lots. The due diligence assessment included a desktop site assessment review, detailed site inspection, implementation of a soil sampling and analysis program for targeted contaminants of concern at 20 locations and subsequent comparison of contaminant concentrations with applicable site investigation. This density of site investigation locations comprised approximately 50 % of the minimum guideline density included in NSW (1995)<sup>2</sup>. On this basis, the scope of the completed investigation is considered to have comprised of a Phase 1 ESA with Limited Soil Sampling.

It is understood that since the previous 2013 assessment, several adjoining properties have been acquired and as such, Uniting require consideration of the adjoining lots in the context of the available site contamination data. It appears that seven additional lots have been added (121 Birrell St, 2, 4, 6 and 8 Church St and 162 and 164 Bronte Rd).

In addition, JBS&G note that since preparation of JBS (2013a), NSW EPA endorsed site assessment guidance, including site assessment criteria have been updated as NEPC (2013)<sup>3</sup>. To satisfy the preliminary requirements outlined by Waverley Council<sup>4</sup> (Council), it is necessary for the existing

<sup>&</sup>lt;sup>1</sup> National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 1999 (NEPC 1999).

<sup>&</sup>lt;sup>2</sup> Contaminated Sites: Sampling Design Guidelines, NSW Environment Protection Authority, 1995 (EPA 1995).

<sup>&</sup>lt;sup>3</sup> National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), National Environment Protection Council, 2013 (NEPC 2013).

<sup>&</sup>lt;sup>4</sup> As per email communications dated 20 June 2016.



data to be evaluated against the current regulatory framework and guidance such that the assessment meets the requirements of SEPP  $55^5$ .

updated guidelines to assess whether the previously identified contamination is still of concern with the revised guidelines.

Whilst it has been indicated by Council that it is sufficient to expand the coverage of the cottages to the existing contamination report, JBS&G recommend that given the absence of conclusions and recommendations in the original report, the requirement under EPA guidance to review the laboratory data in accordance with the updated assessment criteria (NEPC 2013) and increase the assessment footprint, that a new assessment report is prepared using the existing data. In the event that Council then request a review by an independent site auditor, the report will be immediately ready for review.

The investigation has been developed in accordance with NEPC (2013), guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

#### 1.2 Objective

The objectives of the investigation were to characterise potential contamination at the site and to draw preliminary conclusions regarding the suitability of the site for the proposed site, or make recommendations on future works required to enable such conclusions to be made.

#### 1.3 Scope of Works

The scope of work comprised:

- Desktop review of readily available relevant background and historical information including:
  - site conditions and environmental setting;
  - s.149 certificate(s) obtained from council (as per JBS 2013a records);
  - current and historical land title records (as per JBS 2013a records);
  - historical aerial photographs (as per JBS 2013a records);
  - heritage records held by the Department of Planning;
  - Dangerous Goods / Hazardous Chemicals database search by SafeWork NSW (as per JBS 2013 records);
  - records of environmental incidents or former environmental licenses as held by the EPA;
- Review of a previous geotechnical investigation provided by UnitingCare (DP 2005<sup>6</sup>).
- Detailed site inspection, including inspection of the additional 7 lots, to assess whether the areas of concern remain in a similar condition to that previously documented in JBS (2013a) and to document any new AECs in the additional lots.
- Evaluation of existing laboratory data of soil samples with the current health and ecological investigation/screening levels as presented in NEPC (2013) applicable for the proposed landuse(s).
- Preparation of an updated ESA report in general accordance with guidelines made or approved by the EPA.

<sup>&</sup>lt;sup>5</sup> State Environmental Planning Policy No 55—Remediation of Land (SEPP 55).

<sup>&</sup>lt;sup>6</sup> Geotechnical Investigation, Proposed Bronte Road Development, War Memorial Hospital, Waverley. Douglas Partners, Project 43539, November 2005 (DP 2005).



# 2. Site Conditions and Surrounding Environment

### 2.1 Site Identification

The location of the site is shown in **Figure 1**. The site details are summarised in **Table 2.1** and described in detail in the following sections.

Site Address	War Memorial Hospital, 125 Birrell Street, Waverley NSW 2024		
	Lots as per JBS 2013a:	Additional Lots:	
	Lot 1 DP172133	Lot 1 DP166786	
	Lot 1 DP948186	Lot 1 DP1115706	
	Lot 2 DP1061588	Lot 1 DP630460	
	Lot 3 DP667555	Lot 2 DP630460	
Lot / DP	Lot 1 DP1061548	Lot 1 DP1098550	
	Lot 2 DP1061548	Lot 2 DP1098550	
	Lot 1 DP567694	Lot 1 DP167332	
	Lot 3 DP593710	Lot A DP317831	
	Lot 4 DP593710	Lot 1 DP212655	
	Lot 7 DP948185	Lot 3 DP1098550	
	Lot B DP317831 (easement)		
Local Government Authority	Waverley Council		
Site Owner	Uniting Care		
Site Area	Approximately 3.4 ha		
Approximate Geographical	Easting: 338475		
Coordinates (MGA 56)	Northing: 6247858		
Zoning	R3 Medium Density Residential and SP2 Infrastructure		
Previous Land-use	Residential		
Current Land-use	Aged Care Hospital		
	Continued use as an Aged Care Hosp	Continued use as an Aged Care Hospital, some aged care and independent	
Proposed Use	living facilities, office space and areas for community services, and potential underground parking.		

#### Table 2.1: Summary Site Details

#### 2.2 Site Description

The revised site inspection was conducted on 12 July 2016. The site layout is shown in **Figure 2**. The site was generally in a similar condition to the 2012 site inspection. A photographic log of the site is provided in **Appendix B**.

The site comprised heritage listed buildings and grounds, with additional residential and medical service buildings. From the external inspection, the buildings appeared to be in good condition with no notable deterioration.

The site was bound on all sides by a variety of fencing types or building walls including brick, sandstone, wire chain and timber, with open gate access from all four streets surrounding the site.

Specific notes on each individual lot of the site as shown on Figure 2 are discussed following.

Lot 1 DP 172133 is located in the south-eastern portion of the site and was occupied by the Vickery Building. A contaminated waste storage area (dialysis waste) was observed to the west of the building and was located on asphalt, which appeared to be in good condition. The lot was also occupied with open space gardens and grassed areas to the west, the Chapel, former paint storage shed, former petrol storage area (Depot 2), part of the Morgan building and access roads. A grease trap, E.L.P storeroom and boiler room were located adjacent to the kitchen of the Morgan building. Inspection of the grease trap was not possible during the site inspection.

Lot 1 DP 567694 was occupied by the remainder of the Morgan Building in the south, bordered to the west by concrete and then a bituminous concrete paved carpark. The remainder of the Morgan building was characterised by ACM eaves which appeared to be in good condition and a



maintenance shed. Dangerous goods storage was evident within the maintenance shed including storage of small amounts of flammable liquid within appropriately signed and bunded storage cabinets on a concrete slab, which was observed to be in good condition, with no odours or staining observed in this area. The natural fall of the land along the southern boundary of Lot 1 was towards the west and the site had been levelled such that the ground level on site at the south west corner of the site was approximately 1.5 m higher than the level of the adjoining Church Street. The filled area was retained along Church Street by a stone wall, with a battered slope falling to the fence line along the western boundary in this area. A concrete paved carpark was located in the central portion of the lot with a garden material storage area (two stockpiles) located to the west of the car park. At the southwest corner of the lot, one mulch stockpile and one raised mound area were observed. A men's shed constructed from weatherboard cladding with eaves made of Asbestos Containing Materials (ACM) on a concrete slab was located in the northern portion of the lot. A tennis court, electric barbeque and residential units were located to the west of the garden shed.

Lot 1 DP 948186, Lot 2 DP 1061588 and Lot 3 DP667555 were occupied by administrative and hospital buildings, with some gardens and grassed areas between buildings. A pipe made of suspected ACM was located on the southern wall of the building in Lot 2 DP 1061588. The pipe appeared to be in good condition. A storage room was located next to the stairs of the basement level of the building in Lot 2 DP1061588, yet inspection was not available due to access restriction.

Lot 1 DP 1061588 contained the O'Reilly building and brick footings of a former structure. Suspected wall cladding board made of ACM were identified on the west of the building.

Lot 2 DP 1061548 was occupied by a residential building with a garden maintenance storage area at the rear. No odours or staining was observed in the storage area. Lot 7 DP 948185 comprised a residential building with a maintenance garage. The maintenance garage was constructed on a concrete slab that appeared to be in good condition, flammable liquid, toxic substances and pesticides were kept within a lockable cabinet within the garage. An abandoned oil container (20 L) and other rubbish were observed in a verge adjacent to the maintenance garage. Very minor staining of the slab was observed. No odours were observed.

Lot 4 DP 593710 was occupied by the Edina Hostel and Edina Nursing Home. Gardens and grassed areas were situated between buildings and a bituminous concrete paved carpark in the northern portion of the lot. A disused incinerator was located adjacent to the Edina Hostel. Some ash staining was noted on the concrete and face brick work above the incinerator. A maintenance office was located to the east of the incinerator. Edina Hospital was located at the south of Lot 4 DP 593710, and general waste and medical waste bins were located at the northwest corner of the hospital on an area of asphalt.

The additional lots in the updated master plan situated in the south-western corner of the site comprised low density residential properties. Front and rear yards were observed with a mixture of grassed, paved and concreted areas. The tenanted lots were generally well maintained. Some of the vacated lots were not maintained with overgrown lawns/plants in the yards. No internal access to the residential properties was available at the time of the site inspection.

No soil staining or odours were identified in accessible areas inspected during the site inspection. No stressed vegetation likely to be the result of contamination was observed during the site inspection. There was no evidence of flaking paint identified on the exterior of the buildings or ground surfaces around the building. Very minor staining on the concrete slab surface in the maintenance garage within Lot 7 DP948185 was observed.

A single suspected ACM fragment was identified (ACM01) on the ground surface within the eastern portion of the site during the previous inspection in 2012. The fragment was collected for sampling purposes as discussed in **Section 8.2.3**. Analytical results indicated the material did not contain asbestos. No other suspected ACM fragments were observed on the ground surface across the site



during this inspection. ACM was observed on a number of the buildings at the site in the form of pipes, eaves and cladding.

### 2.3 Surrounding Land-use

The current landuse of adjacent properties or properties across adjacent roads is shown in **Figure 2** and summarised below.

- North The site is bound to the north by residential properties and Birrell Street. Residential properties are also located further north beyond Birrell Street.
- East Residential properties, a church and Waverley College are located beyond Carrington Road to the east. Waverley Park is located approximately 300 m to the northeast.
- South The site is bound to the south by Church Street and to the southwest by the corner of Church Street and Bronte Road. Residential and commercial properties are located further south beyond Church Street.
- West The site is bound to the west by Bronte Road. Residential and commercial properties are located beyond Bronte Road.

### 2.4 Topography

Review of the regional topographic data (SIXMAPS<sup>7</sup>) indicated that the site has an elevation of between 90 and 100 m Australian Height Datum (AHD). The regional topography slopes gently to the southwest towards Willow Pond, located approximately 1.1 km from the site. To the east of the site the topography slopes gently down to the southeast towards the Tasman Sea, located approximately 1.7 km from the site. During the site inspection, the site was observed to gently slope to the west towards Bronte Road.

The localised topography of the site has been modified with apparent cut and fill to level areas to facilitate the construction of buildings, access roads, paths and landscaping areas. The general slope of the site falls to the west, consistent with the regional topography.

#### 2.5 Geology and Soil

Review of the regional geological map (DM 1966<sup>8</sup>) indicated the site is located on the boundary of an area of Quaternary alluvium and Hawkesbury Sandstone. Hawkesbury Sandstone of Triassic age consists of sandstone and quartz, with some shale. Alluvium consists of alluvial gravel, sand, silt and clay.

Review of the regional soil map (DLWC 2002<sup>9</sup>) indicated that the site is located within the Newport Aeolian Soil Landscape group. The typical Newport landscape is characterised by gently undulating plains to rolling rises of Holocene sands mantling other soil materials or bedrock. Newport soils are shallow, well sorted Silaceous sands, overlying moderately deep buried sands including Yellow Podzolic Soils with sandy topsoils on crests and gentle slopes; deep podsols on steep slopes, lower slopes and in depressions. Limitations of soil in the Newport group are the very high soil erosion hazard, localised steep slopes, very low soil fertility and non-cohesive topsoils.

Review of the previous investigation (DP 2005) identified fill material at the site to 0.5 m below ground surface (bgs) comprising silty sand and sandstone gravel with inclusions of gravel, ash and concrete pieces. Fill was underlain by silty sand or sand over extremely weathered to fresh sandstone.

<sup>&</sup>lt;sup>7</sup> NSW Government Spatial Information Exchange website, <u>https://maps.six.nsw.gov.au/</u> accessed 8 July 2016

<sup>&</sup>lt;sup>8</sup> Sydney 1:250 000 Geological Series Sheets S1 56-5(third edition). NSW Department of Mines, 1966 (DM 1966)

<sup>&</sup>lt;sup>9</sup> Sydney Soil Landscape Series Sheet 9130 (second edition). Department of Land and Water Conservation, 2002 (DLWC 2002).



## 2.6 Acid Sulfate Soils

Review of the Acid Sulfate Soil map from Australian Soil Resource Information System (ASRIS)<sup>10</sup> indicated there was extremely low probability of occurrence of Acid Sulfate Soils (ASS) in the proximity of the site. On this basis, no further consideration of ASS management is required.

### 2.7 Hydrology

The nearest surface water body is the Willow Pond located 1.1 km to the southwest of the site. The Tasman Sea is located approximately 1.7 km to the east of the site.

Infiltration of precipitation is expected to be minimal in sealed areas of the site, but is likely to occur in vegetated or grassed areas given the local sandy soils. Surface water accumulating after heavy or prolonged rainfall is likely to drain towards the southwest in line with the local topography, or be collected within the onsite stormwater infrastructure. Stormwater infrastructure onsite is believed to drain to the municipal systems in the surrounding roadways.

### 2.8 Hydrogeology

Review of registered groundwater bore information obtained from the NSW Office of Water (NOW) database identified five groundwater bores within a 1 km radius of the site. Details registered for these bores are included in **Appendix C**.

Groundwater bore GW107016 is located approximately 400 m to the northeast of the site. The bore was installed within Waverley Park and registered for recreation purposes. The bore was installed through sandy loam, sandstone and shale to 130 m bgs. Standing water level (SWL) was recorded at 21.60 m bgs. No details were provided regarding the groundwater quality.

Groundwater bore GW111553 is located approximately 900 m southwest of the site. The bore was installed on a private property and registered for domestic purposes. The bore was installed to a depth of 14 m bgs. No details were provided regarding groundwater depths or groundwater quality.

Groundwater bore GW110058 is located approximately 800 m to the southwest. The bore was installed on private property and registered for domestic purposes. The bore was installed to a depth of 8 m bgs. No details were provided regarding groundwater quality.

Groundwater bore GW107447 is located approximately 800 m southwest of the site. The bore was installed through sand to a depth of 8.24 m bgs. SWL was recorded at 5.49 m bgs. Groundwater salinity was recorded as good. No other details were provided regarding groundwater quality.

Groundwater bore GW106854 is located approximately 800 m southwest of the site. The bore was installed on a private property and registered for domestic purposes. The bore was installed through sand to a depth of 7 m bgs. No details regarding groundwater depths or groundwater quality were provided.

Free groundwater was not observed during the previous geotechnical investigation (DP 2005), although it was noted that the use of water as a flushing medium during coring precluded observations of groundwater.

Based on local topography, shallow groundwater flow is anticipated to be to the southwest towards Willow Pond, while the regional groundwater flow resident in sandstone bedrock at a significant depth below ground surface is likely to be to the east towards the coast.

<sup>&</sup>lt;sup>10</sup> Australian Soil Resource Information System, <u>http://www.asris.csiro.au/</u>, accessed 11 July 2016



# 3. Site History

### 3.1 Aerial Photograph

Copies of aerial photographs obtained from the Department of Lands are included in **Appendix D**. Relevant information from the aerial photograph review is summarised below.

**1930:** The image was of low resolution and contrast and details were difficult to discern. Three residential buildings were located in the current location of the Edina Hostel building. The central and northwest portions of the site comprised vegetated vacant land and gardens with a small residential property in the northwest portion of the site, along Birrell Street. The O'Reilly building was identified in the northeastern portion with an access road oriented in a north south direction providing access from Birrell Street. The Vickery building was present in the eastern portion of the site. Some small buildings or sheds were located to the east of the access road.

Residential properties were located to the north, east and west of the site. A school was located to the south of the site. A park with a water tower was located beyond the residential properties to the northeast of the site.

**1951:** The Morgan Building was identified within the southeastern portion of the site. What appeared to be a paved area was located to the west of the Vickery Building. Two buildings had been constructed within the northwest portion of the site, within the location of the current bituminous concrete carpark. Several buildings were also present in the northeastern portion of the site. An access road oriented in a north south direction off Church Street was located in the southern portion of the site. The current day residential houses in the south-western portion of the site appeared to have been constructed.

A square structure that appeared to be a water reservoir had been constructed to the west of the park, beyond the residential properties to the northeast of the site.

**1961:** Some vegetation within the central eastern portion of the site had been removed. The Morgan building had been extended to the south with two additional buildings. The remaining areas of the site appeared similar to the 1951 photograph.

The areas surrounding the site appeared similar to the previous photograph.

**1970:** Some vegetation within the central and western portions of the site had been removed and the Edina Nursing Home buildings had been constructed in the northwest portion of the site. The remaining areas of the site appeared similar to the previous photograph.

A new residential complex had been constructed and a bowling club established to the east of the site, along Birrell Street. The remaining areas surrounding the site appeared similar to the previous photograph.

**1978:** The building within the northwest portion of the site, along Birrell Street, had been removed. The three residential buildings located along the western site boundary had been demolished and the current Edina Hostel building had been constructed. The remaining areas of the site appeared similar to the previous photograph.

The areas surrounding the site appeared similar to the 1970 photograph.

**1986:** The current tennis court had been constructed within the central portion of the site. The remaining areas of the site appeared similar to the previous photograph.

The areas surrounding the site appeared similar to the previous photograph.

**1994:** A shed and a paved area had been constructed to the east of the tennis court and a residential complex constructed to the west. The remaining areas of the site appeared similar to the previous photograph.



The areas surrounding the site appeared similar to the previous photograph.

**2004:** Car parks had been constructed to the south of the tennis court and within the northeast portion of the site, along Birrell Road. The remaining areas of the site appeared similar to the previous photograph.

The areas surrounding the site appeared similar to the previous photograph.

## 3.2 Historical Land Titles

A summary of title documentation records relevant to this investigation is provided below. Copies of the title records are included in **Appendix E**.

## Lot 1 in DP172133

In 1922 the land had a group of owners including Methodist Ministers, Medical Practitioners, a Merchant, Manager and Estate Agents. In 1973 the land was transferred to Methodist Church (NSW) Property Trust. In 2007 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

### Lot 1 in DP948186, Lot 2 in DP1061588, Lot 3 in DP667555 and Lot 1 DP1061548

In 1915 the land was owned by Ebenezer Frank Vickery, a Solicitor of Sydney. In 1920 the land was transferred to a group of owners including Methodist Ministers, Medical Practitioners, a Merchant, Manager and Estate Agents. In 1926 and 1935 new Trustees were appointed under the Methodist Church Property Act. In 1973 the land was transferred to Methodist Church (NSW) Property Trust. In 2007 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

### Lot 2 in DP1061548

In 1915 the land was owned by Ebenezer Frank Vickery, a Solicitor of Sydney. In 1920 the land was transferred to the Methodist Missionary Society of Australasia Trust Association. In 1928 the land was transferred to a group of owners including Methodist Ministers, Medical Practitioners, a Merchant, Manager and Estate Agents. In 1935 new trustees were appointed under the Methodist Church Property Act. In 1973 the land was transferred to Methodist Church (NSW) Property Trust. In 2007 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

#### Lot 1 in DP567694

In 1907 the land was owned by Ebenezer Vickery of Waverley, a property owner. In 1916 the land was transferred to Ebenezer Frank Vickery, Kenneth Firth Vickery and Bessie Irene Hipsley. In 1930, 1935, 1942 and 1964, new trustees were appointed under the Methodist Church Property Act. In 1973 the land was transferred to the Methodist Church (NSW) Property Trust. In 2010 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

#### Lots 3 and 4 in DP593710 (Part formerly in V.4549 F.109)

In 1932 the land was owned by Heather Gladys Truda, wife of Giuseppe Joe Truda a Musician. In 1934 the land was transferred to a widow, Mary Sudakoff and then to James Thompson Steele Tate, a Teacher, in 1947. In 1972 the land was transferred to Methodist Church (NSW) Property Trust and then to the Uniting Church of Australia Property Trust (NSW) in 1978.

#### Lots 3 and 4 in DP593710 (Part formerly in V.6715 F.110)

In 1953 the land was owned by Alexander Charles Dermont, a Clerk. In 1954 the land was transferred to Ivy Mildred Rushbrooke, a widow. In 1967 the land was transferred to Jude Rushbrooke, a Proof Reader and Kenna Chubb Durst, a married woman. Later in 1967 the land was transferred to Tommass and Guiseppine Trihisoma, a builders labourer and his wife. In 1970 the land was transferred to Roy Mason Euston Glover, a Clerk and then to the Methodist Church (NSW) Property Trust in 1971.



#### Lots 3 and 4 in DP593710 (Part formerly in V.6715 F.111)

In 1953 the land was owned by Alexander Charles Dermont, a Clerk. In 1954 the land was transferred to Kathleen Rayall, a married woman and then to Dorathea Catherine Vickery a Spinster later that year. In 1972 the land was transferred to the Methodist Church (NSW) Property Trust and then to the Uniting Church of Australia Property Trust (NSW) in 1978.

#### Lots 3 and 4 in DP593710 (Part formerly in V.7813.F3)

In 1959 the land was owned by Lonnie Fred Fox, a Sandblaster and his wife. In 1971 the land was transferred to Josephine and John Dorahy, a married woman and a Clerk and then to Arthur Marshall, an Accountant in 1971. Later in 1971 the land was transferred to the Methodist Church (NSW) Property Trust and then to the Uniting Church of Australia Property Trust (NSW) in 1978.

#### Lots 3 and 4 in DP593710 (Part formerly V.9872 F.165)

In 1958 the land was owned by Mabel Roberts Foster, a Spinster and Mary Watterson Osborn, a Dentists wife. In 1971 the land was transferred to Winston Darcy O'Reilly, a Clerk, and in 1972 to the Methodist Church (NSW) Property Trust. In 1978 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

#### Lot 7 in DP94185

In 1915 the land was owned by Edith Margery Vickery, a Spinster and in 1928 the land was transferred to a group of owners including Methodist Ministers, Medical Practitioners, a Merchant, Manager and Estate Agents. In 1935 new trustees were appointed under the Methodist Church Property Act and in 1973 the land was transferred to the Methodist Church (NSW) Property Trust. In 2007 the land was transferred to the Uniting Church of Australia Property Trust (NSW).

#### 3.3 EPA Records

Search of the NSW Environmental Protection Authority (EPA) database was undertaken on 8 July 2016 (**Appendix F**) for the site and immediate surroundings. The search consisted of the:

- NSW EPA Protection of the Environment Act public register of licence, applications and notices (maintained under Section 308 of the Protection of the Environment Operations Act 1997 (POEO Act));
- NSW EPA contaminated land public register of record of notices (under Section 58 of the Contaminated Land Management Act 1997 (CLM Act)); and
- NSW contaminated sites notified to the EPA (under Section 60 of the CLM Act).

Results of the searches are discussed below.

#### POEO

A search of the EPA's public register under the *Protection of the Environment Operations Act 1997* was undertaken. The search identified that, for the site, there were no prevention, clean-up or prohibition notices.

Environment Protection Licence No. 6370 was held by South Eastern Sydney and Illawarra Area Health Service for the production and storage of up to 10 tonnes of clinical and related waste material. A licence variation was issued in 2005 (Notice No. 1044609) and allows for the generation and storage of clinical and related wastes. Copies of the licence and variation are included in **Appendix F**.

#### Section 58

No notices have been issued under Section 58 of the CLM Act for the site and immediate surroundings.



## Section 60

The site or adjacent properties are not on the list of NSW contaminated sites notified to the EPA under Section 60 of the CLM Act.

#### 3.4 Council Records

The zoning certificate for the site was obtained from Waverley Council, and is included in **Appendix G**. Relevant information is summarised below.

- The site is zoned SP2 Infrastructure and R3 Medium Density Residential.
- The land does not include or comprise critical habitat.
- The land is not in a heritage area.
- The land contains items of heritage (see Section 3.5).
- The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*.
- The land is not affected by a policy adopted by Council that restricts the development of land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).
- The land is not affected by a policy adopted by another public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council, that restricts the development of land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).
- The land is not subject to flood related development controls for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing).
- The land is not subject to flood related development controls.
- The land is not bush fire prone land.
- The land is not affected by any road widening proposal under Division 2 of Part 3 of the Roads Act, any Environmental Planning Instrument or any resolution of the Council.
- The land is not reserved for acquisition.
- The land is not a declared investigation area or remediation site, or the subject of an investigation order or remediation order under the *Contaminated Land Management (CLM) Act 1997*. The land is not the subject of a voluntary investigation or remediation proposal or a site audit statement within the meaning of the *CLM Act 1997*.

#### 3.5 Heritage Register

A search of the Australian Heritage Trust database and the NSW Heritage Inventory was undertaken for the site. Results from the searches are summarised below and details of heritage items are included as **Appendix H**.

#### Australian Heritage Register

Heritage items identified on the site includes a group of Victorian buildings and the Edina house.

#### NSW Heritage Register

Heritage items identified on the site includes the War Memorial Hospital Grounds and the War Memorial Hospital buildings.



Review of the heritage information indicates the buildings and grounds were constructed between 1880s and 1945. The site was originally the residence of the Vickery family who donated the property for use as a memorial hospital in 1919.

### 3.6 WorkCover Dangerous Goods Records

A search of records held by WorkCover indicated the presence of chemical and petroleum storage at the site, as summarised below. A copy of the records is provided as **Appendix I**.

- **1993:** A licence to store petrol, compressed air and medical oxygen at the site was approved. The licence indicated that the petrol was to be stored in a roofless store with a maximum storage capacity of 1000 L (5 x 200L drums). The licence indicated the typical quantity to be kept on site was 600 L. The plans show the storage depot for the petrol within the central eastern portion of the site, along Carrington Road.
- **2000:** The licence to keep the petrol on site was renewed by the War Memorial Hospital. The location of the storage depot was within a storage building in the eastern portion of the site.
- **2006:** A declaration of dangerous goods was submitted by the War Memorial Hospital for the site which included the storage of 600 L of petrol in addition to 500 L of chlorine. The plans indicated the chlorine was stored adjacent to the James Green building within the northwest portion of the site.

#### 3.7 Site History Summary

A summary of the site history is provided in **Table 3.1**.

Period	Activity	Source
1915	The northeastern portion of the site was owned by Ebenezer Frank Vickery, a Solicitor.	Title documentation
1920-1922	The eastern and northeastern portions of the site was owned by a group including Methodist Ministers, Medical practitioners, a Merchant, Manager and Estate Agents.	Title documentation
1930	Three residential buildings were located in the current location of the Edina Hostel Aerial photograph (193 building. The O'Reilly building was identified in the northeastern portion. The Vickery building was present in the eastern portion. Some small buildings or sheds were located to the east of the O'Reilly building.	
1951	The Morgan building had been constructed within the southeast portion of the site. Two buildings had been constructed within the northwest portion of the site, within the current location of the bituminous concrete carpark.	Aerial photograph (1951)
1961	Some vegetation within the central eastern portion of the site had been removed. The Morgan Building had been extended to the south with two additional buildings. The remaining areas of the site appeared similar to the previous photograph.	Aerial photograph (1961)
1970	Some vegetation within the central and western portions of the site had been removed and the Edina Nursing Home buildings had been constructed in the northwest portion of the site.	Aerial photograph (1970)
1973	The site was transferred to the Methodist Church (NSW) Property Trust	Title documentation
1978	The building within the northwest portion of the site, along Birrell Street, had been removed. The three residential buildings located along the western site boundary had been demolished and the current Edina Hostel building had been constructed.	Aerial photograph (1978) Title documentation
	Lots 3 and 4 DP 593710 (western portion of the site) were transferred to the Uniting Church of Australia Property Trust (NSW)	



Period	Activity	Source
1986	The Morgan Building had been further extended to the south with an additional building. The current tennis court had been constructed within the central portion of the site.	Aerial photograph (1986)
1993	War Memorial Hospital applied for a license to store petrol, compressed air and medical oxygen at the site.	WorkCover documentation
1994	A concrete area had been constructed to the east of the tennis court and a residential complex constructed to the west.	Aerial photograph (1994)
2000	License to store petrol onsite was renewed by the War Memorial Hospital.	WorkCover documentation
2004	Car parks had been constructed to the south of the tennis court and within the northeast portion of the site, along Birrell Road.	Aerial photograph (2004)
2006	A declaration of dangerous goods was submitted by the War Memorial Hospital for the site which included the storage of petrol and chlorine.	WorkCover documentation
2007-2010	Remaining areas of the site were transferred to the Uniting Church of Australia Property Trust (NSW)	Title documentation
2011-2016	The site continued to run as War Memorial Hospital, and acquired additional 7 lots (previously residential cottages) at the southwest corner along Church Street and Bronte Road	Aerial photographs from SIXMAPs

#### 3.8 Integrity Assessment

The information obtained from the historical sources reviewed has been found to be in general agreement and of a suitable quality. It is therefore considered that the information provided in this historical assessment has an acceptable level of accuracy.



# 4. Conceptual Site Model (CSM)

## 4.1 AECs & COPCs

Based on the history review and observations of the site, AECs and associated COPCs have been identified and are presented in **Table 4.1**.

### Table 4.1 Areas of Environmental Concern and Associated Contaminants of Potential Concern

Area of Environmental Concern	Contaminants of Potential Concern
Fill material observed across the site including ash and slag	Heavy metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn), TRH/BTEX, PAHs, OCP/OPPs, PCBs and asbestos
Hazardous materials impacts associated with presence and demolition of former buildings in the northern and western portions of the site	Lead and asbestos
Paint and petrol storage shed in the eastern portion	TRH/BTEXN, PAHs and lead
Grease trap within the southeastern portion of the site	TRH/BTEX and PAHs
Former incinerator in the northwestern portion	Heavy metals, TRH/BTEX, PAHs, OCPs and asbestos
Garden/Maintenance shed and garden material storage area	Heavy metals, TRH/BTEX, PAHs, OCP/OPPs and PCBs

### 4.2 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- potential fill material observed across the site;
- natural soils;
- groundwater; and
- soil vapour.

Fill material may have been imported to the site from unknown sources to create current ground surface levels, and as such is identified as a potentially contaminated medium.

In addition, surface soils (whether fill material or natural soils) are a potentially contaminated medium based on the historical uses of the site for residential and hospital purposes, including the above mentioned (**Table 4.1**) facilities and infrastructure.

Based on the potential leachability of the contaminants within fill material, and the historical site use, vertical migration of contamination from the fill material or surface soil into the underlying soils may have occurred where surface soils or fill is found to be significantly impacted.

The potential for groundwater to be a contaminated medium is moderate based on the historical storage of petrol, in ground grease trap and other chemicals at the site, the sandy soils and potential for shallow groundwater. However, the potential for groundwater to be contaminated is dependent upon the mobility of soil contamination identified at the site.

The potential for surface water to be a contaminated medium is low based on the absence of surface water on the site, and the absence of significant sources of potential contamination identified.

Similar to groundwater, should soil impacts be identified, the potential for soil vapour as a contaminated media may require further consideration.

#### 4.3 Potential Receptors

Potential human and ecological receptors or on near the site include:

• Site occupants, workers and visitors;



- Maintenance / construction workers, including subsurface works;
- Flora and fauna on the site; and
- The freshwater ecosystem of Willow Pond located hydro-geologically downgradient of the site.

## 4.4 Potential Exposure Pathways

Based on the COPCs identified in soil, groundwater and soil vapour, the potential exposure pathways for the site include:

- Oral and dermal pathways from impacted soils and groundwater (either through beneficial groundwater re-use or made accessible via excavation).
- Inhalation of airborne contaminants (including airborne asbestos fibres).
- Inhalation of vapours migrating from impacted soils and groundwater.
- Contaminant uptake via vegetation (flora) or bioaccumulation within fauna.

## 4.5 Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified during of the site history review are generally in either a solid form (e.g. asbestos) or liquid form (e.g. petroleum hydrocarbons).

As the site is predominantly sealed with roads, buildings or vegetation, the potential for migration of contaminants from the site via windblown dust is low.

The potential for contaminants to migrate via surface water runoff is low due to the absence of any significant source of contamination identified, the sealed nature of a large portion of the site and the absence of a permanent water body across the site.

The potential for migration of contaminants via groundwater is low based on the absence of significant potential sources of contamination identified at the site. However, in the event that significant soil contamination is identified, the potential for groundwater contamination will need to be reassessed.

## 4.6 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPC as either liquids or gasses.

Man-made preferential pathways are present on the site, generally associated with potential fill materials and underground service infrastructure which may act as preferential pathways for mobile liquid and vapour contaminants.



# 5. Sampling and Analysis Plan

## 5.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the contamination assessment, as discussed in the following sections.

### 5.1.1 State the Problem

Uniting is assessing the re-development potential of the site and an updated Phase 1 ESA is required to support the master planning of the site.

### 5.1.2 Identify the Decision

Based on the decision making process for assessing urban redevelopment sites detailed in DEC (2006), the following decisions are required to be made:

- Are there any unacceptable risks to likely future onsite receptors from soil?
- Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

#### 5.1.3 Identify Inputs to the Decision

Inputs to the decisions were:

- Detailed site inspections (2012 and 2016);
- Soil environmental data collected by soil sampling and laboratory analysis;
- Soil criteria based on the proposed land use; and
- Confirmation that data generated by sample analysis were of an acceptable quality to allow reliable comparison to assessment criteria by assessment of quality assurance / quality control as per the data quality indicators established in **Section 5.2.**

#### 5.1.4 Define the Study Boundaries

The approximate site boundary is located at 125 Birrell Street, Waverley, NSW, as shown in **Figure 2**. The site is legally described as per the Lot details provided in **Table 2.1**. The study targeted the potential contamination issues identified in the CSM.

The vertical extent of the soil investigation completed part of JBS&G (2013a) was to 1.1 m bgs which extended into natural sands below fill material at some sampling locations.

Due to the nature of potential contaminants identified, seasonality was not assessed as part of this investigation. The initial study including a detailed site inspection and soil sampling was conducted in December 2012 with an additional detailed site inspection of the extended site area completed in July 2016.

#### 5.1.5 Develop a Decision Rule

The decision rules adopted to answer the decisions identified in **Section 5.1.2** are summarised in **Table 5.1**.



### Table 5.1: Summary of Decision Rules

Decision Required to be Made	Decision Rule
Are there any unacceptable risks to likely future receptors from impacted soil?	Soil analytical data was compared against appropriate land use scenario criteria derived from NSW EPA endorsed NEPC (2013).
	Statistical analyses of the data in accordance with relevant guidance documents were undertaken, if appropriate, to facilitate the decisions. The following statistical criteria were adopted with respect to soils:
	Either: the reported concentrations were all below the site criteria;
	Or: the 95% upper confidence limit (UCL) of the average concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the site criterion.
	If the statistical criteria stated above were satisfied, the decision was No.
	If the statistical criteria were not satisfied, the decision was Yes.
Are there any issues relating to the local area background soil concentrations that exceed	Analytical data in natural soil samples were compared to the background levels for urban areas of NSW as described in NEPC 2013.
appropriate soil criteria?	If the 95% UCL of surface soils exceeded published background concentrations (NEPC 2013), the decision was Yes.
	Otherwise, the decision was No.
Are there any chemical mixture?	Were there more than one group of contaminants present which increase the risk of harm?
	If there was, the decision was Yes.
	Otherwise, the decision was No.
Are there any significant aesthetic concerns from impacted soils present at the site?	Were significant odour or other aesthetic issues identified during the soil assessment?
	If yes, the decision was Yes.
	Otherwise, the decision was No.
Is there any evidence of, or potential for, migration of contaminants from the site?	Based on the assessment results was there any evidence of, or potential for, migration of contaminants from the site?
	If there was potential for unacceptable contaminant concentrations to migrate, the decision was Yes.
	Otherwise, the decision was No.
Is a site management strategy required?	Was the answer to any of the decisions Yes?
	If yes, a site management strategy was required.
	If no, a site management strategy was not required.

#### 5.1.6 Specify Limits of Decision Error

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits with respect to the limits of decision error adopted for this project have been implemented in accordance with the appropriate guidance from NEPC (2013), appropriate data quality indicators (DQIs) used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against predetermined Data Quality Indicators (DQIs).

The pre-determined DQIs established for the project are discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters), and are shown in **Table 5.2**.



- **Precision** measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- Accuracy measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- Comparability expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** expresses the appropriateness of the chosen field and laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Data Quality Indicator	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra laboratory)	1 / 20 samples	<50% RPD1
Blind triplicates (inter laboratory)	1 / 20 samples	<50% RPD1
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	-	-
Samples extracted and analysed within holding times.	-	organics (7 to 14 days), inorganics (28 days to 6 months)
Trip spike	1 per sampling batch	70-130% recovery
Trip blank	1 per sampling batch	<lor< td=""></lor<>
Rinsate	1 per sampling batch with reusable sampling equipment	<lor< td=""></lor<>
Laboratory Blanks	1 per analytical method	<lor< td=""></lor<>
Comparability		

#### Table 5.2: Summary of Quality Assurance / Quality Control Program



Frequency	Data Quality Criteria
All samples	All samples
All samples	All samples
All samples	All samples
All QA/QC samples	-
-	Critical samples valid
All samples	LOR < adopted site criteria (where possible)
	All samples   All samples

1 Relative percent difference (RPD)

If any of the DQIs are not met, further assessment will be necessary to determine whether the nonconformance will significantly affect the usefulness of the data. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data.

A qualitative assessment of compliance with standard procures and appropriate sample collection methods will be completed during the DQI compliance assessment.

## 5.1.7 Optimise the Design for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in EPA 1995<sup>11</sup>, including judgemental, random, systematic and stratified sampling patterns.

Sampling locations were generally systematic across the site, although skewed towards identified AECs.

For characterisation of a 3 ha site, EPA (1995) recommends the collection of samples from 40 gridbased locations. Given the JBS (2013) assessment was being conducted for due diligence purposes, a sampling density at half the rate from EPA (1995) was considered appropriate to characterise potential contamination at the site, enabling preliminary conclusions to be drawn on the suitability of the site for the proposed use.

#### 5.2 Soil Sampling Methodology

Soil samples were collected from boreholes advanced using a hand auger. Samples were generally collected from soils at the surface (0-0.1 m), subsurface (0.2-0.3 m, 0.4-0.5 m, and then at 0.5 m intervals or changes in geology until termination). Where possible, boreholes were extended 0.3 m in natural soils.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted on the bore logs (**Appendix J**). Collected soil samples were immediately transferred to laboratory supplied sample containers. The sample containers were labelled, sealed and transferred to a chilled esky for sample preservation prior to and during shipment. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory.

<sup>&</sup>lt;sup>11</sup> Sampling Design Guidelines. NSW EPA. September 1995. (EPA 1995)



Samples were analysed in accordance with the analytical schedule in Table 5.3.

### 5.3 Laboratory Analysis

JBS&G contracted a NATA certified laboratory Envirolab Services Pty Ltd (Envirolab) as the primary laboratory for the required analyses. The secondary laboratories for the works were ALS Global (ALS) and Pickford & Rhyder (for asbestos only). All laboratories were NATA registered for the required analyses. In addition, the laboratories were required to meet JBS&G's internal QA/QC requirements. Laboratory analysis of samples was conducted as summarised in **Table 5.3**.

Sample Media	No. Sample Locations	Analyses (exc. QA/QC)
Soil	(HA01- HA20)	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 25 samples
		TRH – 9 samples
		BTEX – 9 samples
		PAHs – 12 samples
		OCP/OPPs – 7 samples
		PCBs – 7 samples
		Asbestos – 7 samples
		ASLP (PAHs) – 3
		ASLP (heavy metals) - 2

Table 5.3:	Sampling	and Analy	tical Prog	ram
	• • • • • • • • • • • • • • • • • • •			



## 6. Assessment Criteria

#### 6.1 Regulatory Guidelines

Development of site assessment criteria and the associated scope of investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), National Environment Protection Council (NEPC 2013);
- Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995);
- Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, NSW OEH, 2011 (OEH 2011);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme*, 2nd Edition, NSW EPA, 2006 (DEC 2006);
- Contaminated Sites: Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997 (as amended 2015), NSW Environment Protection Authority (EPA 2015);
- *CRCCARE Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater,* 2011, Friebel and Nadebaum (CRCCARE 2011).

#### 6.2 Soil Assessment Criteria

An aged care facility and hospital represents a scenario that does not fall under the standard health investigation land use scenarios presented in NEPM (2013). Schedule B7 of NEPM (2013) states "the HILs developed for the commercial/industrial land use scenario are not applicable to a site used frequently by more sensitive groups such as children (within childcare centres, hospitals and hotels) and the elderly (within hospitals, aged care facilities and hospices)." Given that elderly and other sensitive sub-populations (such as patients with immunosuppression and pre-existing illness) are frequent users of the site, a more sensitive land use scenario is required to be adopted. In addition, the proposed redevelopment includes maintenance of existing and additional turfed, landscaped and green areas / corridors. To this extent, the following soil assessment criteria have been adopted as appropriate for the identified future proposed land uses:

- Health Investigation Levels (HILs) for residential with minimum opportunities for soil access – HIL-B (NEPC 2013);
- HILs for public open spaces such as parks, playgrounds, ovals, and footpaths HIL-C (NEPC 2013);
- Health Screening Levels (HSLs) for petroleum hydrocarbons considering potential for vapour intrusion, sand for low to high density residential HSL A & HSL B (NEPC 2013);
- HSLs for petroleum hydrocarbons considering potential for vapour intrusion, sand for recreational / open space HSL C (NEPC 2013);
- HSLs for concentrations of asbestos in soil for residential with minimum opportunities for soil access (HSL-B) and public open space (HSL-C) (NEPC 2013);
- Management limits for hydrocarbons for urban residential and public open space land use coarse grained soil (NEPC 2013);
- Generic ecological investigation levels (EILs) based on NEPC (2013) for urban residential and public open space; and



• Ecological Screening Levels (ESLs) for TRH fractions, BTEX and benzo(a)pyrene in coarse grained soil for urban residential and public open space land use (NEPC 2013).

Where no criteria are present for a contaminant, the laboratory limit of reporting (LOR) has been used as an initial screening criteria.

It is noted that the most conservative ecological investigation and screening levels have been adopted given the current absence of NEPC (2013) soil characteristic data.

The site assessment criteria are presented in **Table A**, **Appendix A**.



# 7. Quality Assurance/Quality Control

## 7.1 QA/QC Results

The QA/QC results are summarised in **Table 7.1** and discussed in **Section 7.2** below. Detailed QA/QC data is included in the laboratory documentation provided in **Appendix K**.

Data Quality Indicator	Results	DQI Met?
Precision		
Soil Blind duplicates (intra laboratory)	0-114% RPD	Partial <sup>1</sup>
	The primary and duplicate samples targeting asbestos were in agreement.	
	Duplicate samples were analysed at a rate above 1/20 primary samples.	
Soil Blind triplicates (inter laboratory)	0-93% RPD	Partial <sup>1</sup>
	The primary and triplicate samples targeting asbestos were not in agreement.	
	Triplicate samples were analysed at a rate above 1/20 primary samples	
Accuracy		
Surrogate spikes	79 - 121% recovery	Yes
	Surrogate spikes were completed for all organic samples.	
Laboratory control samples	<lor< td=""><td>Yes</td></lor<>	Yes
Matrix spikes	78 - 137% recovery	Partial <sup>1</sup>
	At least 1 matrix spike recovery was completed for each batch of samples.	
Representativeness		
Sampling appropriate for media and analytes	All sampling conducted in accordance with JBS procedures, consistent with NEPC (1999) guidance in force at the time of the works.	Yes
Laboratory blanks	<lor< td=""><td>Yes</td></lor<>	Yes
Samples extracted and analysed within holding times.	All samples were extracted and analysed within holding times with the exception of PAH analysis for 3 samples which were 7 days out of holding time	Partial <sup>1</sup>
Trip spike	103-113%	Yes
	1 trip spike accompanied soil samples	
Trip blank	Trip blank was damaged during shipment of the samples to the laboratory and unable to be analysed.	Partial <sup>1</sup>
Comparability		
Standard operating procedures for sample collection & handling	Field staff used same standard operating procedures throughout works.	Yes
Standard analytical methods used for all analyses	Standard analytical methods were used.	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted using standard operating procedures in the same conditions throughout the works. The laboratory remained consistent throughout the investigation.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate	Yes
Completeness		

#### Table 7.1: QA/QC Results Summary



Sample description and COCs completed and appropriate	All borehole logs and COCs were completed appropriately.	Yes
Appropriate documentation	Field documentation was appropriately completed.	Yes
Satisfactory frequency and result for QC samples	All frequency and results for QA/QC were generally satisfactory	Partial <sup>1</sup>
Data from critical samples is considered valid	Data from critical samples is considered valid.	Yes
Sensitivity		
Field and analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	Appropriate laboratory analysis methods and detection limits were considered to have been achieved to the extent practicable during the field and laboratory phases of this investigation.	Yes

Notes: 1 See discussion of DQI exceedances

### 7.2 QA/QC Discussion

#### 7.2.1 Precision

Field duplicates had relative percentage differences (RPDs) generally within the acceptable range of less than 50%, with the following exceptions:

- TRH C<sub>10</sub>-C<sub>36</sub>, benzo(a)pyrene and total PAHs in duplicate pair QC01 and HA03 0-0.1 with RPDs of 114%, 82% and 92%, respectively.
- TRH C<sub>10</sub>-C<sub>36</sub> and total PAHs in triplicate pair QC01A and HA03 0-0.1 with RPDs of 93% and 65%, respectively.

The elevated RPDs reported are attributed to the heterogeneous nature of the sandy fill material present at the site, where contaminants may bind preferentially to certain components of the fill material. The RPDs for TRH  $C_{10}$ - $C_{36}$  and total PAHs may also be artificially elevated by the cumulative effect of fraction additions.

As a conservative measure the highest reported values have been adopted during evaluation of the data.

## 7.2.2 Accuracy

One matrix spike sample was completed for the batch of samples (1 per 25 samples). Matrix spike recoveries were generally within the acceptable range of 70-130% for all analytes with the exception of PAHs which reported a matrix spike recovery slightly higher than the acceptable range for Chrysene (137%). Some matrix spike recoveries for PAHs could not be reported at all due to the high concentration of analytes in the primary sample (HA03 0-0.1) causing matrix interferences.

The absence of matrix spike recoveries for same analytes is considered not to significantly impact upon the conclusions of the accuracy of the assessment, as acceptable recoveries for laboratory control samples indicate that the soil analytical data are of an acceptable quality to achieve the objectives of the investigation.

#### 7.2.3 Representativeness

The trip blank was damaged during shipment to the laboratory and could not be analysed. Given the trip spike recovery was within the acceptable range, and the rinsate sample which accompanied the samples to the laboratory reported analytes below the LOR, the absence of a trip blank does not significantly impact on the representativeness of the data or the ability to be confident in the validity of the data obtained for use in this assessment.

On receipt of laboratory results indicating elevated PAH concentrations from some surface soil samples, selected sub-surface soil samples were then submitted for analysis to assess the extent of the contamination through the soil profile. Consequently, three samples from Batch 83208 were 7



days outside of the recommended holding time. It is noted that the elevated PAH compounds were generally present at the non-volatile extent of the PAH compound range and as such, given the samples were appropriately stored at the laboratory until analysed, there is unlikely to have been significant decline in reported concentrations. However, as a conservative measure the potential for slightly decreased PAH concentrations in these additional delineation samples has been taken into consideration during the assessment of the analytical results.

## 7.2.4 Comparability

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods.

All field works and sampling were undertaken by one experienced JBS&G field scientist.

The laboratory LORs were consistent and are considered appropriate.

## 7.2.5 Completeness

Samples were generally transported under full chain of custody (COC) documentation. The COC documentation was completed correctly and the selected analyses were correctly conducted.

All field documentation was completed appropriately and were correct.

The frequency of analysis and result for all QC samples are appropriate.

## 7.2.6 Sensitivity

The adopted analytical methods generally provided suitable LORs with respect to the adopted site assessment criteria.

### 7.3 QA/QC Conclusion

The field sampling and handling procedures produced QA/QC results which indicate that the soil data are of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

On the basis of the results of the field and laboratory QA/QC program, the soil data are of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.



# 8. Soil Results

## 8.1 Soil Field Observations

Geology encountered at the site during this investigation is summarised below. Borelogs are included as **Appendix J**.

During the investigation fill material was identified across the site from 0.3 to 1.1 m bgs. Natural material was encountered from 0.3 to 0.75 m bgs at three locations across the site and generally comprised fine to medium grained sand. Elsewhere, drilling was terminated on obstructions in the fill material. The fill material generally comprised silty sand with inclusions of plant matter, ash, slag, tile fragments, concrete and sandstone gravels.

Slight hydrocarbon odours were identified in sub-surface fill material at sample location HA18 adjacent to the incinerator in the north-western portion. There was no other evidence of staining or odours in the fill.

A single suspected ACM fragment was identified (ACM01) on the ground surface within the eastern portion of the site. The fragment was collected for sampling purposes as discussed in **Section 8.2.5**. No other suspected ACM fragments were observed on the ground surface across the site.

No groundwater seepage was reported during the investigation to a maximum depth of 1.1 m bgs.

## 8.2 Soil Analytical Results

The soil sampling locations are shown on **Figure 3**. Health soil criteria exceedances are shown on **Figure 4**. Summarised soil analytical results are presented in **Table A**. Summarised soil leachate results are presented in **Table B**. Detailed laboratory documentation is provided in **Appendix K**. 95% Upper Confidence Limit (UCL) statistical calculations are presented in **Appendix L**. The soil analytical results are discussed in the following sections.

## 8.2.1 Metals

## HIL-B – Residential with Minimal Soil Access

Concentrations of lead in soil samples selected for analysis exceeded the HIL-B criteria of 1200 mg/kg in fill material at three sample locations, HA11 0-0.1, HA12 0-0.1 and HA15 0-0.1, with concentrations ranging from 1300 to 1500 mg/kg.

The sample lead population was statistically assessed using methodologies described in **Section 5** to generate a 95% UCL of the arithmetic mean as presented in **Appendix L**. Statistical assessment of the results identified that no individual analtyc concentration exceeded 250% of the adopted site criterion, the standard deviation of the results was less than 50% of the site criterion and the 95% UCL value was reported as 604.3 mg/kg, which is less than the adopted HIL-B criterion of 1200 mg/kg. On this basis, lead concentrations as a population were considered to have met the HIL-B criterion.

Concentrations of heavy metals in other soil samples selected for analysis were all less than the HIL-B criteria.

## HIL-C – Public Open Space

Concentrations of lead in soil samples selected for analysis exceeded the HIL-C criteria of 600 mg/kg in fill material at four sample locations, HA06 0-0.1, HA11 0-0.1, HA12 0-0.1, HA12 0.2-0.3 and HA15 0-0.1, with concentrations ranging from 740 to 1500 mg/kg.

Concentrations of heavy metals in other soil samples selected for analysis were all less than the HIL-C criteria.



## EIL

Concentrations of copper in soil samples selected for analysis exceeded the EIL criterion of 60 mg/kg in seven locations with concentrations ranging from 62 to 140 mg/kg. The 95% UCL of copper was calculated at 60.45 mg/kg, slightly exceeding the EIL.

Concentrations of zinc in all soil samples selected for analysis exceeded the EIL criterion of 70 mg/kg with concentrations ranging from 76 to 340 mg/kg.

Concentrations of lead in three soil samples selected for analysis exceeded the EIL criterion of 1100 mg/kg, however, the calculated 95% UCL is less than the adopted EIL criterion. On this basis, lead concentrations as a population were considered to have met the EIL criterion.

Concentrations of heavy metals in other soil samples selected for analysis were all less than the EIL criteria.

#### Leachate

Neutral leachate tests for heavy metals were conducted on shallow soil samples from HA11, HA12 and HA15 based on the initial results. The results of the leachate analysis indicate that minor amounts of lead (up to 0.033 mg/L) are leachable under neutral conditions.

#### 8.2.2 PAHs

#### HIL-B – Residential with Minimal Soil Access

Carcinogenic PAHs (as BaP TEQ) concentrations were reported above the HIL-B criterion (4 mg/kg) in three sample locations, HA05 0-0.1 (6.99 mg/kg), HA03 0.2-0.3 (5.477 mg/kg) and HA11 0-0.1 (9.74 mg/kg). The 95% UCL of Carcinogenic PAHs (as BaP TEQ) was calculated at 5.898 mg/kg, which exceeds the HIL-B criteria. In addition, the SD was calculated at greater than 50% of the adopted criteria.

Concentrations of total PAHs in the soil samples selected for analysis were all less than the site assessment criteria.

#### HIL-C – Public Open Space

Carcinogenic PAHs (as BaP TEQ) concentrations were reported above the HIL-C criterion (3 mg/kg) in three sample locations, HA05 0-0.1 (6.99 mg/kg), HA05 0.2-0.3 (3.04 mg/kg), HA11 0-0.1 (9.74 mg/kg), HA03 0-0.1 (3.869 mg/kg) and HA03 0.2-0.3 (5.477 mg/kg).

The concentration of carcinogenic PAHs (as BaP TEQ) location HA11 0-0.1 (9.74mg) exceeded the adopted HIL-C criteria of 3 mg/kg by greater than 250% and therefore 95% UCL statistics could not be applied to this data population.

Concentrations of total PAHs in the soil samples selected for analysis were all less than the site assessment criteria.

#### ESL

The concentration of benzo(a)pyrene in the soil samples selected for analyses exceeded the ESL (0.7 mg/kg) in seven sample locations ranging in concentration from 0.87 to 7.7 mg/kg.

Concentrations of naphthalene in the soil samples selected for analysis were all less than the site ESL criteria.



### Leachate

Neutral leachate tests for PAHs were conducted on shallow soil samples from HA03, HA05 and HA11 based on the initial results. The results of the leachate analysis indicated that PAHs are unlikely to significantly leach under neutral conditions.

## 8.2.3 Asbestos

The concentration of asbestos in the soil samples selected for analyses were all less than the LOR of 0.1 g/kg. No asbestos was observed in the material observed during soil sampling. No asbestos was detected within ACM01 (the suspected ACM fragment) by the laboratory.

#### 8.2.4 TRH

The concentration of TRH in the soil samples selected for analyses were all less than the health site assessment criteria.

The concentration of TRH > $C_{16}$ - $C_{34}$  in HA11 0-0.1 (430 mg/kg) and its duplicate QC01 (350 mg/kg), exceeded the adopted ESL criterion of 300 mg/kg.

The sample TRH >C<sub>16</sub>-C<sub>34</sub> population was statistically assessed using methodologies described in **Section 5** to generate a 95% UCL of the arithmetic mean as presented in **Appendix L**. Statistical assessment of the results identified that no individual analtye concentration exceeded 250% of the adopted site criterion, the standard deviation of the results was less than 50% of the site criterion and the 95% UCL value was reported as 266.3 mg/kg, which is less than the adopted ESL criterion of 300 mg/kg. On this basis, TRH >C<sub>16</sub>-C<sub>34</sub> concentrations as a population were considered to have met the ESL criterion.

### 8.2.5 BTEX

The concentration of BTEX in the soil samples selected for analyses were all less than the site assessment criteria and below the LOR.

## 8.2.6 OCPs

The concentration of OCPs in the soil samples selected for analyses were all less than the site assessment criteria and below the LOR.

#### 8.2.7 OPPs

The concentration of OPPs in the soil samples selected for analyses were all less than the site assessment criteria and below the LOR.

#### 8.2.8 PCBs

The concentration of PCBs in the soil samples selected for analyses were all less than the site assessment criteria and generally below the LOR.



# 9. Discussion

## 9.1 Are there any unacceptable risks to likely future receptors from impacted soil?

Elevated concentrations of heavy metals and PAHs identified in fill material at sampling locations as shown on **Figure 3** and **Figure 4** appear to be associated with ash and slag inclusions in the fill material identified across the majority of the site. Based on the current preliminary soils assessment, elevated concentrations of lead, copper, zinc and carcinogenic PAHs as BaP TEQ and B(a)P in soil are considered to pose a potential risk to human or ecological receptors under a residential with minimal access land use and/or recreational land use.

It is noted that no soil characterisation data has been collected during this preliminary investigation that allows for the derivation of site specific EILs and thus the EILs adopted in this assessment are considered likely to be conservative. Future additional investigations targeted to areas of proposed landscaping may reduce the extent of material required to be managed.

Concentrations of other COPCs identified in the CSM for the site are considered not to pose a risk under the land use scenarios assessed. Asbestos was not identified on the ground surface or within fill material sampling locations completed at the site. It is noted that ACM has been identified within existing buildings/structures that will require management if these are to be demolished or refurbished.

## 9.2 Are there any issues relating to the local area background soil concentrations?

Background soil samples were not analysed as part of the current investigation. Future additional investigations should target background soil concentrations to confirm there are no issues relating to local area background soil concentrations.

### 9.3 Are there any impacts from chemical mixtures?

There were no potential chemical mixtures identified during the investigation that may pose an unacceptable contamination risk at the site with respect to future site users.

## 9.4 Are there any aesthetic concerns?

Minor hydrocarbon odours were identified within fill material at sample location HA18 located adjacent to the disused incinerator. The odours were only identified when in close proximity of the soil, and were not identifiable at the ground surface. Based on this, the identified odour does not present an unacceptable aesthetic issue at the site.

There were no other potential aesthetic issues identified during the preliminary site assessment.

## 9.5 Is there any evidence of, or potential for, migration of contaminants from the site?

The potential for migration of contaminants from the site is considered to be low based upon the absence of significant surface soil contamination and sealed or well vegetated nature of the surface of the site.

Leachate testing indicated that PAHs were not significantly leachable and lead had only a minor potential for leaching under neutral conditions. Given the potential volume of lead impacted fill present at the site, and the concentrations of lead which, while above the HILs, was not particularly high, the potential for migration of lead from fill to groundwater and then offsite is low.



#### 9.6 Is a site management strategy required?

Based on the scope of works completed, including the preliminarily nature of the soils assessment, and the limitations presented in **Section 12**, remediation or management of the identified heavy metal and PAH impact will be required to make the site suitable for its proposed use.

Further assessment is required to determine the extent of heavy metal and PAHs impacted fill materials and to draw further conclusions on the suitability of the site for its proposed use.


### **10.** Conclusions and Recommendations

### 10.1 Conclusions

Based on the findings of this assessment and subject to the limitations in **Section 11**, the following conclusions are provided:

- The main portion of the site is understood to have been owned by the Vickery family from 1866 until 1919, when the property was gifted to the Methodist Church for use as a hospital, which continues to the current day. Former residential lots bordering the main portion of the site have gradually been acquired for incorporation into the currently defined site extent.
- A limited site sampling program was implemented in 2012, inclusive of 20 sampling locations. Fill materials generally comprising silty sand with inclusions of ash, slag, tiles, concrete and sandstone gravels were observed to depths ranging from 0.3 to 1.1 m bgs, although some locations did not penetrate the depth of fill material due to obstructions. Natural sands were encountered at three locations at depth ranging from 0.35 to 0.75 m bgs.
- Lead concentrations in fill material in some areas of the site have been identified to represent a potentially unacceptable risk to human receptors under the proposed land use scenario and copper and zinc concentrations in fill material have been identified to represent a potentially unacceptable risk to ecological receptors.
- PAHs including carcinogenic PAHs (as BaP TEQ) concentrations in fill material in some areas of the site have been identified to represent a potentially unacceptable risk to human receptors under the proposed land use scenario and B(a)P concentrations in fill material in some areas of the site represents a potentially unacceptable risk to ecological receptors.
- Concentrations of remaining COPCs, including asbestos, were identified at soil sampling locations to be present at concentrations less than the adopted site assessment criteria.
- No chemical mixtures, aesthetic issues or significant offsite migration risks were identified.
- Whilst areas of near surface fill material have been identified at the site as being impacted with heavy metals and PAHs to varying extent as a result of past land uses, the scale and extent of the identified impact is not such that common remediation and/or management techniques could not render the site suitable for the future proposed uses. As such, the potential for contamination to occur at the site is considered not to represent a significant barrier to future development of the site.

### 10.2 Recommendations

The following recommendations are made in light of the conclusions:

- Further detailed site investigation be undertaken in accordance with NSW EPA guidance once a detailed development proposal has been designed for the site such that the nature and scale of the investigation may be targeted toward areas of proposed ground disturbance and the most sensitive land uses including landscaped areas to provide appropriate data to draw specific conclusions in relation to the suitability of the site with respect to the anticipated exposure scenarios.
- Subject to the outcome of the detailed investigation activities a remedial/management strategy will be developed to address requirements for management of unacceptable soil contamination risks prior to or during future development activities such that the site (or site portion) may be considered suitable for proposed future use.



- The detailed site assessment reports and, if required, remedial action plan documentation will be required to be submitted with specific development applications to the consent authority for approval as part of the development planning process.
- Given the age of buildings at the site, hazardous materials surveys should also be completed on existing buildings proposed for demolition to ensure appropriate management of materials during demolition of structures as part of future redevelopment activities.



### 11. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.



Figures





0	15 30		60 m	Le
Scal	e: 1:1,500			_
Datu	m: GDA 1994 MGA Zone 56	٩HD		
A4				
Α	Original Issue - R01	SE	12-04-2017	
Rev	Description	Drn.	Date:	

 Approximate Site Boundary - Cadastral Boundary

Client: UnitingCare

Project: War Memorial Hospital, Waverley NSW

Job No: 51954

File Name: 51954\_02



0	15 30		60 m	Lege	er
Sca	le: 1:1,500			_	A
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Rev	Description	Drn.	Date:		



Non-Asbestos Fibre Cement Fragment

Client: UnitingCare Project: War Memorial Hospital, Waverley NSW

Job No: 51954

File Name: 51954\_03



Rev Description Drn. Date:

File Name: 51954 04

Job No: 51954



## Appendix A Summary Tables

							Metal	& Meta	alloids				TPH	s (NEPC	1999)				TRHs	(NEPC 2	2013)						BTEX			
() JE	3S&G			Arsenic (Total)	Cadmium	Chromium (Total)	Copper	ad	ercury (Inorganic)	Nickel	2	C6-C9 Fraction	C10-C14 Fraction	5-C28 Fraction	9-C36 Fraction	0-C36 Fraction (Total)	C10-C16 Fraction	C16-C34 Fraction	C34-C40 Fraction	C10-C40 Fraction (Total)	-C10 Fraction	- C10 less BTEX (F1)	C10 - C16 less Naphthalene (F2)	nzene	t hylbenzene	Toluene	BTEX (Total)	Xylene (m & p)	Xylene (o)	ene (Total)
								Lea	Σ		Zinc			C15	C3	C10-	Ā	<u>^</u>	<u> </u>	X	Ś	90	Ā							X
-																									mg/kg		mg/kg	mg/kg	mg/kg	mg/kg
EQL				4.00	0.50	1.00	1.00	1.00	0.10	1.00	1.00	10.00	50.00	100.00	100.00		50.00	100.00	100.00		10.00	10.00	50.00	0.20	0.50	0.50		0.50	0.50	
NEPM 2013 EIL - U	Irban Residential (gene	ric)		100		190	60	1100		30	70																			
NEPM 2013 ESL Ur	rban Residential and Pu	ıblic Open Space,	Coarse Soil														120	300	2800		180	180	120	50	70	85				105
NEPM 2013 HSL As	sbestos in Soil - Bondeo	d ACM - Recreati	onal - HSL C																											
NEPM 2013 HSL As	sbestos in Soil - Bondeo	d ACM - Resident	tial - HSL B																											
NEPM 2013 HSL As	sbestos in Soil - FA & A	F - HSL																												
	Limits - Residential, Par	rkland and Public	c Open Space, Coarse														1000	2500	10000		700									
NEPM 2013 Soil H				500	150	500	30000	1200	120	1200	60000																			
NEPM 2013 Soil H				300	90	300	17000	600	80	1200	30000																			
NEPM 2013 Soil HS	<u>SL A &amp; HSL B for Vapou</u>	<mark>r Intrusion - Sano</mark>	<u>d 0 to &lt;1m</u>																			<u>45</u>	<u>110</u>	<u>0.5</u>	<u>55</u>	<u>160</u>				<u>40</u>
NEPM 2013 Soil HS	SL C for Vapour Intrusic	<u>m</u>																			<u>nl</u>	<u>nl</u>	<u>nl</u>	<u>nl</u>	<u>nl</u>				<u>nl</u>	
Field ID	Sample Depth	Sample Date	Lab Report No.																											
ACM01		13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA01	0-0.1	12/12/2012	83208	<4	<0.5	5	25	370	0.2	4	130	<25	<50	<100	<100	-	<50	<100	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-

ACIVIUI		13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- '	
HA01	0-0.1	12/12/2012	83208	<4	<0.5	5	25	370	0.2	4	130	<25	<50	<100	<100	-	<50	<100	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	- 1
HA02	0-0.1	12/12/2012	83208	4	1.2	15	140	550	0.4	16	550	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA03	0-0.1	12/12/2012	83208	<4	<0.5	7	36	190	0.3	5	160	<25	<50	<100	110	-	<50	150	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA03	0.2-0.3	12/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA04	0-0.1	12/12/2012	83208	<4	<0.5	27	25	91	0.1	30	110		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA05	0-0.1	13/12/2012	83208	7	<0.5	8	44	390	0.5	6	210	<25	<50	140	160	-	<50	250	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA05	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
HA06	0-0.1	13/12/2012	83208	5	<0.5	10	31	740	0.2	5	150	· · ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA07	0-0.1	13/12/2012	83208	7	<0.5	15	19	280	0.2	2	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA08	0-0.1	13/12/2012	83208	8	<0.5	10	99	510	3	4	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA09	0-0.1	13/12/2012	83208	<4	<0.5	8	37	200	0.5	2	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA10	0-0.1	13/12/2012	83208	<4	<0.5	6	21	210	0.4	2	150	<25	<50	<100	<100	-	<50	<100	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	- 1
HA11	0-0.1	13/12/2012	83208	9	0.8	11	87	1500	0.3	21	720	<25	<50	260	290	-	<50	430	130	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA11	0.2-0.3	13/12/2012	83208-A	<4	<0.5	4	25	570	0.3	7	160																			
HA12	0-0.1	13/12/2012	83208	<4	<0.5	8	30	1300	0.9	3	170		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12 - Triplicate	0-0.1	13/12/2012	83208	<4	<0.5	8	30	1100	0.7	4	170		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12	0.2-0.3	13/12/2012	83208-A	<4	<0.5	6	15	770	0.6	3	98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA13	0-0.1	13/12/2012	83208	4	<0.5	8	34	570	0.6	3	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA14	0-0.1	13/12/2012	83208	<4	<0.5	14	83	320	0.1	7	730	<25	<50	<100	160	-	<50	170	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA15	0-0.1	13/12/2012	83208	5	<0.5	13	62	1400	0.7	8	270		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
HA15	0.2-0.3	13/12/2012	83208-A	5	<0.5	11	45	1200	0.7	5	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA16	0-0.1	13/12/2012	83208	5	<0.5	8	33	180	0.2	6	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 1	-
HA17	0-0.1	13/12/2012	83208	<4	<0.5	8	55	270	0.3	5	340	· · ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- '	-
HA18	0-0.1	13/12/2012	83208	<4	0.7	21	62	160	0.4	18	190	<25	<50	140	110	-	<50	210	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	- 1
HA18	0.2-0.3	13/12/2012	83208	<4	<0.5	12	120	100	0.3	10	120	<25	<50	<100	<100	-	<50	130	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA18	0.4-0.5	13/12/2012	83208	<4	<0.5	15	58	120	0.2	10	180	<25	<50	<100	<100	-	<50	130	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
HA19	0-0.1	13/12/2012	83208	<4	<0.5	13	46	510	0.2	11	150	· · ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
HA20	0-0.1	13/12/2012	83208	<4	0.7	4	17	65	<0.1	2	83		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
QC01	0-0.1	12/12/2012	83208	<4	<0.5	7	39	240	0.3	7	180	<25	<50	230	170	-	<50	350	<100	-	<25	<25	<50	<0.2	<1	<0.5	-	<2	<1	-
QC01a	0-0.1	12/12/2012	ES1229744	<5	<1	6	42	187	0.3	5	179	<10	<50	180	120	300	<50	260	<100	260	<10	<10	-	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5
QC02	0-0.1	13/12/2012	83208	<4	<0.5	6	22	240	0.3	2	180		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02a	0-0.1	13/12/2012	ES1229744	<5	<1	6	21	218	0.3	2	165	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary	10 0.2																1	1								1		1		
Number of Results				32	32	32	32	32	32	32	32	15	15	15	15	5	15	15	15	5	15	15	14	15	15	15	5	15	15	5

Number of Results	32	32	32	32	32	32	32	32	15	15	15	15	5	15	15	15	5	15	15	14	15	15	15	5	15	15	5
Number of Detects	12	6	32	32	32	31	32	32	4	4	9	11	5	4	13	5	5	4	4	4	4	4	4	4	4	4	4
Minimum Concentration	<4	<0.5	4	15	65	<0.1	2	76	<10	<50	<100	<100	300	<50	<100	<100	260	<10	<10	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5
Minimum Detect	4	0.7	4	15	65	0.1	2	76	ND	ND	140	110	300	ND	130	130	260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	9	1.2	27	140	1500	3	30	730	<25	<50	260	290	300	<50	430	130	260	<25	<25	<50	<0.2	<1	<0.5	<0.2	<2	<1	<0.5
Maximum Detect	9	1.2	27	140	1500	3	30	730	ND	ND	260	290	300	ND	430	130	260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	3.3	0.35	10	47	485	0.45	7.2	217	12	25	114	120		25	198	57		12	12	25	0.1	0.48	0.25		0.93	0.48	
Median Concentration	2	0.25	8	36.5	300	0.3	5	170	12.5	25	50	110	300	25	170	50	260	12.5	12.5	25	0.1	0.5	0.25	0.1	1	0.5	0.25
Standard Deviation	2.1	0.22	5.1	31	418	0.52	6.5	163	2.3	0	81	74		0	118	24		2.3	2.3	0	0	0.075	0		0.23	0.075	
Number of Guideline Exceedances	0	0	0	7	7	0	0	30	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	7	7	0	0	30	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0

### Data Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing from this Combined Compound.

												Polvry	clic Aro	matic Hy	drocarh	ons							
14												loiyey											
() JE	58.G			Acenaphthene	Acenaphthylene	Anthracene	Benz(a) anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (medium bound)*	Benzo(b)fluoranthene	Benzo(b, k) fluoranthene	Benzo(g, h,i) perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Carcinogenic PAHs as B(a)P TPE	Phenanthrene	Pyrene	PAHs (Total)
I				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	mg/kg	mg/kg
EQL	han Desidential (see	ant a l		0.10	0.10	0.10	0.10	0.05	0.50		0.20	0.10		0.10	0.10	0.10	0.10	0.10	0.10		0.10	0.10	
	ban Residential (gene an Residential and P		Coarsa Soil					0.7											170				
	estos in Soil - Bonde							0.7															
	estos in Soil - Bonde																						
	estos in Soil - FA & A																						
NEPM 2013 Mgnt Li	mits - Residential, Pa	rkland and Publi	c Open Space, Coarse																				
NEPM 2013 Soil HIL																				4			400
NEPM 2013 Soil HIL																				3			300
	A & HSL B for Vapou																		<u>3</u>				
NEPM 2013 Soil HSL	. C for Vapour Intrusi	on - Sand 0 to <1	<u>m</u>																<u>nl</u>				
Field ID	Sample Donth	Sample Date	Lab Report No																				
ACM01	Sample Depth	Sample Date 13/12/2012	Lab Report No. 83208		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA01	0-0.1	12/12/2012	83208	<0.1	<0.1	0.1	0.6	0.87	1	-	- 1.3	- 0.5	-	0.7	<0.1	1.2	<0.1	0.5	<1 - 0.1		- 0.5	1.3	8.07
HA01	0-0.1	12/12/2012	83208		- 1				-	-	- 1.5		-	- 0.7		- 1.2	-		-	1.042		-	-
HA03	0-0.1	12/12/2012	83208	<0.1	0.4	0.6	2.6	3.1	4	-	4.2	1.5	-	2.4	0.3	5	0.2	1.7	<0.1	<b>3.869</b> <sup>#1</sup>	2.6	5.2	30.9
HA03	0.2-0.3	12/12/2012	83208-A	-	-	-	-	4.4	-	-	-	-	-	-	-	-	-	-	-	5.609	-	-	-
HA04	0-0.1	12/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA05	0-0.1	13/12/2012	83208	<0.1	0.5	0.7	4.1	5.5	8	-	7.6	2.9	-	3.9	0.7	7	0.2	3.2	<1 - 0.1	6.998 <sup>#1</sup>	3.2	7.3	48.3
HA05	0.2-0.3	13/12/2012	83208-A	•	-	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-	3.04	-	-	-
HA06	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA07	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA08	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA09	0-0.1	13/12/2012	83208	· ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA10	0-0.1	13/12/2012	83208	<0.1	0.1	0.2	1.2	1.5	2	-	2.2	0.8	-	1.1	0.1	2.3	<0.1	0.9	<0.1	1.829 <sup>#1</sup>	1	2.3	16.4
HA11	0-0.1	13/12/2012	83208	0.1	0.4	0.8	5.3	7.7	11	-	11	4.5	-	5.5	0.9	12	0.2	5.1	<1 - 0.1		5.2	12	60.9
HA11	0.2-0.3	13/12/2012	83208-A					0.59												0.717			
HA12	0-0.1	13/12/2012	83208	· ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12 - Triplicate HA12	0-0.1	13/12/2012 13/12/2012	83208 83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12 HA13	0-0.1	13/12/2012	83208-A 83208		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA13	0-0.1	13/12/2012	83208	<0.1	0.1	0.1	0.6	0.71	1	-	- 1	0.4	-	0.5	<0.1	1.1	<0.1	0.4	<0.1	- 0.869 <sup>#1</sup>	0.6	1.2	7.11
HA15	0-0.1	13/12/2012	83208	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA15	0.2-0.3	13/12/2012	83208-A	· ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA16	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA17	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA18	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	0.4	0.56	1	-	0.9	0.3	-	0.4	<0.1	0.7	<0.1	0.4	<0.1	0.697#1	0.3	0.8	5.1
HA18	0.2-0.3	13/12/2012	83208	<0.1	<0.1	<0.1	0.2	0.23	<0.5	-	0.4	<0.1	-	0.2	<0.1	0.5	<0.1	0.1	<0.1	0.3125#1	0.2	0.5	3.03
HA18	0.4-0.5	13/12/2012	83208	<0.1	<0.1	0.1	0.7	0.9	1	-	1.3	0.5	-	0.6	<0.1	1.3	<0.1	0.5	<0.1	1.081#1	0.5	1.3	4.2
HA19	0-0.1	13/12/2012	83208	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA20	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	0-0.1	12/12/2012	83208	<0.1	1.3	2.3	7.8	7.4	10	-	10	3	-	6.3	0.8	14	0.7	3.6	<1 - 0.2	9.433 <sup>#1</sup>	9.2	14	80.7
QC01a	0-0.1	12/12/2012	ES1229744	<0.5	1	1.9	5.3	4.8	-	5.7	-	2.8	2.1	5	0.5	11	<0.5	2.3	<0.5	6.9	5.3	11	58.7
QC02	0-0.1	13/12/2012	83208	· ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02a	0-0.1	13/12/2012	ES1229744	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0																							
Statistical Summary	1			45	45	45	45	10	1.		1.4	15	-	45	15	15	4.5	45	45	10	15	45	45
Number of Results				15 5	15	15	15	16	14	5	14	15	5	15	15	15	15	15	15	16	15	15	15
Number of Detects Minimum Concentra				<0.1	11 <0.1	13 <0.1	15 0.2	16 0.23	13 <0.5	5 5.7	14 0.4	14 <0.1	5 2.1	15 0.2	10	15 0.5	8 <0.1	15 0.1	8 <0.1	16 0.3125	15 0.2	15 0.5	15 3.03

Number of Results	15	15	15	15	16	14	5	14	15	5	15	15	15	15	15	15	16	15	15	15
Number of Detects	5	11	13	15	16	13	5	14	14	5	15	10	15	8	15	8	16	15	15	15
Minimum Concentration	<0.1	<0.1	<0.1	0.2	0.23	<0.5	5.7	0.4	<0.1	2.1	0.2	<0.1	0.5	<0.1	0.1	<0.1	0.3125	0.2	0.5	3.03
Minimum Detect	0.1	0.1	0.1	0.2	0.23	1	5.7	0.4	0.3	2.1	0.2	0.1	0.5	0.2	0.1	ND	0.3125	0.2	0.5	3.03
Maximum Concentration	<0.5	1.3	2.3	7.8	7.7	11	5.7	11	4.5	2.1	6.3	0.9	14	0.7	5.1	<0.5	9.74	9.2	14	80.7
Maximum Detect	0.1	1.3	2.3	7.8	7.7	11	5.7	11	4.5	2.1	6.3	0.9	14	0.7	5.1	0.2	9.74	9.2	14	80.7
Average Concentration	0.073	0.36	0.63	2.6	2.9	3.9		4	1.6		2.4	0.32	5.1	0.17	1.7	0.16	3.7	2.6	5.2	29
Median Concentration	0.05	0.1	0.2	1.2	1.95	1.5	5.7	1.75	0.8	2.1	1.1	0.1	2.3	0.05	0.9	0.05	2.4345	1	2.3	16.4
Standard Deviation	0.061	0.43	0.78	2.6	2.6	4.2		4	1.5		2.3	0.34	5.1	0.19	1.7	0.13	3.4	2.9	5.1	28
Number of Guideline Exceedances	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0

### Data Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing f

											Org	anochlo	rine Pesti	cides										
JBS&G	lorobenzene			+ Dieldrin (Sum of Total)	-	внс			внс	+DDE+DDD (Sum of Total)	dane		BHC	-Chlordane	lfan alpha	lfan beta	lfan sulphate		aldehyde	ketone	Ichlor	hlor Epoxide		tychlor
	lexach	Aldrin	1,4-DDI	Aldrin +	Dieldrin	alpha-B	00	Б	oeta-BH	DDT+DI	alpha-Chlor	Chlordane	delta-B	gamma	Endosulfan	Endosulfa	Endosulfa	Endrin	Endrin	Endrin	leptac	leptac	indane	Methox
	mg/kg		mg/kg	mg/kg					mg/kg				mg/kg	mg/kg		mg/kg					mg/kg	mg/kg		mg/kg
EQL	0.05		0.05		0.05	0.05	0.05	0.10	0.05		0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.10
NEPM 2013 EIL - Urban Residential (generic)								180																
NEPM 2013 ESL Urban Residential and Public Open Space, Coarse Soil																								
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Recreational - HSL C																								
NEPM 2013 HSL Asbestos in Soil - Bonded ACM - Residential - HSL B																								
NEPM 2013 HSL Asbestos in Soil - FA & AF - HSL																								
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Coarse																								
NEPM 2013 Soil HIL B	15			10						600		90						20			10			500
NEPM 2013 Soil HIL C	10			10						400		70						20			10			400
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Sand 0 to <1m																								
NEPM 2013 Soil HSL C for Vapour Intrusion - Sand 0 to <1m																								

Field ID	Sample Depth	Sample Date	Lab Report No.																								
ACM01		13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA01	0-0.1	12/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA02	0-0.1	12/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA03	0-0.1	12/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA03	0.2-0.3	12/12/2012	83208-A	· ·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA04	0-0.1	12/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA05	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA05	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA06	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA07	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA08	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA09	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA10	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA11	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA11	0.2-0.3	13/12/2012	83208-A																					1			
HA12	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12 - Triplicate	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA13	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA14	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA15	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA15	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA16	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA17	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA18	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
HA18	0.2-0.3	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA18	0.4-0.5	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA19	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA20	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	0-0.1	12/12/2012	83208	<0.1	<0.1	<0.1	<0.2#4	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.3#2	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
QC01a	0-0.1	12/12/2012	ES1229744	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
QC02	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02a	0-0.1	13/12/2012	ES1229744	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

### Statistical Summary

Number of Results	13	0	0	0	0	0	0	0	0	13	13	5	13	13	13	13	13	13	13	5	13	13	13	13
Number of Detects	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Minimum Concentration	< 0.05	99999	99999	99999	99999	99999	99999	99999	99999	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.1	0	0	0	0	0	0	0	0	<0.3	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.047									0.14	0.047		0.047	0.047	0.047	0.047	0.047	0.047	0.047		0.047	0.047	0.047	0.056
Median Concentration	0.05									0.15	0.05	0.025	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.025	0.05	0.05	0.05	0.05
Standard Deviation	0.008									0.042	0.008		0.0083	0.0083	0.008	0.0083	0.0083	0.0083	0.008		0.008	0.0083	0.008	0.017
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### Data Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing f

					Poly	chlorinat	ed Bipher	yls										Org	anophosp	ohorus Pe	sticides									Asbestos	Other
<b>X J</b> E	35&G																														
														-	_																
											5	5		gt	methyl									<u>ه</u> ا		⊸	-			Soil	
					8	8		4			eth	et		Ĕ	Ē						-			- Ř		leth	ethyl			<b></b>	
			1016	1221	1232	1242	1248	1254	1260	(Total)	s me	mophos-ethy	ifos	ifos	menton-S-I	-	s	ate		S q	hior	-	5	nocrotophos	E.	athion methyl		S		ē	
			oclor	2	5	5	5	2		Ĕ	inphos	do	l d	- Maria	eut	- Pa	20	the	5	<u></u>	rot	hior	thi	ocr	athion	thio	hdir	liof	-	stos	l t
			2 Z	Loc	roc	roc	roc	loc	roclor	B	luiz	Lon I	Chlorpyrifo	Chlorpyrifos-methyl	Dem	Diazinon	Dichlorv	Dimethoate	Ethion	enamiphos	enitrothion	ent	Malathion	Mon	arat	arat	Pirimiphos	Prothiof	Ronnel	sbe	Moisture
			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	mg/kg			mg/kg	g/kg	~ ~
EQL			0.10	0.10	0.10	0.10	0.10	0.10	0.10			0.05	0.05	0.05		0.05		0.05	0.05		0.10								0.10	8/ 18	0.10
	Jrban Residential (gene	eric)																													
		ublic Open Space, Coarse Soil																													
NEPM 2013 HSL A	sbestos in Soil - Bonde	d ACM - Recreational - HSL C																													
		d ACM - Residential - HSL B																													
	sbestos in Soil - FA & A																														
		rkland and Public Open Space, Coarse											240																		
NEPM 2013 Soil H NEPM 2013 Soil H										1			340 250																_		
		ır Intrusion - Sand 0 to <1m											250																		
	SL C for Vapour Intrusio																														
Field ID	Sample Depth	Sample Date Lab Report No.																													
ACM01		13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	- 1
HA01	0-0.1	12/12/2012 83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	11
HA02	0-0.1	12/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
HA03	0-0.1	12/12/2012 83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	7.3
HA03	0.2-0.3	12/12/2012 83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA04	0-0.1	12/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
HA05	0-0.1	13/12/2012 83208	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	23
HA05	0.2-0.3	13/12/2012 83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	· ·
HA06	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
HA07	0-0.1	13/12/2012 83208		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9
HA08	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	22
HA09 HA10	0-0.1	13/12/2012         83208           13/12/2012         83208	<0.1	<0.1	<0.1	<0.1	<0.1	- <0.1	- <0.1	<1		<0.1	<0.1	- <0.1	-	<0.1	-	- <0.1	<0.1	-	- <0.1	-	-	-	-	-	-	-	<0.1	<0.1	14 5.4
HA11	0-0.1	13/12/2012 83208	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<1	· .	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1		<0.1	-	-	-	-	-	-	-	<0.1	<0.1	12
HA11	0.2-0.3	13/12/2012 83208 13/12/2012 83208-A	<0.1	~0.1	<0.1	<b>\U.1</b>	<0.1	0.5	<0.1			<0.1	<0.1	~0.1		<0.1		<0.1	<b>\U.1</b>	-	<0.1	-			-	-	-	-	<0.1	<0.1	12
HA11	0-0.1	13/12/2012 83208-A	- ·	-		-	-	-	-	-			-	-	-	-		-		-	-	-	-	-	-	-	-	-	-	-	7.3
HA12 - Triplicate	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA12	0.2-0.3	13/12/2012 83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+ -
HA13	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
HA14	0-0.1	13/12/2012 83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	9.2
HA15	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
HA15	0.2-0.3	13/12/2012 83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA16	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	· ·	-	18
HA17	0-0.1	13/12/2012 83208 12/12/2012 82208		-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-		10
HA18	0-0.1	13/12/2012 83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<1		<0.1	<0.1		-	<0.1	-	<0.1		-	<0.1	-	-	-	-	-	-	-	<0.1	<0.1	9.1
HA18	0.2-0.3	13/12/2012 83208		-	-	-	-	-	-				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.4
HA18	0.4-0.5	13/12/2012 83208	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	9.5
HA19	0-0.1	13/12/2012 83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	12
HA20 QC01	0-0.1	13/12/2012 83208 12/12/2012 83208	- <0.1	-	-	-	-	-	- <0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- <0.1	-	9.5 13
				<0.1	<0.1	<0.1	<0.1	<0.1		<1		<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1			L						<0.1	
QC01a QC02	0-0.1	12/12/2012 ES1229744 13/12/2012 83208	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05 -	-	<0.1	13.2 8.6
QC02 QC02a	0-0.1	13/12/2012 83208 13/12/2012 ES1229744	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.5
120020	10 0.1		<u> </u>		1	1	1	I	1	1		1	1	1	1	1	1	1	I			1	1	1	1						
Statistical Summa	iry																														
	•		1	1.0	1	1	1	1	1	1	-	T	1	1	1	1	1	1	1			1	1	1							

HA12 - Triplicate	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA12	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA13	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA14	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	
HA15	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA15	0.2-0.3	13/12/2012	83208-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA16	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA17	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA18	0-0.1	13/12/2012	83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	-
HA18	0.2-0.3	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA18	0.4-0.5	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA19	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HA20	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QC01	0-0.1	12/12/2012	83208	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	<0.1	•
QC01a	0-0.1	12/12/2012	ES1229744	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	< 0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	-	•
QC02	0-0.1	13/12/2012	83208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
QC02a	0-0.1	13/12/2012	ES1229744	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$\square$

Statistical	Summary

Number of Results	12	12	12	12	12	12	12	13	0	0	0	0	0	0	0	0	13	5	12	5	5	5	5	5	5	5	12	$\square$
Number of Detects	4	4	4	4	4	5	4	4	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	$\square$
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	99999	99999	99999	99999	99999	99999	99999	99999	<0.05	<0.05	<0.1	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.1	$\square$
Minimum Detect	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<1	0	0	0	0	0	0	0	0	<0.1	<0.05	<0.1	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05	<0.1	
Maximum Detect	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Average Concentration	0.075	0.075	0.075	0.075	0.075	0.13	0.075	0.45									0.047		0.05								0.05	
Median Concentration	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5									0.05	0.025	0.05	0.025	0.025	0.1	0.1	0.1	0.025	0.025	0.05	$\square$
Standard Deviation	0.071	0.071	0.071	0.071	0.071	0.16	0.071	0.15									0.0083		0								0	$\square$
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\square$
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

### Data Comments

#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes are missing f

14	30	
4	30	
<0.1	5.4	
ND	5.4	
<0.1	23	
ND	23	
0.05	12	
0.05	11	
0	4.2	
0	0	
0	0	

						Metals 8	& Metalloids									Ро	lycyclic A	romatic H	lydrocarb	ons					
\$	<b>JBS&amp;G</b>			Cadmium Malan	Chromium (Total)	Cobber Mg/L	read mg/L	Mercury (Inorganic)	Nicke Mg/L	u N mg/L	Acenaphthene	Acenaphthylene	Anthracene	ଅଧି Benz(a)anthracene	Mg Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chrysene mg/r	Dibenz(a,h)anthracene	Eluoranthene	euene Eluorene mg/L	ଆ ଅଧି	Naphthalene	Phenanthrene mg/T	Byrene Mw/r
EQL			mg/L 0.001	0.000	-	0.001	0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Field ID	Sample Depth	Sample Date		1																					
HA03	0-0.1	12/12/2012	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001
HA05	0-0.1	13/12/2012	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	< 0.001	< 0.001	<0.001	<0.001	<0.001	< 0.001	< 0.001	<0.001	<0.001
HA11	0-0.1	13/12/2012	<0.05 - 0.001	<0	<0.001	<0.01 - 0.004	0.011 - 1	<0	0.001 - 0.03	0.12 - 6.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	< 0.001	<0.001	<0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	<0.001
HA12	0-0.1	13/12/2012	<0.001	<0	<0.001	<0.01 - 0.005	0.033 - 1.1	<0.001	<0.001	0.041 - 1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA15	0-0.1	13/12/2012	<0.05 - 0.002	<0	<0.001	0.007 - 0.03	0.009 - 0.7	< 0.001	<0.001	0.008 - 0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical	Summary																								
Number of	f Results		3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3
Number of	f Detects		2	0	0	3	3	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum	Concentration		<0.001	<0	<0.001	0.007	0.009	<0	<0.001	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Minimum			ND	ND	ND	0.007	0.009	ND	0.001	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Concentration		0.002	0	<0.001	0.03	1.1	<0.001	0.03	6.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	< 0.001	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Maximum			0.002	ND	ND	0.03	1.1	ND	0.03	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	oncentration		0.009	0	0.0005	0.0093	0.48	0.00033	0.0055	1.4	0.0005	0.0005	0.0005	0.0005	0.0005		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
	oncentration		0.013	0	0.0005	0.005	0.5055	0.0005	0.0005	0.6205	0.0005	0.0005	0.0005	0.0005		0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Standard D			0.0074	0	0	0.0079	0.11	0.00029	0.0087	1.5	0	0	0	0	0		0	0	0	0	0	0	0	0	0
	f Guideline Exceedan		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of	f Guideline Exceedan	ces(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



## Appendix B Photographic Log







# PHOTO 13: FILL MATERIAL STOCKPILE AT SOUTH WEST CORNER OF CARPARK

### PHOTO 14: MEN'S SHED





PHOTO 16: ACM PIPE IN LOT 2 DP 1061588







Job No: 51099									
Client: UnitingCare									
Version:	Date:12-07-2016								
Drawn By:RF	Checked By:KY								
Not to Scale									
Coord. Sys n/a									
War Memorial Hospital									
125 Birrell Street,									
Waverley NSW 2024									
1									













## Appendix C Monitoring Wells

### GW107016

Licence: 10BL164341 Licence Status: CANCELLED Authorised Purpose(s): TEST BORE Intended Purpose(s): RECREATION (GROUNDWATER) Work Type: Bore Work Status: Construct.Method: Rotary Air **Owner Type:** Commenced Date: Final Depth: 130.40 m Completion Date: 12/11/2004 Drilled Depth: 130.40 m Contractor Name: INTERTEC DRILLING SERVICES Driller: Colin Leslie Barden Assistant Driller: Property: WAVERLEY PARK BONDI RD BONDI Standing Water Level: 21.600 GWMÁ: -Salinity: GW Zone: -Yield: 0.700 Site Details

### Site Chosen By:

	County Form A: CUMBE Licensed: CUMBERLAND	<b>Parish</b> CUMBE.1 ALEXANDRIA	<b>Cadastre</b> 332 752011 Whole Lot 332//752011		
Region: 10 - Sydney South Coast	СМА Мар:				
River Basin: - Unknown Area/District:	Grid Zone:	Scale:			
Elevation: 0.00 m (A.H.D.) Elevation Source: Unknown	Northing: 6248167.0 Easting: 338947.0		de: 33°53'40.5"S de: 151°15'29.8"E		
GS Map: -	MGA Zone: 0	Coordinate Sou	rce: Unknown		

### Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure

### Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Туре	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.60	204			Down Hole Hammer
1		Hole	Hole	5.60	130.40	158			Down Hole Hammer
1	1	Casing	Pvc Class 9	-0.30	41.70	140			Screwed and Glued
1	1	Casing	Steel	-0.30	5.70	158	148		Driven into Hole
1	1	Opening	Slots - Diagonal	33.70	41.70	140		1	Sawn, PVC Class 9, SL: 100.0mm, A: 3.00mm

### Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
30.00	36.00	6.00	Unknown		0.45	36.00		170.00
84.00	85.00	1.00	Unknown		0.25	85.00		150.00

# Geologists Log Drillers Log

	То		Drillers Description	Geological Material	Comments
(m)	(m)	(m)			
0.00	2.00		SANDY LOAM	Loam	
2.00	4.00	2.00	RED BROWN SANDSTONE/W	Sandstone	
4.00	6.00	2.00	L/GREY SANDSTONE/ W.	Sandstone	
6.00	17.00	11.00	L/GREY SANDSTONE	Sandstone	
17.00	30.00		GREY SANDSTONE	Sandstone	
30.00	36.00	6.00	GREY, FRACTURED SANDSTONE	Sandstone	
36.00	39.80	3.80	DARK GREY SANDSTONE	Sandstone	
39.80	40.00	0.20	SHALE	Shale	
40.00	42.00	2.00	DARK, FRACTURED SANDSTONE	Sandstone	
42.00	53.70	11.70	LT, GREY SANDSTONE	Sandstone	
53.70	54.00	0.30	LT, GREY FRACTURED SANDSTONE	Sandstone	
54.00	80.00	26.00	GREY SANDSTONE	Sandstone	
80.00	82.00	2.00	SILTY SHALE, SANDSTONE	Sandstone	
82.00	84.00	2.00	GREY SANDSTONE QUARTZ	Sandstone	
84.00	86.00	2.00	GREY SANDSTONE	Sandstone	
86.00	88.00	2.00	GREY SANDSTONE/SILTSTONE	Sandstone	
88.00	92.80	4.80	LT GREY SANDSTONE	Sandstone	
92.80	93.00	0.20	GREY FRACTURED SANDSTONE	Sandstone	
93.00	95.80	2.80	CREAM FRACTURED SANDSTONE	Sandstone	
95.80	106.00	10.20	LT/GREY SANDSTONE	Sandstone	
106.00	106.30	0.30	LT GREY FRACTURED SANDSTONE	Sandstone	
106.30	121.00	14.70	LT GREY SANDSTONE	Sandstone	
121.00	127.00	6.00	LT GREY CREAM SANDSTONE	Sandstone	
127.00	130.40	3.40	CREAM/LT GREY SANDSTONE	Sandstone	

### Remarks

01/05/2006: Previous Lic No:10BL164341

\*\*\* End of GW107016 \*\*\*

### GW111553

		County	Parish	Cadastre
Site Chosen By:				
Site Details				
GWMA. GW Zone:		Yield:		
Property: GWMA:	WRIGHT 147 DARLEY RD RANDWICK 2031 NSW	Standing Water Level: Salinity:		
Assistant Driller:				
Driller:	Unkown Unknown			
Contractor Name:				
Commenced Date: Completion Date:		Final Depth: Drilled Depth:		
Owner Type:	Private			
Construct.Method:				
	Supply Obtained			
Work Type:	Bore			
		Authorised Purpose(s): Intended Purpose(s):		
Licence:	10BL165565	Licence Status:	CONVERTED	

	Licensed:	COMBE.1	17//4096
Region: 10 - Sydney South Coast	СМА Мар:		
River Basin: - Unknown Area/District:	Grid Zone:		Scale:
Elevation: 0.00 m (A.H.D.) Elevation Source: Unknown	Northing: 6247218.0 Easting: 337673.0		atitude: 33°54'10.6"S agitude: 151°14'39.6"E
GS Map: -	MGA Zone: 0	Coordinate	Source: Unknown

### Construction

### allwaterdata.water.nsw.gov.au/wgen/users/581176757//gw111553.wsr.htm

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

F	lole	Pipe	Component	Туре	From	-	Outside		Interval	Details
					(m)	(m)	Diameter	Diameter		
							(mm)	(mm)		

### Water Bearing Zones

-	<u> </u>								
From	То	Thickness	WBZ Type	S.W.L.	D.D.L.	Yield	Hole	Duration	Salinity
(m)	(m)	(m)		(m)	(m)	(L/s)	Depth	(hr)	(mg/L)
							(m)		

# Geologists Log Drillers Log

From	То	Thickness	Drillers Description	Geological Material	Comments
(m)	(m)	(m)	-	-	

### Remarks

\*\*\* End of GW111553 \*\*\*

### GW110058

Licence:	10BL600038	Licence Status: CONV	ERTED	
		Authorised Purpose(s): DOME Intended Purpose(s): DOME	STIC STIC	
Work Type:	Spear			
Work Status:				
Construct.Method:				
Owner Type:	Private			
Commenced Date: Completion Date:		Final Depth: Drilled Depth:		
Contractor Name:				
Driller:	Unkown Unknown			
Assistant Driller:				
Property:	ABRAHAMS 185 DARLEY RD RANDWICK 2031 NSW	Standing Water Level:		
GWMA:		Salinity:		
GW Zone:		Yield:		
Site Details				
Site Chosen By:				
		County Form A: CUMBE Licensed:	<b>Parish</b> CUMBE.1	<b>Cadastre</b> 3//6209
Region: 10	- Sydney South Coast	СМА Мар:		
River Basin: - U Area/District:	• •	Grid Zone:		Scale:

Northing: 6247171.0

Easting: 337856.0

MGA Zone: 0

Latitude: 33°54'12.2"S

Longitude: 151°14'46.6"E

Coordinate Source: Unknown

http://allwaterdata.water.nsw.gov.au/wgen/users/581176757//gw110058.wsr.htm

Elevation: 0.00 m (A.H.D.)

Elevation Source: Unknown

GS Map: -

Construction

### allwaterdata.water.nsw.gov.au/wgen/users/581176757//gw110058.wsr.htm

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Туре	From (m)	To (m)	Outside Diameter	Inside Diameter	Interval	Details
				(,	(,	(mm)	(mm)		

### Water Bearing Zones

From	То	Thickness	WBZ Type	S.W.L.	D.D.L.	Yield	Hole	Duration	Salinity
(m)	(m)	(m)		(m)	(m)	(L/s)	Depth	(hr)	(mg/L)
· ·							(m)		

### **Geologists Log**

### Drillers Log

From	То	Thickness	Drillers Description	Geological Material	Comments
(m)	(m)	(m)			

### Remarks

01/01/2006: Form A Remarks: Casing: PVC 50mm.

\*\*\* End of GW110058 \*\*\*

### GW107447

Licence: 1	0BL163858	Licence Status: CONVERT	ED	
		Authorised Purpose(s): DOMESTIC Intended Purpose(s): DOMESTIC		
Work Type: S	Spear			
Work Status: S	Supply Obtained			
Construct.Method: J	etted - Water			
Owner Type: F	Private			
Commenced Date: Completion Date: 1	7/06/2004	Final Depth: 8.23 m Drilled Depth: 8.24 m		
Contractor Name:				
Driller: A	Arthur Korkidas			
Assistant Driller:				
	DUCHEN 14 MARKET ST RANDWICK	Standing Water Level: 5.490		
GWMA: - GW Zone: -		Salinity: Good Yield: 1.000		
Site Details				
Site Chosen By:				
		County Form A: CUMBE Licensed: CUMBERLAND	<b>Parish</b> CUMBE.1 ALEXANDRIA	<b>Cadastre</b> 1//1085287 Whole Lot PT10//6209

Region: 10 - Sydney South CoastCMA Map: 9130-3SRiver Basin: 213 - SYDNEY COAST - GEORGES<br/>RIVERGrid Zone:Area/District:Elevation: 0.00 m (A.H.D.)Elevation: 0.00 m (A.H.D.)Northing: 6247114.0Elevation Source: UnknownEasting: 337879.0

GS Map: -

MGA Zone: 0

Latitude: 33°54'14.1"S Longitude: 151°14'47.5"E

Coordinate Source: GIS - Geographic Information System

Scale:

### Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Туре	-	To (m)	Diameter	 Interval	Details
1		Hole	Hole	0.00	8.23	100		Jetted - Water
1	1	Casing	Pvc Class 12	0.00	7.63	42		Glued
1	1	Opening	Screen	7.63	8.23	50	1	Stainless Steel, Screwed, A: 0.01mm

### Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Туре	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Duration (hr)	Salinity (mg/L)
5.49	8.23	2.74	Unknown	5.49		1.00		

### **Geologists Log**

### Drillers Log

. I.,	rom m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
	0.00	8.23	8.23	Sand, unconsolidated	Sand	

### Remarks

17/06/2004: Form A Remarks: spear point - stainless steel over PVC 50mm, 600 length .006 aperture, screwed 01/04/2010: updated from original form A

\*\*\* End of GW107447 \*\*\*

### GW106854

Licence: 10BL163505	Licence Status: CONV	ERTED	
	Authorised Purpose(s): DOME Intended Purpose(s): DOME		
Work Type: Spear			
Work Status: Supply Obtained			
Construct.Method: Auger			
Owner Type: Private			
Commenced Date: Completion Date: 15/02/2005	Final Depth: 7.00 m Drilled Depth: 7.00 m		
Contractor Name:			
Driller: Rosario Fedele			
Assistant Driller:			
Property: ALLAN 16 MARKET ST RANDWICK 2031	Standing Water Level:		
GWMA: - GW Zone: -	Salinity: Yield:		
GW Zone	neiu.		
Site Details			
Site Chosen By:			
	County	Parish	Cadastre
	Form A: CUMBE Licensed: CUMBERLAND	CUMBE.1 ALEXANDRIA	1//367856 Whole Lot 1//367856
Region: 10 - Sydney South Coast	CMA Map: 9130-3S		
River Basin: 213 - SYDNEY COAST - GEORGES RIVER	Grid Zone:	S	cale:
A rea/District:			

Area/District:

Elevation: 0.00 m (A.H.D.) Elevation Source: Unknown

GS Map: -

MGA Zone: 0

Northing: 6247103.0

Easting: 337878.0

Latitude: 33°54'14.4"S Longitude: 151°14'47.5"E

Coordinate Source: GIS - Geographic Information System

### Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

H	ole	Pipe	Component	Туре	From (m)	To (m)		Inside Diameter (mm)	Interval	Details
	1		Hole	Hole	0.00	7.00	100			Auger

### Water Bearing Zones

From (m)         To (m)         Thickness (m)         WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)		Salinity (mg/L)
---	---------------	---------------	----------------	----------------------	--	--------------------

### **Geologists Log**

### Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	7.00	7.00	sand	Sand	

### Remarks

02/02/2010: updated from original form a

\*\*\* End of GW106854 \*\*\*


### Appendix D Historical Aerial Photographs



A Original Issue - Aerials SE 03-01-2013 Rev Description Drn. Date:

Project: War Memorial Hospital, Waverley NSW

Job No: 42458

File Name: 42458\_1930

Science	ource: Ease Image - Dep				<image/>	
0	50 100		200 m	Legend:	JES Figure; Waverlev, May 1951.	
Datun	e: 1:5,000 m: GDA 1994 MGA Zone 56 - /	AHD		Approximate Site Boundary	Figure: Waverley, May 1951, ENVIRONMENTAL Run 14	
A4					Client: UnitingCare	
	Original Issue - Aerials	SE	03-01-2013		Project: War Memorial Hospital, Waverley NSW	
Rev	Original Issue - Aerials Description	Drn.	Date:		Job No: 42458 File Name: 42458_1951	

		「「「「「「「「「「「」」」」」			
Sc		artment		cumberland Series, 1961, Run 36E	© 2013 JBS Environmental Pty Ltd
Datur	50 100 e: 1:5,000 m: GDA 1994 MGA Zone 56 -	AHD	200 m	Legend: Approximate Site Boundary	Figure: Waverley, 1961, Run 36E
A4					Client: UnitingCare
_				4	
	Original Issue - Aerials	SE	03-01-2012	 a	Project: War Memorial Hospital, Waverley NSW
Rev	Original Issue - Aerials Description	Drn	Date:	4	Job No: 42458 File Name: 42458_1961

Source: Base Image - Department of Lands, C to       0     50     100     200		© 2013 JBS Environmental Pty Ltd
m Scale: 1:5,000 Datum: GDA 1994 MGA Zone 56 - AHD	Legend: Approximate Site Boundary	Figure: Waverley, July 1970, Run 18
A4		Client: UnitingCare
		Project: War Memorial Hospital, Waverley NSW
A Original Issue - Aerials SE 03-01-2013 Rev Description Drn. Date:		Job No: 42458 File Name: 42458_1970
Kev Description   Drn.   Date:		



	πmento		dney, 02-08-1986, Run 23W	© 2013 JBS Environmental Pty Ltd
0 50 100 Scale: 1:5,000 Datum: GDA 1994 MGA Zone 56 - A	HD	200 m	Legend: — Approximate Site Boundary	Figure: Waverley, August 1986, Run 23W
A4				Client: UnitingCare
				Client: UnitingCare
	~	02.01.0010		Project: War Memorial Hospital, Waverley NSW
A Original Issue - Aerials Rev Description	SE Drn.	03-01-2013 Date:		Job No: 42458 File Name: 42458_1986



A Original Issue - Aerials SE 03-01-2013

Drn. Date:

Rev Description

Project: War Memorial Hospital, Waverley NSW	
reject. that morner a receptal, that oney rect	

Job No: 42458

File Name: 42458\_1994



A	Original Issue - Aeriais	SE	03-0
Rev	Description	Drn.	Date

File Name: 42458\_2002

Job No: 42458



Appendix E Land Titles

 $\sim$  Search  $\sim$ re det 1 in DP 172 133 Schedule of Registered Proprietors Hr A819340 John Gladwell Wheen, John George Marins Tailor Charles John Preso 29 2 /8/22 ett James VUISIAFAI. eer methodist Ministers ecil Mc Clelland " Percy V. 2568 F.94) lter ( Walton Smith Medical Practite Fred Cull Merchant lilliamson inthe Manager , Perce Newman Alade Kabert Modeleton Hawkin Estate agents, all of Lyane fr N194106 Methodist Church (M. D. W.) eg 11/5/73 Uniting Church in ( openty Thust (M. S. W.) 100 AC788715 The Eg 1/2/2007 PM 12/2012. 18 Title Searching Co.





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/172133

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:20 PM	1	1/2/2007

#### LAND

LOT 1 IN DEPOSITED PLAN 172133 LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP172133

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (5 NOTIFICATIONS)

1	RESERVAT	IONS AND CONDITIONS IN THE CROWN GRANT(S)
2	A153729	RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE
		DESCRIBED AFFECTING THE LAND SHOWN SO BURDENED IN VOL
		3352 FOL 132
3	A153729	A153730, A153731, A153732 & A153733 RIGHT OF WAY &
		DRAINAGE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED
		SHOWN SO BURDENED IN VOL 3352 FOL 132
4	A153727	A153728, A153729 RIGHTS OF DRAINAGE AFFECTING PARTS
		OF THE LAND ABOVE DESCRIBED MORE FULLY SET OUT IN THE
		SAID INSTRUMENTS
5	B282738	EASEMENT APPURTENANT TO THE LAND ABOVE DESCRIBED
		AFFECTING THE LAND SHOWN SO BURDENED IN VOL 3352 FOL 132

#### NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\mathcal{S}$ earch  $\sim$ re det 1 in DP 948186 Schedule of Registered Proprietors Chenezer Frank Vickery Ft+ A153730 leg 8/4/AIS Of & yaney A610756 John Gladwell Wheen James Edward 699/9/20 anothers John George Morris Taylor 2568F.86) roles John Presco tt James Gree Weadhouse, Walter Cocil Mc Clelland Hercy Walton Smith Fred Cull Francis Williamson Firth Pency Newman Dlade Herbert middleton Hawkins 6318337 appointment of new Trustels under Reg 16/2/26 Methodist Church Property act 1.61568 Appentment of New Trustees Methodist Church Property act C 388204 Reg 27/11/35 JAN 194106 as hypere MA 7/12/12 INCTS Title & Co. (ppln AC7887)5





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/948186

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:21 PM	1	1/2/2007

LAND

LOT 1 IN DEPOSITED PLAN 948186 LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP948186

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S) 2 A153728 RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN SO BURDENED IN VOL 2568 FOL 86

3 A153730 BURDENED IN VOL 2568 FOL 86 BURDENED IN VOL 2568 FOL 86

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\sim$  Search  $\sim$ ne Let 2 in DP 106 1588 chedule of Registered Proprietors Ebenezer Frank Vickeny + A153731 98/4/1915 Aney O. cito ó rA610756 B318337 as hefore C 388204 N 194106 AC 788715 us 12 12 7 JEMETS Title &earching Co.





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/1061588

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:21 PM	1	1/2/2007

LAND

LOT 2 IN DEPOSITED PLAN 1061588 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP1061588

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S) 2 A153731 RIGHT OF WAY AND DRAINAGE 6.095 METRES WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING PART OF LOT 1 IN DP 172133 SHOWN SO BURDENED IN THE TITLE

3 A153728 DIAGRAM 3 A153728 RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN AS "DRAINAGE EASEMENT 4 FEET WIDE" IN DP948185

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

- Search  $\sim$ re Lot 3 in DP 667555 hedrele of Regis texed Proprietors Ar A 153732 Cheneger Frank Vickery Aganey elicitor 14/1915 01 98 d F49 KrA610756 as before B318337 C 388204 N194106 AC 788715 7 Jenners Title Searching Co





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/667555

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:22 PM	1	1/2/2007

LAND

LOT 3 IN DEPOSITED PLAN 667555 LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP667555

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (3 NOTIFICATIONS)

 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
A153732 RIGHT OF WAY AND DRAINAGE EASEMENT APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LANE 6.095 WIDE SHOWN IN DP4993.
A153728 RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN AS "DRAINAGE EASEMENT 4FT WIDE" IN DP948185.

NOTATIONS

NOTE: SECTION 181B CROSS EASEMENTS MAY APPLY. UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\sim$  Search  $\sim$ re Lot 1 in DP 1061548 Schedule of Registered Proprietors Hr A153733 Ebenezer Frank Vickery Reg 8/4/1915 of Dyaney (V.2384/F4849) Delicitor Jer A610756 \$318337 as hefere C388204 N194106 AC 788715 MJ 7/12 JCINCIS Title Searching Co.





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/1061548

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:22 PM	1	1/2/2007

LAND

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LOT 1 IN DEPOSITED PLAN 1061548 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP1061548

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (4 NOTIFICATIONS)

1	RESERVATI	ONS AND CONDITIONS IN THE CROWN GRANT(S)
2	A153729	RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE
		DESCRIBED AFFECTING LOT 2 IN DP 1061548
3	A153733	RIGHT OF WAY AND DRAINAGE 6.095 METRES WIDE
		APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING PART
		OF LOT 1 IN DP172133 SHOWN SO BURDENED IN THE TITLE
		DIAGRAM

A153729 RIGHT OF DRAINAGE 1.23 METRES WIDE APPURTENANT TO 4 THE LAND ABOVE DESCRIBED AFFECTING THE LAND DESIGNATED (Y) IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\sim$  Search  $\sim$ ne Lot 2 in DP 106 1548 Schedule of Registered mornie ters Ar A153729 Ebenezer Frank Vickery Reg 8/4/15 of Dydeney Soliciter (V.2384 FA8.4) Le A 560583 Methodist Missienary Dociety Reg 10/4/20 of australasia Truet (Vas77F.193) desociation JA+ B 638937 John fladwell Wheen John George Marris Faylor Charles John Prescett James Green 1 cg 16/4/21 (VaSTIF.193 of Bydney, Mithodist Ministers and Walter Cecil Mc Clelland & Percy Walton Imith of Syaney, Medical Matticeners, Fred Cull of Syaney, Merchant, Francis Williamson Firth of Syaney Manager ercy rewman Aldole Herbert Middleton Hankins of syaney Estate agents "Chenezer Frank Mickey of Syaney Dolicitor C 388204 Us hefore N194106 Jenner's Title Searching Co AC 788715





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/1061548

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:23 PM	1	1/2/2007

LAND

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LOT 2 IN DEPOSITED PLAN 1061548 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP1061548

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (6 NOTIFICATIONS)

1	RESERVATI	ONS AND CONDITIONS IN THE CROWN GRANT(S)	
2	A153733	RIGHT OF WAY AND DRAINAGE 6.095 METRES WIDE	
		APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING	ļ

- APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING PART OF LOT 1 IN DP172133 SHOWN SO BURDENED IN THE TITLE DIAGRAM A153729 RIGHT OF DRAINAGE 1.23 METRES WIDE APPURTENANT TO
- 4 A153729 RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE
- 4 A153729 RIGHT OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND AS MORE FULLY SET OUT IN A153729
- 5 A153729 RIGHT OF DRAINAGE 1.23 METRES WIDE AFFECTING THE
- 6 B282738 LAND SHOWN SO BURDENED IN THE TITLE DIAGRAM RIGHT OF WAY AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM

#### NOTATIONS

3

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\mathrm{Search}\sim$ ne Let I in DP 567694 chedule of Registered Proprietors VIBITF.21 Ebenezer Vickeny issued of Warberley 2/10/1907 1 noperty Dioner TA A200427 licken Cheneger Frank 29 23/8/1916 neth h Firth Vicke Grene Hipsley Ke 1817 F.21) aspor 2/1. H610756 ( 1/948186 JA+ B 548685 leg 19/10/2 1817 F.21 Appointment of New Tnustees under Methodist Church Paoperty Act C10745 Reg. 9/9/ 30 4067 F197 As hefore C388204 D123385 Reg 6/7/42 ppointment of New Trustees nder Methodist Church V4067F19 Jacpenty act J672061 Reg 23/1 /by Jenner's Title &earching

- Search  $\sim$ -ne det in DP 567694 Schedule of Rega mosmetors Centa 11/5/13 Property Trust. Phop 887/5 g 28/1/2010 & as hefore e Searching





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/567694

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:23 PM	2	28/1/2010

LAND

LOT 1 IN DEPOSITED PLAN 567694 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP567694

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (10 NOTIFICATIONS)

1	RESERVATIO AF530817	INS AND CONDITIONS IN THE CROWN GRANT(S) PART OF THE LAND ABOVE DESCRIBED IS USED AS A
		RETIREMENT VILLAGE UNDER THE RETIREMENT VILLAGES ACT 1999 KNOWN AS "CONRAD BEARD COURT RETIREMENT VILLAGE" SHOWN HATCHED IN PLAN WITH AF530817
3	A153727	RIGHT OF DRAINAGE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4	A153728	RIGHT OF DRAINAGE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
5	A153729	RIGHT OF DRAINAGE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6	в998389	EASEMENTS FOR DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN AS RIGHTS OF DRAINAGE OVER SITE OF EASEMENT 1.829 METRES WIDE IN DP567694
7	683902	EASEMENTS FOR DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN AS RIGHTS OF DRAINAGE OVER SITE OF EASEMENT 1.829 METRES WIDE IN DP567694
8	683903	EASEMENT FOR DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND SHOWN AS RIGHTS OF DRAINAGE OVER SITE OF EASEMENT 0.914 METRES WIDE AND RIGHTS OF DRAINAGE OVER SITE OF EASEMENT 1.829 METRES WID
9	DP1147460	EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 2 AND 3.3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1147460
10	DP1147460	RIGHT OF CARRIAGEWAY 4 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1147460

END OF PAGE 1 - CONTINUED OVER

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\*ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

LPI On-Line



LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/567694

PAGE 2

NOTATIONS

NOTE: REFER ALL DEALINGS TO SD2 (RETIREMENT VILLAGE) UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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PRINTED ON 7/12/2012

- Search  $\sim$ ne Xets 3 × H in DP 593710 Chedule of Registered Proprietors of PART formerly in V. 4549 F109 V.4549 F. 109 Meather Gladys Tunda diseppe for Truda unfl of g bauld Ryberdery, Thus 21/10/32 Hrc 2288 84 Mary Sudakof leg 25/1/34 Jane V4549 F109 Jer D753863 James Thompson Steele Tate eg 12/11/47 of Randwick Veacher UH549 F109 JAN M652612 Methodist Church (N.S.W. 200 9/3/72 WH 549 F109 Property mes australia RP Q 577853 The Uniting Church Thust (n. 17/3/78 2784F.19.20 S Title Searching Co.

- Search  $\sim$ - ac Xets 3 + H in DP 593710 Schedule of Registered Paspireters Cimerly in V 6715 F 110) alexander Charles Dermont V. 6715F110 100.8/9/53 Depokvall Hr F988196 Luy Mildred Rushbrooke 09 11/2/54 V6715 F110 Waverley QA Widow op K 735316 Jude Rushbrooke of Waverley mout 1.6715 Filo of Darlinghunst, Marned Woman Her K837114 Tommass Trichisoma Reg 12/10/67 of Paddington, Builder's Labourero Vo 715F110) Giuseppina Lubisoma, his mife Hr M 114510 Rey Mason Euston Glover Reg 20/12/70 0f Gorden 6715F110) For M60249 The thodist Church n. N. W. Jugaly Reg 23/12/11 PRODUNTY Truest Jenners Title Cearching

 $\sim$  Search  $\sim$ re Xoto 3+ H in DP 593710 bedule of Registered Paoprietors of PART Johner Gy in V6715 F. 111 alexander Charles Dermont V6715F111 Drookvall, Clerk 100.8/9/53 Kathleen Kayall 24+ G281 eg 11/2/54 of Gateshead on Lyne, England V6715 F 11) Married Woman Hr G40339 Doro theal a there Hickey Keg 23 /3/54 of Wanerley V6715 F 111) Opins ter fr N11584 The Methodist Church (M. O.W.) Property Trust Reg 23/11/22 Uppla Q577853 ashefore

 $\sim$  Search  $\sim$ ne dets 3 × N IN DP 593710 Chedule of Registered Proprietors OF PART Johnerby in V 7813 F.3. of PART formerly in Ler H 118946 Lennie Fred Fox 7813 F.3 Dand aster , ley. YOX H 10/12/59 Therey Dorahy Marned John Patrick Dorahy LAND. M 163835 perephine oman" O4 lith of Lidcembe Ar May 1810 arthur Leslie Marshall Recip Q eg 7/4/ lccountant fr Mborg Methodist Church M. S. W. eg 23/12/ 19813 F.3 Phopenty must 17/ app Q 577853 as hefore

 $\sim$  Search  $\sim$ Xets 3+ 4 in DP 593710 Schedule of Registered Proprietors of PART formerly in V. 9872 F. 165 hel Roberts Fester TA D764903 Ma V. 5832 F82+88 Of Kandwick Spinster Watterson Osborn D. 26/5/58 felef Herace Rupert Osborn Randwick Dentist He M492834 Winston & arcy O'Reilly eg 16/11/71 of Resemble 19872F165Avg Clerke Granpin Property Tuest Reg 24/2/12 165 pp.Q571853 Us hefore Title &earching Co.

 $\sim$  Search  $\sim$ DP 593710 re 3 in te of Registered Proprietors headl yaney County Council +Q671111 re X rusquid 298 6 2005 93710 Ms 12 Title Searching Co.





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 4/593710 -----

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:24 PM	_	-

VOL 13589 FOL 247 IS THE CURRENT CERTIFICATE OF TITLE

#### LAND

LOT 4 IN DEPOSITED PLAN 593710 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY TITLE DIAGRAM DP593710

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N. S. W.)

SECOND SCHEDULE (5 NOTIFICATIONS)

1	RESERVATI	NS AND CONDITIONS IN THE CROWN GRANT(S)
2	683902	B998389 EASEMENTS FOR DRAINAGE APPURTENANT TO THE
		LAND ABOVE DESCRIBED AFFECTING THE PART(S) SHOWN SO
		BURDENED IN THE TITLE DIAGRAM

3	683903	EASEMENTS FOR DRAINAGE APPURTENANT TO THE LAND
		ABOVE DESCRIBED AFFECTING THE PART(S) SHOWN SO BURDENED
		IN THE TITLE DIAGRAM

A153728 A153729 RIGHTS OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE 4 A153727

5 F988196 TITLE DIAGRAM.

#### NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/593710

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:23 P	PM 1	8/6/2005

LAND

LOT 3 IN DEPOSITED PLAN 593710 AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM DP593710

FIRST SCHEDULE

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AUSGRID

(R AG862973)

SECOND SCHEDULE (4 NOTIFICATIONS)

1	RESERVAT	IONS AND CONDITIONS IN THE CROWN GRANT(S)	
2	683902	B998389 EASEMENTS FOR DRAINAGE APPURTENANT TO	THE
		LAND ABOVE DESCRIBED AFFECTING THE PART(S) SHO	
		BURDENED IN THE TITLE DIAGRAM	2012 - B.B.

3 683903 EASEMENTS FOR DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

4 A153727 A153728 A153729 RIGHTS OF DRAINAGE APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012

 $\sim$  Search  $\sim$ ne Lot 7 in DP 948185 Being Part Land in auto Consol 4036-50 Being Pant Earth Mayony Vicken ~ A153728 + Warender 1)518975 921/4/1915, Spinster 1/1927 V256'8 F8519 JAB680479 John George Merris Taylor, Charles John 19 22/6/28 ames Green Walter Ceci Nex 4036 F50 Walten Smith Fred Mel land, Percy Francis U Alliam i u, Ber ewman slade Herbert Middleton Hawkins & Eleneyer Frank Vickey C 388204 ashifere N194106 AC 788715 12





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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: AUTO CONSOL 4036-50

SEARCH DATE	TIME	EDITION NO	DATE
7/12/2012	12:24 PM	1	1/2/2007

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS AT WAVERLEY LOCAL GOVERNMENT AREA WAVERLEY PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND TITLE DIAGRAM SEE SCHEDULE OF PARCELS

FIRST SCHEDULE

THE UNITING CHURCH IN AUSTRALIA PROPERTY TRUST (N.S.W.) (AP AC788715)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S) 2 A153728 RIGHT OF DRAINAGE APPURTENANT TO LOT 7 IN DP948185 AFFECTING THE LAND AS MORE FULLY SET OUT IN A153728 3 A153728 RIGHT OF DRAINAGE 1.22 METRE WIDE AFFECTING THE PART OF LOT 7 IN DP 948185 SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS

LOT B IN DP317831 LOT 7 IN DP948185 DP317831 DP948185.

\*\*\* END OF SEARCH \*\*\*

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#### PRINTED ON 7/12/2012


Appendix F EPA Records

### List of NSW Contaminated Sites Notified to EPA as of 21 June 2016

### Background

A strategy to systematically assess, prioritise and respond to notifications under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that the nominated site is causing actual harm to the environment or an unacceptable offsite impact (i.e. it is a "significantly contaminated site"), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

### Frequently asked questions

# What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the <u>Contaminated Land: Record of Notices</u> only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act* 1997.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

#### Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

#### Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

#### How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997*, is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2008.
- The contamination is being managed under a specifically tailored program operated by another agency (for example the Department of Industry and Investment's *Derelict Mines Program*).

#### I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

#### I am a prospective buyer of a site that appears on the list. What should I do?

You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon,

particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

### List of NSW Contaminated Sites Notified to the EPA

#### Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

- 1. any information in the list; or
- 2. any error, omission or misrepresentation in the list; or
- 3. any malfunction or failure to function of the list;
- 4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

Site Status	Explanation
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or <i>Protection of the Environment Operations Act 1997</i> . Alternatively, the EPA may require information via a notice issued under s77 of the <i>Contaminated Land Management Act 1997</i> or issue a Preliminary Investigation Order.
Regulation under CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the <i>Contaminated Land Management Act 1997</i> is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the <i>Contaminated Land Management Act 1997</i> . A regulatory approach is being finalised.

Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the <i>Contaminated Land Management Act 1997</i> (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's <u>Contaminated Land Public Record</u> .
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the <i>Protection of the Environment Operations Act 1997</i> (POEO Act). The EPA's regulatory actions under the POEO Act are available on the <u>POEO public register</u> .
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the <i>Contaminated Land Management</i> <i>Act 1997</i> (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the <i>Protection of the Environment Operations Act 1997</i> (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the <i>Contaminated Land Management Act 1997</i> (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's <u>Contaminated Land Public Record</u> .

Suburb	Site Name	Address	Contamination Activity Type	Management Class	Latitude	Longitude
WARNERS BAY	Historically Filled Land	41-43 Charles STREET	Unclassified	Regulation under CLM Act not required	-32.97340461	151.6464383
WARNERS BAY	Caltex Service Station	55 King STREET	Service Station	Under assessment	-32.97418806	151.6476184
				Contamination formerly regulated under		
WARNERVALE	Former Timber Treatment Plant	Aldenham and Railway ROADS	Other Industry	the CLM Act	-33.24732018	151.4469037
WARRAWONG	Caltex Service Station	75-77 King STREET	Service Station	Under assessment	-34.49037817	150.888802
WARREN	Caltex Service Station	1 Coonamble ROAD	Service Station	Under assessment	-31.69508383	147.8405578
				Contamination currently regulated under		
WARREN	Former Mobil Warren Depot	16 Dubbo STREET	Other Petroleum	CLM Act	-31.6943058	147.8314606
WARREN	Former Shell Depot	8 Dubbo STREET	Other Petroleum	Regulation being finalised	-31.69379262	147.8308088
WATERLOO	Diversity Waterloo	1-13 Archibald AVENUE	Other Industry	Under assessment	-33.90204305	151.2097328
WATERLOO	Proposed Construction Site	2 John STREET	Other Industry	Regulation under CLM Act not required	-33.89989686	151.2010324
WATERLOO	Waverley Woollahra Process Plant	355 Botany ROAD	Other Industry	Regulation under CLM Act not required	-33.9063092	151.2042672
WATERLOO	Shall Color Everans Service Station	967 977 South Doubling STREET	Service Station	Regulation under CLM Act not required	-33.90179774	151 2142790
WATERLOO	Shell Coles Express Service Station	867-877 South Dowling STREET	Service Station	Regulation under CLM Act not required Contamination currently regulated under	-33.901/9//4	151.2143789
WATERLOO	Lawrence Dry Cleaners	887-893 Bourke STREET	Unclassified	CLM Act	-33.89897433	151.2101436
WATERLOO		887-855 BOUINE STILLT	Unclassified		-33.83837433	151.2101450
WAUCHOPE	Expressway Spares UST	3 Sancrox ROAD	Other Petroleum	Regulation under CLM Act not required	-31.44421922	152.8218723
WAUCHOPE	Former Shell Depot	56-64 High STREET	Other Petroleum	Regulation under CLM Act not required	-31.45804845	152.7314151
WAUCHOPE	Wauchope Service Station	57 High STREET	Service Station	Regulation under CLM Act not required	-31.45737022	152.7305018
WAUCHOPE	Shell Coles Express Service Station	64 High STREET	Service Station	Under assessment	-31.45764495	152.7315975
WALCHODE	The last the transformed City				24 46575645	452 7220555
WAUCHOPE	Former Timber Treatment Site	Blackbutt DRIVE	Other Industry	Regulation under CLM Act not required	-31.46575645	152.7228555
WAVERTON	Berry's Bay Woodley's Marina	1 Balls Head DRIVE	Other Industry	Contamination currently regulated under POEO Act	-33.84441851	151.1947433
				Contamination formerly regulated under		
WAVERTON	Oyster Cove AGL	2 King STREET	Gasworks	the CLM Act	-33.83637995	151.193541
				Contamination formerly regulated under		
WAVERTON	SRA Land	95 Bay ROAD	Unclassified	the CLM Act	-33.83716728	151.1969497
WELLINGTON	Caltex Service Station	124-128 Lee STREET	Service Station	Under assessment	-32.55082729	148.9411537
WELLINGTON	BP Wellington Service Station	35A Maxwell STREET	Service Station	Under assessment	-32.55835121	148.9447284
WELLINGTON	Woolworths Petrol Wellington	79 Lee STREET	Service Station	Under assessment	-32.54874227	148.9408531
WENTWORTH	Caltex - Wentworth	110 Adams STREET	Service Station	Regulation under CLM Act not required	-34.1024927	141.9160539
		2 /		Contamination formerly regulated under		
WENTWORTH FALLS	Bodington Hospital	Bodington DRIVE 23 Bennelong Parkway PARK	Unclassified Other Petroleum	the CLM Act Under assessment	-33.73201608 -33.83115118	150.3874102 151.0726636
	TNT Express	23 Bennelong Parkway PARK	Other Petroleum	Under assessment	-33.83115118	151.0726636
WENTWORTH POINT	RMS Eastern Precinct	3-7 Burroway ROAD	Other Petroleum	Regulation under CLM Act not required	-33.8233882	151.0815668
WENTWORTHVILLE	Former Workshop	2 Rawson Rd and 8 Barfil CRESCENT	Unclassified	Regulation under CLM Act not required	-33.81568808	150.9671853
WERRINGTON	Caltex Service Station	Cnr Dunheved Rd and Henry Lawson DRIVE	Service Station	Under assessment	-33.74577725	150.7409877
WERRINGTON	Claremont Meadows Former landfill	Gipps STREET	Landfill	Regulation under CLM Act not required	-33.77341076	150.7557628
WERRINGTON	7-Eleven Werrington	Lot 122 Dunheved ROAD	Service Station	Under assessment	-33.74699408	150.7428609
				Contamination formerly regulated under	5517 1055400	1000 120000
WEST BALLINA	Caltex Big Prawn Service Station	Pacific HIGHWAY	Service Station	the CLM Act	-28.86374913	153.5321482
WEST GOSFORD	Caltex Service Station	283 Manns ROAD	Service Station	Under assessment	-33.41659727	151.325219



Home Contaminated land Record of notices

### Search results

Your search for:LGA: Waverley Council

#### did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence rev or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the <u>planning</u> process.

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under <u>section 149 of the Environmental Planning and Assessment Act</u>.

#### See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.

This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the <u>POEO</u> public register

18 August 2016

Search Again Refine Search

# Search TIP To search for a

specific site, search by LGA (local government area) and carefully review all sites listed.

.. more search tips



Protection of the Environment Operations Act 1997

Licence Variation



Section 58(5) Protection of the Environment Operations Act 1997

SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE,

ABN 78 390 886 131,

125 BIRRELL STREET,

WAVERLEY NSW 2024

Attention: Mr. IAN PATERSON

File Number 501871

Date 24-Mar-2005

### NOTICE OF VARIATION OF LICENCE NO. 6370

#### BACKGROUND

- A. SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE **t/as** ("the licensee") is the holder of Environment Protection Licence No. 6370 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of Scheduled Activity Premises Based at 125 BIRRELL STREET, WAVERLEY, NSW.
- B. Licence varied as an outcome of the licence review conducted by the EPA under section 78 of the POEO Act 1997.

#### **VARIATION OF LICENCE NO. 6370**

- 1. By this notice the EPA varies licence No. 6370 as set out in the Appendix. The Appendix is a copy of the provisions of the licence which are varied by this notice, marked with the variations that are made to them.
- 2. The variations to the licence are indicated in the following way:
  - if a strike through mark appears through any word or other text (eg. Solids or) this indicates that the word or other text is deleted from the licence by this notice; and
  - if a double underline appears under any word or other text (eg. <u>must be treated</u>) this indicates that the word or other text is added to the licence by this notice.
- 3. Except as provided by section 84(2) of the Act, the variations to the licence by this notice begin to operate at the expiry of the period of 21 days after you receive notice of the variations, unless another date is specified in this notice.
- 4. Section 84(2) of the Act provides that a variation to a licence does not operate:

Protection of the Environment Operations Act 1997

# Licence Variation



#### Section 58(5) Protection of the Environment Operations Act 1997

- until the expiry of the period of 21 days after you are given notice of the decision to vary the licence is given to the; or
- if an appeal against the decision is lodged within that period, until the Land and Environment Court confirms the decision or the appeal is withdrawn; or
- until you notify the EPA in writing that no appeal is to be made against the decision to vary the licence,

whichever first occurs.

Mr Steve Beaman Manager Sydney Waste (by Delegation)

#### **INFORMATION ABOUT THIS NOTICE**

- Section 287 of the Act enables appeals to be made in connection with decisions about licences within 21 days after you are given notice of the decision.
- Details provided in this notice will be available on the EPA's Public Register in accordance with section 308 of the Act.
- This notice is issued under section 58(5) of the Act .



**Environment Protection Authority** 

# **Environment Protection Licence**

Section 55 Protection of the Environment Operations Act 1997

- Licence number: 6370
- + File number: 501871
- Licence Anniversary Date: 22-October
- Review date not later than 01-Jul-200524 Mar-

Licence Type Premises

#### Licensee

SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE 125 BIRRELL STREET WAVERLEY NSW 2024

### Licensed Premises

WAR MEMORIAL HOSPITAL WAVERLEY 125 BIRRELL STREET WAVERLEY NSW 2024

Fee Based Activity	<u>Scale</u>
Hazardous, Industrial or Group A Waste Generation or Storage (73)	0 - 10 T

EPA Region
Sydney <mark>Region</mark> Waste
Level 7, 79 George Street 59-61 Goulburn Street
PARRAMATTA NSW 2150 SYDNEY NSW 2000
Phone: 02 9995 5000
Fax: 02 9995 <mark>6900<mark>5999</mark></mark>
PO Box 668 PARRAMATTAPO Box A290 SYDNEY SOUTH
NSW 21241232

**Environment Protection Authority - NSW** 



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# Information about this licence

#### Dictionary

The licence contains a dictionary, which defines terms used in the licence. It is found at the end of the licence.

#### **Responsibilities of licensee**

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- Ensure persons associated with you comply with this licence, as set out in section 64 of the Act.
- Control the pollution of waters and the pollution of air (see for example sections 120 132 of the Act).
- Report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

#### Transfer of licence

Transfer of the licence to another person may be requested by the licensee using the form for this purpose available from the EPA.

#### Variation of licence conditions

Variations to the conditions of this licence may be requested by the licensee using the form for this purpose available from the EPA. The EPA may also vary a licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

#### **Duration of licence**

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

#### Licence review

The Act requires that the EPA review your licence at least every 3 years after the issue of the licence, as



set out in Part 3.6 of the Act. You will receive advance notice of the licence review. For licences held immediately before 1 July 1999, the first review will take place before 1 July 2002.

#### Fees and annual return to be sent to the EPA

The licence requires you to forward to the EPA an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints).

The Annual Return must be submitted within 60 days after the end of each reporting period. Where a licence is transferred, surrendered or revoked, a special reporting period applies.

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Usually the licence fee period is the same as the reporting period.

See condition R1 and the accompanying form regarding the Annual Return requirements.

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

#### Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- · licence applications
- licence conditions and variations
- statements of compliance

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

Licence anniversary date

22-October

This licence is issued to

SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE 125 BIRRELL STREET WAVERLEY NSW 2024

subject to the conditions which follow:



# 1 Administrative conditions

### A1 What the licence authorises and regulates

- A1.1 Not applicable.
- A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

# Scheduled Activity Waste Activities

Fee Based Activity	Scale
Hazardous, Industrial or Group A Waste Generation	0 - 10 T
or Storage (73)	

A1.3 Not applicable.



### A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
WAR MEMORIAL HOSPITAL WAVERLEY
125 BIRRELL STREET
WAVERLEY
NSW
2024
DP 567694 VOL 3352 & 12784 FOLIO 132 & 20DP
<u>2,4,5,6,7 PT99//4993, 1//172133, B//317831,</u>
<u>1//567694, 3//667555, 1//948186, 99DP4993</u>

#### A3 Other activities

A3.1 Not applicable.

#### A4 Information supplied to the EPA

- A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.
  - In this condition the reference to "the licence application" includes a reference to:
  - (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
  - (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

# 2 Discharges to air and water and applications to land

#### P1 Location of monitoring/discharge points and areas

P1.1 Not applicable.

**Environment Protection Authority - NSW** 



- P1.2 Not applicable.
- P1.3 Not applicable.

# 3 Limit conditions

#### L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

#### L2 Load limits

- L2.1 Not applicable.
- L2.2 Not applicable.

#### L3 Concentration limits

- L3.1 Not applicable.
- L3.2 Not applicable.
- L3.3 Not applicable.

#### L4 Volume and mass limits

L4.1 Not applicable.

#### L5 Waste

- L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.
- L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.



L5.3 Except as provided by any other condition of this licence, only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored at the premises.

Clinical and related wastes. [R100]

L5.4 The quantity of hazardous/and/or industrial and/or Group A waste generated and/or stored on the premises must not exceed 10 tonnes per year.

#### L6 Noise Limits

L6.1 Not applicable.

#### L7 Potentially offensive odour

- L7.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.
- Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

## 4 Operating conditions

#### O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

#### O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
  - (a) must be maintained in a proper and efficient condition; and
  - (b) must be operated in a proper and efficient manner.

#### O3 Emergency response



O3.1 Within 3 months of the date of the issue of the licence, the licensee must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (eg spill, explosions or fire) that may occur at the premises or outside of the premises (eg during transfer) which are likely to cause harm to the environment.

#### O4 Processes and management

- O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes, in force as at 1 July 1999.
- O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

#### O5 Monitoring of waste movements within NSW

O5.1 Conditions O5.2 to O5.16 apply to the movement of the types of hazardous and/or industrial and/or Group A waste as listed in L5.3, within NSW.

#### Prerequisites for waste movements

- O5.2 If the waste is transported from the premises, the licensee must ensure that the waste is transported:
  - (a) to a place which has been licensed by the EPA to issue consignment authorisation numbers; and
  - (b) to a place that can otherwise lawfully accept that class of waste.
- O5.3 If the waste is transported from the premises, the licensee must;
  - (a) obtain a consignment authorisation number from the consignee;
  - (b) complete an approved waste data form in relation to the consigned waste in accordance with the instructions on the form and to the extent required, and give a copy of the form to the person transporting the waste;
  - (c) ensure that the waste data form:
    - (i) is completed accurately, and
    - (ii) is retained for a period of not less than 4 years from the time the form was completed, and
    - (iii) is made available for inspection by an authorised officer on request;
  - (d) ensure, if the waste is of such an amount as to require the person transporting it to be licensed, that the person transporting the waste is licensed.

#### Application for a consignment authorisation number

- O5.4 To obtain a consignment authorisation number as required by 05.3 (a), the licensee must apply in writing to the consignee. An application must include the following information:
  - (a) a statement identifying the classification of the waste in accordance with the requirements of condition 04.1;
  - (b) copies of all information used to classify the waste;
  - (c) an estimate of the amount of waste to which the application applies;



- (d) whether the consignment will consist a single load or multiple loads;
- (e) an estimate of the total period required for transportation of the consignment;
- (f) the date of dispatch of at least the first load in the consignment.
- Note: The licensee may nominate the dates of dispatch of as many loads as is feasible. This should be discussed with the consignee and will depend on the predictability of the rate of generation of the waste and the likelihood of the need for amendments to the dates nominated. If the waste is predictable, a schedule may be able to be submitted for the entire consignment, however if it is unpredictable, the date of only one future load may be able to be determined at a time (see also 05.9 about amending notified dates).
- Note: The requirement for a written application for a consignment authorisation number does not preclude preliminary contact to obtain quotes and/or advice. Such preliminary contact does not require the formal provision of the above information that need only be supplied in the formal application.
- O5.5 Once an application for a consignment authorisation number, as set out in 05.4 has been submitted, the licensee must not submit an application for the same consignment to another consignee until notification is received concerning the outcome of the application.

#### Notification of dates of dispatch of the second and subsequent loads in a consignment.

- O5.6 The licensee must provide the consignee with written notification of the date of dispatch of each load of waste.
- O5.7 The notification referred to in 05.6 must be received by consignee no later than the date of arrival of the preceding load at the destination.

#### Notification of a final load in a consignment.

- O5.8 Unless the movement of an entire consignment of waste occurs in a single load, by the time the final load in a consignment is accepted at the destination, the licensee must have informed the consignee in writing, that no further loads are to be dispatched under that consignment authorisation number.
- Note: The notifications referred to in conditions 05.6 and 05.8 may be attached to the waste data form of the preceding load.

#### Amendments to the nominated date(s) of dispatch

- O5.9 If the date of dispatch for a load of waste is changed, the licensee must give written notification of this to the consignee and nominate a revised date of dispatch.
- O5.10 A notification referred to in 05.9 must occur on or before the date of delivery as previously nominated.
- Note: More than one amendment to dates of dispatch may occur.



#### Cancellation of consignment authorisations

O5.11 If the licensee determines that the delivery of a consignment of waste is to be discontinued for any reason, the consignee must be notified in writing before the nominated date of dispatch of the next expected load.

#### Notification of delayed delivery by transporter

O5.12 If the licensee receives written notification from a transporter who removed waste from the premises specifying a revised date of delivery to the destination which is more than 7 days after the date of dispatch, the licensee must note and record that date.

#### Record keeping

- O5.13 The licensee must record and retain all information related to each consignment of waste.
- Note: This includes waste data forms and copies of other documents such as notifications of revised delivery dates, regular and other reports, etc.
- O5.14 The records referred to in 05.13 must be kept so that:
  - (a) all records relating to individual consignment authorisation numbers are kept physically together;
  - (b) consignments transported by each transporter can be readily identified and accessed; and
  - (c) consignments sent to each destination can readily be identified and accessed.
- Note: The licensee must keep all information for at least 4 years.

#### Exception reporting

- O5.15 The licensee must notify the EPA, in writing, within 48 hours of becoming aware of any suspected breaches of the Act, the Protection of the Environment Operations (Waste) Regulation 1996 or this licence.
- O5.16 The licensee must notify the EPA in writing within 48 hours of becoming aware of any of the following:
  - (a) the refusal by a person to whom the licensee has applied for a consignment authorisation number in accordance with 05.4 to issue such a number;
  - (b) the refusal of a transporter to transport waste after arriving at the licensee's premises for the purposes of transporting that waste;
  - (c) a transporter who transports, or attempts to transport, waste without a waste data form completed to the extent required;
  - (d) the refusal of a consignee to accept waste from the licensee;
  - (e) the failure of the licensee to receive written confirmation of receipt of waste from a consignee within 21 days of dispatch, or where a transporter has provided written notification of a revised date of delivery as set out in 05.12 within 21 days of that date;
  - (f) the notification by a transporter of a revised date of delivery which is more than 90 days after the date of dispatch of the waste.
- Note: The EPA should be notified of exception reports by sending a facsimile to:



Manager, Hazardous Waste Regulation

NSW Environment Protection Authority

#### O6 Monitoring of interstate movements of controlled wastes

- O6.1 Conditions O6.2 to O6.11 apply to the movement of the types of hazardous and/or industrial and/or Group A waste as listed in L5.3, into and out of NSW.
- Note: The requirements of the NEPM apply to the interstate movement of any of the wastes listed in Appendix 1 of this licence.

#### Classification of controlled waste

- O6.2 The licensee must accurately identify the waste, in accordance with 04.1, and determine if the waste is a controlled waste within the meaning of the NEPM.
- Note: The waste producer must check with the agency in the State or Territory of destination to determine whether waste is classified as a controlled waste under the NEPM. Unless advised otherwise by the agency of the State or Territory of destination, any waste included in Appendix 1 of this licence is a controlled waste for the purposes of the NEPM.

#### Application for a consignment authorisation

- O6.3 If the waste is transported from the premises to another participating State or Territory, the licensee must comply with all conditions attached to the consignment authorisation issued by an agency or a facility delegated by an agency in the destination State or Territory.
- Note: The waste producer is required by the Protection of the Environment Operations (Waste) Regulation 1996 to obtain, prior to the waste being dispatched, a consignment authorisation from an agency, or a facility delegated by an agency, in the destination State or territory to allow the movement of controlled waste.

#### Waste movements

- O6.4 If the waste is transported from the premises to another participating State or Territory, the licensee must ensure that the waste is transported to a place that can lawfully be used as a waste facility for that waste.
- O6.5 The licensee must ensure that the waste transporter is licensed as required by the agency of each participating State or Territory through which the waste is transported.
- O6.6 The licensee must:
  - (a) retain a copy of the waste transport certificate for the waste for a period of not less than 4 years from the time the form was completed, and
  - (b) make the copy of the waste transport certificate available for inspection by an authorised officer on request.



Note: The waste producer is required by the Protection of the Environment Operations (Waste) Regulation 1996 to complete a waste transport certificate for the waste. This should be done in accordance with the instructions printed on the certificate and the required copy of the waste transport certificate should be forwarded to the agency in the State of destination.

#### Notification of delayed delivery by transporter

O6.7 If the licensee receives written notification from the transporter who removed waste from the licensee's premises specifying a revised date of delivery to the destination which is more than 7 days after the date of dispatch, the licensee must note and record that date.

#### **Record keeping**

- O6.8 The licensee must record and retain all information related to each consignment of waste.
- Note: This includes the waste transport certificates and copies of other documents such as consignment authorisations issued by an agency in the destination State or Territory, notifications of revised delivery dates by transporters, regular and other reports, etc.
- O6.9 The records referred to in 06.8 must be kept so that: (a)all records relating to each consignment authorisation are kept physically together; (b)consignments transported by each transporter can be readily identified and accessed, and (c)consignments sent to each destination can readily be identified and accessed.
  - Note: The licensee must keep all information for at least 4 years.

#### **Exception reporting**

- O6.10 The licensee must notify the EPA in writing within 48 hours of becoming aware of a suspected breach of the Act, the Protection of the Environment Operations (Waste) Regulation 1996 or this licence.
- O6.11 The licensee must notify the EPA in writing within 48 hours of becoming aware of any of the following:
  - (a) the refusal by an agency, or facility delegated by an agency, in participating State or Territory to whom the licensee has applied for a consignment authorisation in accordance with 06.3, to issue such an authorisation;
  - (b) the refusal of a transporter to transport waste after arriving at the licensee's premises for the purposes of transporting that waste to another participating State or Territory to the extent required;
  - (c) a transporter who transports, or attempts to transport, waste to another participating State or Territory without a waste transport certificate completed to the extent required;
  - (d) the refusal of a destination in another participating State or Territory to accept from the licensee waste for which a consignment authorisation has been issued;
  - (e) the failure of the licensee to receive written confirmation of receipt of waste from a destination in another participating State or Territory within 28 days of dispatch.
- Note: The EPA should be notified of exception reports by sending a facsimile to:

Manager, Hazardous Waste Regulation



NSW Environment Protection Authority

#### O7 Clinical and related Wastes

O7.1 The licensee must ensure that the handling, labelling, containment and storage of -clinical wastes are carried out in accordance with the Waste Management

Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health.

- O7.2 Without limiting to O7.1, the licensee must ensure that:
  - (a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment.
  - (b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage.
  - (c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixed or stored with any of the clinical wastes.
  - (d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times.
  - (e) bags and containers used for storage and transport of clinical wastes are
     colour coded and clearly marked with the wording Clinical Wastes along with biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health.
  - (f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected with hospital strength disinfectant before being reused.
  - (g) where second hand containers are used, all other irrelevant markings must be obliterated.

#### O8 Sharps Waste

- O8.1 In addition to O7.1, the licensee must ensure that:
  - (a) sharps are segregated by the use of enclosed rigid impenetrable containers, which comply with Australian Standards AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled Clinical Wastes along with appropriate biohazard symbol.
  - (b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers, which comply with Australian Standards AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled Cytotoxic Wastes along with appropriate biohazard symbol.



(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids and which comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

#### O9 Cytotoxic Waste

O9.1 In addition to O7.1 and O7.2, the licensee must ensure that:

cytotoxic wastes are disposed of at a high temperature incinerator approved by the EPA or a method approved by the EPA and by the NSW Department of Health.

# 5 Monitoring and recording conditions

#### M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
  (a) in a legible form, or in a form that can readily be reduced to a legible form;
  (b) kept for at least 4 years after the monitoring or event to which they relate took place; and
  (c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
  - (a) the date(s) on which the sample was taken;
  - (b) the time(s) at which the sample was collected;
  - (c) the point at which the sample was taken; and
  - (d) the name of the person who collected the sample.

#### M2 Requirement to monitor concentration of pollutants discharged

M2.1 Not applicable.

### M3 Testing methods - concentration limits

- M3.1 Not applicable.
- M3.2 Not applicable.



#### M4 Recording of pollution complaints

- M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M4.2 The record must include details of the following:
  - (a) the date and time of the complaint;
  - (b) the method by which the complaint was made;
  - (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
  - (d) the nature of the complaint;
  - (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
  - (f) if no action was taken by the licensee, the reasons why no action was taken.
- M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

#### M5 Telephone complaints line

- M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
  - (a) the date of the issue of this licence or
  - (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

#### M6 Requirement to monitor volume or mass

- M6.1 Not applicable.
- M6.2 Not applicable.



# 6 Reporting conditions

### R1 Annual return documents

#### What documents must an Annual Return contain?

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
  - (a) a Statement of Compliance; and
  - (b) a Monitoring and Complaints Summary.

A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

#### Period covered by Annual Return

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.
- Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.
- R1.3 Where this licence is transferred from the licensee to a new licensee,
  - (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
  - (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
- Note: An application to transfer a licence must be made in the approved form for this purpose.
- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on
  - (a) in relation to the surrender of a licence the date when notice in writing of approval of the surrender is given; or
  - (b) in relation to the revocation of the licence the date from which notice revoking the licence operates.

#### Deadline for Annual Return

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

#### Notification where actual load can not be calculated

R1.6 Not applicable.

#### Licensee must retain copy of Annual Return



R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

#### Certifying of Statement of Compliance and Signing of Monitoring and Complaints Summary

- R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
  - (a) the licence holder; or
  - (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.
- R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

#### R2 Notification of environmental harm

- Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.
- R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

#### R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
  - (a) where this licence applies to premises, an event has occurred at the premises; or
  - (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

- R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.
- R3.3 The request may require a report which includes any or all of the following information:
  - (a) the cause, time and duration of the event;
  - (b) the type, volume and concentration of every pollutant discharged as a result of the event;
  - (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and
  - (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
  - (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;



- (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;
- (g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

#### R4 Regular reporting of transportation of certain wastes within NSW

R4.1 Conditions R4.2 to R4.5 apply to the transport of hazardous and/or industrial and/or Group A waste within NSW.

#### Regular reporting

- R4.2 The licensee must supply to the EPA, for each transporter that transported waste from the licensees premises, the information as set out in Appendix 2, table 1.
- R4.3 The licensee must supply to the EPA, for each destination within NSW which received waste from the licensee, the information as set out in Appendix 2, table 2.

#### Reporting periods

- R4.4 Reports to the EPA in accordance with R4.2 and R4.3 shall be supplied on or before:
  - (a) 30 April for the reporting of information relating to wastes transported from the premises between 1 January and 31 March of that year;
  - (b) 31 July for the reporting of information relating to wastes transported from the premises between 1 April and 30 June of that year;
  - (c) 31 October for the reporting of information relating to wastes transported from the premises between 1 July and 30 September of that year;
  - (d) 31 January for the reporting of information relating to wastes transported from the premises between 1 October and 31 December of the previous year.

#### Nil reports

R4.5 If waste has not been transported from the premises in any reporting period as set out in R4.4 the EPA must be advised in writing by the licensee, by the dates referred to in R4.4 in lieu of reporting as required in R4.2 and R4.3.

#### R5 Regular reporting of interstate movements of controlled wastes

- R5.1 Conditions R5.2 to R5.5 apply to the movement of hazardous and/or industrial and /or Group A waste as listed in L5.3, into and out of NSW.
- Note: The requirements of the NEPM apply to the interstate movement of any of the wastes listed in Appendix 1 of this licence.



#### **Regular reporting**

R5.2 The licensee must supply to the EPA, for each transporter that transported waste from the premises to a destination in another participating State or Territory, the information as set out in Appendix 2, table 3.

#### **Reporting periods**

- R5.3 Reports to the EPA in accordance with R5.2 shall be supplied on or before:
  - (a) 30 April for the reporting of information relating to wastes transported from the premises between 1 January and 31 March of that year;
  - (b) 31 July for the reporting of information relating to wastes transported from the premises between 1 April and 30 June of that year;
  - (c) 31 October for the reporting of information relating to wastes transported from the premises between 1 July and 30 September of that year;
  - (d) 31 January for the reporting of information relating to wastes transported from the premises between 1 October and 31 December of the previous year.

#### **Nil reports**

R5.4 If waste has not been transported from the premises in any reporting period as set out in R5.3, the EPA must be advised in writing by the licensee, by the dates referred to in R5.3 in lieu of reporting as defined in R5.2.

#### Interstate transport of controlled wastes

R5.5 The licensee must comply with the requirements of the NEPM.

## **General conditions**

- G1 Copy of licence kept at the premises
- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

### **Pollution studies and reduction programs**



U1U.1 Not applicable.

# **Special conditions**

E1.1 Not applicable. E1 Not applicable.

# **Appendices**

### **APPENDIX 1**

#### WASTE DESCRIPTIONS AND CORRESPONDING WASTE CODES

The waste descriptions and waste codes shown below must be used to identify hazardous, industrial and Group A wastes on the waste data form for movements of those wastes within NSW, and to identify controlled wastes on the waste transport certificate for those wastes moved between NSW and other States and Territories. The waste codes must also be used to identify wastes when reporting the information required in the Tables in Appendix 2.

Description	Waste Code	Description	
Acidic solutions or acids in solid form	B100	Organohalogen compounds - other than substances referred to in this list	M160
Animal effluent and residues (abattoir effluent, poultry and fish processing wastes)	K100	Perchlorates	D340
Antimony; antimony compounds	D170	Phenols, phenol compounds including chlorophenols	M150
Arsenic; arsenic compounds	D130	Phosphorus compounds excluding mineral phosphates	D360
Asbestos	N220	Polychlorinated dibenzo-furan (any congener)	M170
Barium compounds (excluding barium sulphate)	D290	Polychlorinated dibenzo-p-dioxin (any congener)	M180
Basic solutions or bases in solid form	C100	Residues from industrial waste treatment/disposal operations	T190
Beryllium; beryllium compounds	D160	Selenium; selenium compounds	D240
Boron compounds	D310	Sewage sludge and residues including nightsoil and septic tank sludge	K130
Cadmium; cadmium compounds	D150	Soils contaminated with a controlled waste	N120
Ceramic-based fibres with physico- chemical characteristics similar to those of asbestos	N230	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
Chlorates	D350	Tannery wastes (including leather dust, ash, sludges and flours)	K140
Chromium compounds (hexavalent and trivalent)	D140	Tellurium; tellurium compounds	D250
Clinical and related wastes	R100	Thallium; thallium compounds	D180
Cobalt compounds	D200	Triethylamine catalysts for setting foundry sands	M230
Containers and drums which are contaminated with residues of substances referred to in this list	N100	Tyres	T140



Copper compounds	D190	Var
Cyanides (inorganic)	A130	Wa
		dev
		are
		hun
Cyanides (organic)	M210	Wa
Encapsulated, chemically-fixed,	N160	Wa
solidified or polymerised wastes		con
Ethers	G100	Wa
		pre
Filter cake	N190	Wa
		biod
Fire debris and fire washwaters	N140	Wa
		dye
Fly ash	N150	Wa
		org
Grease trap waste	K110	Wa
		pho
Halogenated organic solvents	G150	Wa
		late
Highly odorous organic chemicals	M260	Wa
(including mercaptans and acrylates)		pha
Inorganic fluorine compounds excluding calcium fluoride	D110	Wa
Inorganic sulfides	D330	Wa
		em
Isocyanate compounds	M220	Wa
Lead; lead compounds	D220	Wa
····, ···· · · · · · ·	-	plas
Mercury; mercury compounds	D120	Wa
		any
Metal carbonyls	D100	Wa
Nickel compounds	D210	con
Non toxic salts	D300	poly
Organic phosphorous compounds	H110	and
Organic solvents excluding	G110	Wo
halogenated solvents		Zine

	101100
Vanadium compounds	D270
Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
Waste containing peroxides other than hydrogen peroxide	E100
Waste from heat treatment and tempering operations containing cyanides	A110
Waste from manufacture, formulation and use of wood- preserving chemicals	H170
Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
Waste from the production, formulation and use of organic solvents	G160
Waste from the production, formulation and use of photographic chemicals and processing materials	T120
Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
Waste from the production and preparation of pharmaceutical products	R140
Waste mineral oils unfit for their original intended use	J100
Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
Waste pharmaceuticals, drugs and medicines	R120
Waste resulting from surface treatment of metals and plastics	A100
Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated napthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
Wool scouring wastes Zinc compounds	K190 D230
Zinc compounds	D230



### **APPENDIX 2**

#### Table 1

[Table 1 refers to the regular reporting requirements in R4.2. Its purpose is to provide information on the total amount of waste moved by each transporter from waste activities in NSW.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> transporter used by the licensee in the reporting period.

Waste Activities Table 1: Waste Movements By Transporter and Waste Category			
		Waste Activity Licence No.:	
		ANZSIC Code for Waste Activity:	
		Licence No. of Transporter	
lass	Waste Code	Amount of Waste Reporting Per	
lous Non- aste	Code for each waste of this class	Total Weight for cod	
Liquid e	Code	Weight	
	Code	Weight	
n-Liquid ə	Code	Weight	
	Code	Weig	ght
iquid ə	Code	Weig	ght
	ass lous Non- aste	Waste Movements       By Transporter         ass       Image: Code service of this class         lous Non-aste       Code for each waste of this class         Liquid       Code         Image: Code service of this class       Code         Image: Code servic	Waste Movements       By Transporter and Waste Categor         Waste Activity Licence No.:       Waste Activity Licence No.:         ANZSIC Code for Waste Activity:       ANZSIC Code for Waste Activity:         ass       Waste Code         Amount of Waste Reporting Per         ass       Code for each waste of this class         Liquid       Code         Code       Weig         m-Liquid       Code         Code       Weig         m-Liquid       Code         Code       Weig         m-Liquid       Code         Code       Weig         m-Liquid       Code         Code       Weig         iquid       Code



Code	Weight	

[NOTES: **Waste code** refers to the codes listed in Appendix 1 of this licence and entered on the waste transport certificates.

*Waste class* refers to the classification of waste in accordance with Appendix 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.]



#### Table 2:

[Table 2 refers to the reporting requirements in R4.3. Its purpose is to provide information on the total amount of waste sent to each destination within NSW. Cross referencing by ANZSIC code provides data on which types of industry are sending wastes to disposal and treatment facilities.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> destination within NSW used by the licensee in the reporting period for the purposes of the receipt of controlled waste.

Waste Activities Table 2: Waste Movements By Destination (within NSW) and Waste Category				
Name of Licensed Waste Activity:			Waste Activity Licence No.:	
Reporting Period:			ANZSIC Code for Waste Activity	
Destination:				
Waste	class	Waste Code	Amount of Waste Transported in Reporting Period (tonnes)	
Haza Liquid V	rdous Non- Vastes	Code for each waste of this class	Total Weight for waste of each code	
		Code	Weig	ght
Industrial N Was		Code	Weight	
		Code	Weig	ght
Hazardous Liquid Wastes		Code	Weight	
		Code	Weig	ght
Group A Liquid Wastes		Code	Weig	ght

NOTES:



*Waste code* refers to the codes listed in Appendix 1 of this licence and entered on waste data forms. *Waste class* refers to the classification of waste in accordance with Schedule 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.

#### Table 3:

[Table 3 refers to the regular reporting requirements in R5.2. Its purpose is to provide information on the total amounts of controlled wastes sent from NSW licensed waste activities to other States and Territories. Cross-referencing by ANZSIC code allows data on which types of industries are sending wastes interstate.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> destination outside NSW used by the licensee in the reporting period for the purposes of the receipt of controlled waste.

-			Waste Activitie		
	Controlled Waste Movements By Interstate Destination and Waste Category				
Name of Licensed Waste Activity:				Waste Activity Licence No.:	
Reporting Period:					ANZSIC Code Waste Activity:
Destination State or Territory:			Destination Facility		
Waste class		Waste Code			Amount of Waste Transported in Reporting Period (tonnes)
Hazardous Non- Liquid Waste		Code for each waste of this type		e of	Total Weight for waste of this code
			Code		Weight
Industrial Non-Liquid Waste		Code			Weight
	Code			Weight	
Hazardous Liqu Waste	Hazardous Liquid Code Waste			Weight	
Code			Weight		
Group A Liquid Waste	Group A Liquid Code Waste			Weight	


Other Types of Waste	Code	Weight	
(eg Group B and C Liquid			
Wastes, Used Tyres)			

[NOTES: **Waste code** refers to the codes listed in Appendix 1 of this licence and entered on the waste transport certificates.

*Waste class* refers to the classification of waste in accordance with Appendix 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.]

### Dictionary

#### **Model Licence Dictionary**

In this licence, unless the contrary is indicated, the terms below have the following meanings:

Agency	A body or bodies of a participating State or a participating Territory which that State or Territory has nominated for the purposes of the NEPM.
Chemical control order (CCO)	An order under sections 22 and 23 of the Environmentally Hazardous Chemicals Act 1985.
Consignee	The person to whom the waste is dispatched, and includes:
	(a) in the case of a waste facility that is licensed - the occupier;
	<ul> <li>(b) in the case of a person carrying on mobile waste processing that is licensed - the person operating the mobile place;</li> </ul>
	(c) in the case of a place that can be otherwise lawfully be used as a waste facility for that waste - the owner or occupier of that place.
Consignment	One or more shipments of a specified waste dispatched to a particular destination.
Consignment authorisation	An approval which includes a unique identifier granted by an agency, or a facility delegated by an agency, in the jurisdiction of destination to allow the movement of controlled waste.
Controlled waste	Any waste included in List 1 of Schedule A of the NEPM, provided that the waste possesses one or more of the characteristics in List 2, of Schedule A of the NEPM.
Date of dispatch	The date on which a load of waste is removed from the premises.
Destination	Where hazardous, industrial or Group A wastes are transported within NSW, the place described in the waste data form as the destination for the waste.
	Where controlled wastes are transported between NSW and another participating State or Territory, the place described in Part 3 of the waste transport certificate as the facility receiving the waste.
Facility	A place where controlled wastes are received.
Facility Operator	A person in charge of a facility.
Jurisdiction of destination	In relation to a particular consignment of waste means the State or Territory in which the facility is located to which the waste is intended to be transported.



Load	The amount of a consignment of waste placed on a vehicle for any single dispatch from the premises at which it was generated or stored.
Load number	A consecutive number identifying each load of waste within a consignment and starting with 1 for the first load of each consignment. One or more loads may make up a consignment.
NEPM	The National Environment Protection (Movement of Controlled Wastes between States and Territories) Measure 1998.
Non-liquid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997.
Participating State or Territory	<ul> <li>A State or Territory that is</li> <li>(a) a party to the Intergovernmental Agreement on the Environment made on 1 May 1992 between the Commonwealth, the States, the Australian Capital Territory, the Northern Territory and the Australian Local Government Association, a copy of which is set out in the Schedule to the Commonwealth Act; and</li> <li>(b) in which an Act that corresponds to the National Environment Protection Council Act 1994 of the Commonwealth is in force in accordance with the Agreement.</li> </ul>
Recycling of waste	The processing of waste into a similar non-waste product.
Regulation	The Protection of the Environment Operations (Waste) Regulation 1996.
Transporter	A person responsible for moving controlled wastes either from one participating State or Territory to another or through participating States or Territories.
Waste activity	<ul> <li>An activity, whether required to be licensed or not, carried on for business or other commercial purposes, that involves the generating or storage of any of the following waste classes:</li> <li>(a) hazardous waste,</li> <li>(b) industrial waste,</li> <li>(c) Group A waste.</li> </ul>
Waste class	Means either hazardous, industrial or Group A waste.
Waste data form	A certificate in the form approved by the EPA.
Waste guidelines	The document called <i>"Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes"</i> issued by the EPA and in force as at 1 July 1999.
Waste producer	Means the licensee.
Waste transport certificate	A certificate in the form approved by the EPA as fulfilling the requirements of Schedule B of the National Environment Protection (Movement of Controlled Wastes between States and Territories) Measure 1998.

#### **General Dictionary**



#### In this licence, unless the contrary is indicated, the terms below have the following meanings:

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
BOD	Means biochemical oxygen demand
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 1998.
flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
industrial waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
inert waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998



local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
reprocessing of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
treatment of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TSP	Means total suspended particles
TSS	Means total suspended solids
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste code	Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B.
waste type	Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste



Mr Tim Gilbert

Principal Officer Environment Protection Authority

(By Delegation)

03-Feb-2000

Environment Protection Licence - Protection of the Environment Operations Act 1997

Licence Variation

Section 58(5) Protection of the Environment Operations Act 1997

# E P A

### **End Notes**

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Licence DetailsNumber:6370Anniversary Date:22-OctoberReview Due Date:24-Mar-2010

#### <u>Licensee</u>

SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE 125 BIRRELL STREET WAVERLEY NSW 2024

Licence Type

Premises

#### **Premises**

WAR MEMORIAL HOSPITAL WAVERLEY 125 BIRRELL STREET WAVERLEY NSW 2024

#### Scheduled Activity

Waste Activities

Fee Based Activity	<u>Scale</u>
Hazardous, Industrial or Group A Waste Generation or Storage (73)	0 - 10 T

Region
Waste Operations
59-61 Goulburn Street
SYDNEY NSW 2000
Phone: 02 9995 5000
Fax: 02 9995 5999
PO Box A290 SYDNEY SOUTH
NSW 1232



Department of Environment & Climate Change NSW

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### Information about this licence

#### Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

#### **Responsibilities of licensee**

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

#### Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

#### Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

#### Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

#### Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication "A Guide to Licensing" contains information about how to calculate your licence fees.

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The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

#### Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

#### Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

#### This licence is issued to:

SOUTH EASTERN SYDNEY AND ILLAWARRA AREA HEALTH SERVICE 125 BIRRELL STREET WAVERLEY NSW 2024

subject to the conditions which follow.

### **1** Administrative conditions

#### A1 What the licence authorises and regulates

- A1.1 Not applicable.
- A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-

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based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

#### **Scheduled Activity**

Waste Activities

Fee Based Activity	Scale
Hazardous, Industrial or Group A Waste Generation	0 - 10 T
or Storage (73)	

A1.3 Not applicable.

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#### A2 Premises to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
WAR MEMORIAL HOSPITAL WAVERLEY
125 BIRRELL STREET
WAVERLEY
NSW
2024
DP 2,4,5,6,7 PT99//4993, 1//172133, B//317831,
1//567694, 3//667555, 1//948186, 99DP4993

#### A3 Other activities

A3.1 Not applicable.

#### A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

### 2 Discharges to air and water and applications to land

#### P1 Location of monitoring/discharge points and areas

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- P1.1 Not applicable.
- P1.2 Not applicable.
- P1.3 Not applicable.

### 3 Limit conditions

#### L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

#### L2 Load limits

- L2.1 Not applicable.
- L2.2 Not applicable.

#### L3 Concentration limits

- L3.1 Not applicable.
- L3.2 Not applicable.
- L3.3 Not applicable.

#### L4 Volume and mass limits

L4.1 Not applicable.

#### L5 Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

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- L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.
- L5.3 Except as provided by any other condition of this licence, only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored at the premises.

Clinical and related wastes. [R100]

L5.4 The quantity of hazardous/and/or industrial and/or Group A waste generated and/or stored on the premises must not exceed 10 tonnes per year.

#### L6 Noise Limits

L6.1 Not applicable.

#### L7 Potentially offensive odour

- L7.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.
- Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

### 4 **Operating conditions**

#### O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

#### O2 Maintenance of plant and equipment

- O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity: (a) must be maintained in a proper and efficient condition; and
  - (b) must be operated in a proper and efficient manner.

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#### O3 Emergency response

O3.1 Within 3 months of the date of the issue of the licence, the licensee must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (eg spill, explosions or fire) that may occur at the premises or outside of the premises (eg during transfer) which are likely to cause harm to the environment.

#### O4 Processes and management

- O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes, in force as at 1 July 1999.
- O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

#### O5 Monitoring of waste movements within NSW

O5.1 Conditions O5.2 to O5.16 apply to the movement of the types of hazardous and/or industrial and/or Group A waste as listed in L5.3, within NSW.

#### Prerequisites for waste movements

- O5.2 If the waste is transported from the premises, the licensee must ensure that the waste is transported:
  - (a) to a place which has been licensed by the EPA to issue consignment authorisation numbers; and
  - (b) to a place that can otherwise lawfully accept that class of waste.
- O5.3 If the waste is transported from the premises, the licensee must;
  - (a) obtain a consignment authorisation number from the consignee;
  - (b) complete an approved waste data form in relation to the consigned waste in accordance with the instructions on the form and to the extent required, and give a copy of the form to the person transporting the waste;
  - (c) ensure that the waste data form:
    - (i) is completed accurately, and
    - (ii) is retained for a period of not less than 4 years from the time the form was completed, and (iii) is made available for inspection by an authorised officer on request:
  - (d) ensure, if the waste is of such an amount as to require the person transporting it to be licensed, that the person transporting the waste is licensed.

#### Application for a consignment authorisation number

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Department of Environment & Climate Change NSW

- O5.4 To obtain a consignment authorisation number as required by 05.3 (a), the licensee must apply in writing to the consignee. An application must include the following information:
  - (a) a statement identifying the classification of the waste in accordance with the requirements of condition 04.1;
  - (b) copies of all information used to classify the waste;
  - (c) an estimate of the amount of waste to which the application applies;
  - (d) whether the consignment will consist a single load or multiple loads;
  - (e) an estimate of the total period required for transportation of the consignment;
  - (f) the date of dispatch of at least the first load in the consignment.
- Note: The licensee may nominate the dates of dispatch of as many loads as is feasible. This should be discussed with the consignee and will depend on the predictability of the rate of generation of the waste and the likelihood of the need for amendments to the dates nominated. If the waste is predictable, a schedule may be able to be submitted for the entire consignment, however if it is unpredictable, the date of only one future load may be able to be determined at a time (see also 05.9 about amending notified dates).
- Note: The requirement for a written application for a consignment authorisation number does not preclude preliminary contact to obtain quotes and/or advice. Such preliminary contact does not require the formal provision of the above information that need only be supplied in the formal application.
- O5.5 Once an application for a consignment authorisation number, as set out in 05.4 has been submitted, the licensee must not submit an application for the same consignment to another consignee until notification is received concerning the outcome of the application.

#### Notification of dates of dispatch of the second and subsequent loads in a consignment.

- O5.6 The licensee must provide the consignee with written notification of the date of dispatch of each load of waste.
- O5.7 The notification referred to in 05.6 must be received by consignee no later than the date of arrival of the preceding load at the destination.

#### Notification of a final load in a consignment.

- O5.8 Unless the movement of an entire consignment of waste occurs in a single load, by the time the final load in a consignment is accepted at the destination, the licensee must have informed the consignee in writing, that no further loads are to be dispatched under that consignment authorisation number.
- Note: The notifications referred to in conditions 05.6 and 05.8 may be attached to the waste data form of the preceding load.

#### Amendments to the nominated date(s) of dispatch

O5.9 If the date of dispatch for a load of waste is changed, the licensee must give written notification of this to the consignee and nominate a revised date of dispatch.

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- O5.10 A notification referred to in 05.9 must occur on or before the date of delivery as previously nominated.
- Note: More than one amendment to dates of dispatch may occur.

#### Cancellation of consignment authorisations

O5.11 If the licensee determines that the delivery of a consignment of waste is to be discontinued for any reason, the consignee must be notified in writing before the nominated date of dispatch of the next expected load.

#### Notification of delayed delivery by transporter

O5.12 If the licensee receives written notification from a transporter who removed waste from the premises specifying a revised date of delivery to the destination which is more than 7 days after the date of dispatch, the licensee must note and record that date.

#### Record keeping

- O5.13 The licensee must record and retain all information related to each consignment of waste.
- Note: This includes waste data forms and copies of other documents such as notifications of revised delivery dates, regular and other reports, etc.
- O5.14 The records referred to in 05.13 must be kept so that:
  - (a) all records relating to individual consignment authorisation numbers are kept physically together;
  - (b) consignments transported by each transporter can be readily identified and accessed; and
  - (c) consignments sent to each destination can readily be identified and accessed.
- Note: The licensee must keep all information for at least 4 years.

#### Exception reporting

- O5.15 The licensee must notify the EPA, in writing, within 48 hours of becoming aware of any suspected breaches of the Act, the Protection of the Environment Operations (Waste) Regulation 1996 or this licence.
- O5.16 The licensee must notify the EPA in writing within 48 hours of becoming aware of any of the following:
  - (a) the refusal by a person to whom the licensee has applied for a consignment authorisation number in accordance with 05.4 to issue such a number;
  - (b) the refusal of a transporter to transport waste after arriving at the licensee's premises for the purposes of transporting that waste;
  - (c) a transporter who transports, or attempts to transport, waste without a waste data form completed to the extent required;
  - (d) the refusal of a consignee to accept waste from the licensee;

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- (e) the failure of the licensee to receive written confirmation of receipt of waste from a consignee within 21 days of dispatch, or where a transporter has provided written notification of a revised date of delivery as set out in 05.12 within 21 days of that date;
- (f) the notification by a transporter of a revised date of delivery which is more than 90 days after the date of dispatch of the waste.
- Note: The EPA should be notified of exception reports by sending a facsimile to:

Manager, Hazardous Waste Regulation

NSW Environment Protection Authority

#### O6 Monitoring of interstate movements of controlled wastes

- O6.1 Conditions O6.2 to O6.11 apply to the movement of the types of hazardous and/or industrial and/or Group A waste as listed in L5.3, into and out of NSW.
- Note: The requirements of the NEPM apply to the interstate movement of any of the wastes listed in Appendix 1 of this licence.

#### Classification of controlled waste

- O6.2 The licensee must accurately identify the waste, in accordance with 04.1, and determine if the waste is a controlled waste within the meaning of the NEPM.
- Note: The waste producer must check with the agency in the State or Territory of destination to determine whether waste is classified as a controlled waste under the NEPM. Unless advised otherwise by the agency of the State or Territory of destination, any waste included in Appendix 1 of this licence is a controlled waste for the purposes of the NEPM.

#### Application for a consignment authorisation

- O6.3 If the waste is transported from the premises to another participating State or Territory, the licensee must comply with all conditions attached to the consignment authorisation issued by an agency or a facility delegated by an agency in the destination State or Territory.
- Note: The waste producer is required by the Protection of the Environment Operations (Waste) Regulation 1996 to obtain, prior to the waste being dispatched, a consignment authorisation from an agency, or a facility delegated by an agency, in the destination State or territory to allow the movement of controlled waste.

#### Waste movements

- O6.4 If the waste is transported from the premises to another participating State or Territory, the licensee must ensure that the waste is transported to a place that can lawfully be used as a waste facility for that waste.
- O6.5 The licensee must ensure that the waste transporter is licensed as required by the agency of each

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participating State or Territory through which the waste is transported.

- O6.6 The licensee must:
  - (a) retain a copy of the waste transport certificate for the waste for a period of not less than 4 years from the time the form was completed, and
  - (b) make the copy of the waste transport certificate available for inspection by an authorised officer on request.
- Note: The waste producer is required by the Protection of the Environment Operations (Waste) Regulation 1996 to complete a waste transport certificate for the waste. This should be done in accordance with the instructions printed on the certificate and the required copy of the waste transport certificate should be forwarded to the agency in the State of destination.

#### Notification of delayed delivery by transporter

O6.7 If the licensee receives written notification from the transporter who removed waste from the licensee's premises specifying a revised date of delivery to the destination which is more than 7 days after the date of dispatch, the licensee must note and record that date.

#### Record keeping

- O6.8 The licensee must record and retain all information related to each consignment of waste.
- Note: This includes the waste transport certificates and copies of other documents such as consignment authorisations issued by an agency in the destination State or Territory, notifications of revised delivery dates by transporters, regular and other reports, etc.
- O6.9 The records referred to in 06.8 must be kept so that:
  - (a) all records relating to each consignment authorisation are kept physically together;
  - (b) consignments transported by each transporter can be readily identified and accessed, and
  - (c) consignments sent to each destination can readily be identified and accessed.
  - Note: The licensee must keep all information for at least 4 years.

#### Exception reporting

- O6.10 The licensee must notify the EPA in writing within 48 hours of becoming aware of a suspected breach of the Act, the Protection of the Environment Operations (Waste) Regulation 1996 or this licence.
- O6.11 The licensee must notify the EPA in writing within 48 hours of becoming aware of any of the following:
  - (a) the refusal by an agency, or facility delegated by an agency, in participating State or Territory to whom the licensee has applied for a consignment authorisation in accordance with 06.3, to issue such an authorisation;
  - (b) the refusal of a transporter to transport waste after arriving at the licensee's premises for the purposes of transporting that waste to another participating State or Territory to the extent required;

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- (c) a transporter who transports, or attempts to transport, waste to another participating State or Territory without a waste transport certificate completed to the extent required;
- (d) the refusal of a destination in another participating State or Territory to accept from the licensee waste for which a consignment authorisation has been issued;
- (e) the failure of the licensee to receive written confirmation of receipt of waste from a destination in another participating State or Territory within 28 days of dispatch.
- Note: The EPA should be notified of exception reports by sending a facsimile to:

Manager, Hazardous Waste Regulation NSW Environment Protection Authority

#### O7 Clinical and related Wastes

- O7.1 The licensee must ensure that the handling, labelling, containment and storage of clinical wastes are carried out in accordance with the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health.
- O7.2 Without limiting to O7.1, the licensee must ensure that:
  - (a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment.
  - (b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage.
  - (c) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times.
  - (e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording Clinical Wastes along with biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health.
  - (f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected with hospital strength disinfectant before being reused.
  - (g) where second hand containers are used, all other irrelevant markings must be obliterated.

#### O8 Sharps Waste

- O8.1 In addition to O7.1, the licensee must ensure that:
  - (a) sharps are segregated by the use of enclosed rigid impenetrable containers, which comply with Australian Standards AS/NZS 4031-1992 (non-reusable containers) and 4261-1994

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(reusable containers) before disposal in waste bags labelled Clinical Wastes along with appropriate biohazard symbol.

- (b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers, which comply with Australian Standards AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled Cytotoxic Wastes along with appropriate biohazard symbol.
- (c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids and which comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

#### O9 Cytotoxic Waste

O9.1 In addition to O7.1 and O7.2, the licensee must ensure that:

cytotoxic wastes are disposed of at a high temperature incinerator approved by the EPA or a method approved by the EPA and by the NSW Department of Health.

### 5 Monitoring and recording conditions

#### M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
  - (a) in a legible form, or in a form that can readily be reduced to a legible form;
  - (b) kept for at least 4 years after the monitoring or event to which they relate took place; and
  - (c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
  - (a) the date(s) on which the sample was taken;
  - (b) the time(s) at which the sample was collected;
  - (c) the point at which the sample was taken; and
  - (d) the name of the person who collected the sample.

#### M2 Requirement to monitor concentration of pollutants discharged

M2.1 Not applicable.

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#### M3 Testing methods - concentration limits

- M3.1 Not applicable.
- M3.2 Not applicable.

#### M4 Recording of pollution complaints

- M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M4.2 The record must include details of the following:
  - (a) the date and time of the complaint;
  - (b) the method by which the complaint was made;
  - (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
  - (d) the nature of the complaint;
  - (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
  - (f) if no action was taken by the licensee, the reasons why no action was taken.
- M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

#### M5 Telephone complaints line

- M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M5.3 Conditions M5.1 and M5.2 do not apply until 3 months after:
  - (a) the date of the issue of this licence or
  - (b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

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#### M6 Requirement to monitor volume or mass

- M6.1 Not applicable.
- M6.2 Not applicable.

### 6 Reporting conditions

#### R1 Annual return documents

#### What documents must an Annual Return contain?

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
  - (a) a Statement of Compliance; and
  - (b) a Monitoring and Complaints Summary.

A copy of the form in which the Annual Return must be supplied to the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

#### Period covered by Annual Return

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.
- Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.
- R1.3 Where this licence is transferred from the licensee to a new licensee:
  - (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
  - (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
- Note: An application to transfer a licence must be made in the approved form for this purpose.
- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
  - (a) in relation to the surrender of a licence the date when notice in writing of approval of the surrender is given; or
  - (b) in relation to the revocation of the licence the date from which notice revoking the licence operates.

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#### **Deadline for Annual Return**

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

#### Notification where actual load can not be calculated

R1.6 Not applicable.

#### Licensee must retain copy of Annual Return

R1.7 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

#### Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

- R1.8 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
  - (a) the licence holder; or
  - (b) by a person approved in writing by the EPA to sign on behalf of the licence holder.
- R1.9 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

#### R2 Notification of environmental harm

- Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.
- R2.1 Notifications must be made by telephoning the EPA's Pollution Line service on 131 555.
- R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

#### R3 Written report

- R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
  - (a) where this licence applies to premises, an event has occurred at the premises; or
  - (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,

and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

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R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

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- R3.3 The request may require a report which includes any or all of the following information:
  - (a) the cause, time and duration of the event;
  - (b) the type, volume and concentration of every pollutant discharged as a result of the event;
  - (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
  - (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
  - (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
  - (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
  - (g) any other relevant matters.
- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

#### R4 Regular reporting of transportation of certain wastes within NSW

R4.1 Conditions R4.2 to R4.5 apply to the transport of hazardous and/or industrial and/or Group A waste within NSW.

#### Regular reporting

- R4.2 The licensee must supply to the EPA, for each transporter that transported waste from the licensees premises, the information as set out in Appendix 2, table 1.
- R4.3 The licensee must supply to the EPA, for each destination within NSW which received waste from the licensee, the information as set out in Appendix 2, table 2.

#### Reporting periods

- R4.4 Reports to the EPA in accordance with R4.2 and R4.3 shall be supplied on or before:
  - (a) 30 April for the reporting of information relating to wastes transported from the premises between 1 January and 31 March of that year;
  - (b) 31 July for the reporting of information relating to wastes transported from the premises between 1 April and 30 June of that year;
  - (c) 31 October for the reporting of information relating to wastes transported from the premises between 1 July and 30 September of that year;
  - (d) 31 January for the reporting of information relating to wastes transported from the premises between 1 October and 31 December of the previous year.

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Nil reports

R4.5 If waste has not been transported from the premises in any reporting period as set out in R4.4 the EPA must be advised in writing by the licensee, by the dates referred to in R4.4 in lieu of reporting as required in R4.2 and R4.3.

#### R5 Regular reporting of interstate movements of controlled wastes

- R5.1 Conditions R5.2 to R5.5 apply to the movement of hazardous and/or industrial and /or Group A waste as listed in L5.3, into and out of NSW.
- Note: The requirements of the NEPM apply to the interstate movement of any of the wastes listed in Appendix 1 of this licence.

#### Regular reporting

R5.2 The licensee must supply to the EPA, for each transporter that transported waste from the premises to a destination in another participating State or Territory, the information as set out in Appendix 2, table 3.

#### Reporting periods

- R5.3 Reports to the EPA in accordance with R5.2 shall be supplied on or before:
  - (a) 30 April for the reporting of information relating to wastes transported from the premises between 1 January and 31 March of that year;
  - (b) 31 July for the reporting of information relating to wastes transported from the premises between 1 April and 30 June of that year;
  - (c) 31 October for the reporting of information relating to wastes transported from the premises between 1 July and 30 September of that year;
  - (d) 31 January for the reporting of information relating to wastes transported from the premises between 1 October and 31 December of the previous year.

#### Nil reports

R5.4 If waste has not been transported from the premises in any reporting period as set out in R5.3, the EPA must be advised in writing by the licensee, by the dates referred to in R5.3 in lieu of reporting as defined in R5.2.

#### Interstate transport of controlled wastes

R5.5 The licensee must comply with the requirements of the NEPM.

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### **General conditions**

- G1 Copy of licence kept at the premises
- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

### Pollution studies and reduction programs

U1.1 Not applicable.

### **Special conditions**

E1.1 Not applicable.

### Appendices

#### **APPENDIX 1**

#### WASTE DESCRIPTIONS AND CORRESPONDING WASTE CODES

The waste descriptions and waste codes shown below must be used to identify hazardous, industrial and Group A wastes on the waste data form for movements of those wastes within NSW, and to identify controlled wastes on the waste transport certificate for those wastes moved between NSW and other States and Territories. The waste codes must also be used to identify wastes when reporting the information required in the Tables in Appendix 2.

Description	Waste Code	Description	Waste Code
Acidic solutions or acids in solid form	B100	Organohalogen compounds - other than substances referred to in this list	M160
Animal effluent and residues (abattoir effluent, poultry and fish processing	K100	Perchlorates	D340

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wastes) Antimony; antimony compounds	D170
Arsenic; arsenic compounds	D130
Asbestos	N220
Barium compounds (excluding barium sulphate)	D290
Basic solutions or bases in solid form	C100
Beryllium; beryllium compounds	D160
Boron compounds	D310
Cadmium; cadmium compounds	D150
Ceramic-based fibres with physico- chemical characteristics similar to those of asbestos	N230
Chlorates	D350
Chromium compounds (hexavalent and trivalent)	D140
Clinical and related wastes	R100
Cobalt compounds	D200
Containers and drums which are contaminated with residues of substances referred to in this list	N100
Copper compounds	D190
Cyanides (inorganic)	A130
Cyanides (organic)	M210
Encapsulated, chemically-fixed, solidified or polymerised wastes	N160
Ethers	G100
Filter cake	N190
Fire debris and fire washwaters	N140
Fly ash	N150
Grease trap waste	K110
Halogenated organic solvents	G150
Highly odorous organic chemicals	M260
(including mercaptans and acrylates) Inorganic fluorine compounds excluding calcium fluoride	D110
Inorganic sulfides	D330
Isocyanate compounds	M220
Lead; lead compounds	D220
Mercury; mercury compounds	D120
Metal carbonyls	D100
Nickel compounds	D210
	D300
Non toxic salts	H110
Non toxic salts Organic phosphorous compounds Organic solvents excluding	H110 G110

Phenols, phenol compounds including chlorophenols	M150
Phosphorus compounds excluding mineral phosphates	D360
Polychlorinated dibenzo-furan (any congener)	M170
Polychlorinated dibenzo-p-dioxin (any congener)	M180
Residues from industrial waste treatment/disposal operations	T190
Selenium; selenium compounds	D240
Sewage sludge and residues including nightsoil and septic tank sludge	K130
Soils contaminated with a controlled waste	N120
Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
Tannery wastes (including leather dust, ash, sludges and flours)	K140
Tellurium; tellurium compounds	D250
Thallium; thallium compounds	D180
Triethylamine catalysts for setting foundry sands	M230
Tyres	T140
Vanadium compounds	D270
Waste chemical substances arising from research and development or teaching activities including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
Waste containing peroxides other than hydrogen peroxide	E100
Waste from heat treatment and tempering operations containing cyanides	A110
Waste from manufacture, formulation and use of wood- preserving chemicals	H170
Waste from the production, formulation and use of biocides and phytopharmaceuticals	H100
Waste from the production, formulation and use of inks,	F100
dyes, pigments, paints, lacquers and varnish Waste from the production, formulation and use of	G160
organic solvents Waste from the production, formulation and use of	T120
photographic chemicals and processing materials Waste from the production, formulation and use of resins,	F110
latex, plasticisers, glues and adhesives Waste from the production and preparation of	R140
pharmaceutical products Waste mineral oils unfit for their original intended use	J100
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Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
Waste pharmaceuticals, drugs and medicines	R120
Waste resulting from surface treatment of metals and plastics	A100
Waste tarry residues arising from refining, distillation, and any pyrolytic treatment	J160
Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated napthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
Wool scouring wastes Zinc compounds	K190 D230

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**APPENDIX 2** 

#### Table 1

[Table 1 refers to the regular reporting requirements in R4.2. Its purpose is to provide information on the total amount of waste moved by each transporter from waste activities in NSW.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> transporter used by the licensee in the reporting period.

Waste Activities Table 1: Waste Movements By Transporter and Waste Category					
Name of Licensed Waste			Waste Activity Licence No.:		
Activity:					
Reporting Period:			ANZSIC Code for Waste Activity:		
Name of Transporter:			Licence No. of Transporter		
Waste	class	Waste Code	Amount of Waste Transported in Reporting Period (tonnes)		
Hazardous Non- Liquid Waste		Code for each waste of this class	Total Weight for cod		
Hazardous Liquid Waste		Code	Weig	ght	
		Code	Weight		
Industrial Non-Liquid Waste		Code	Weight		
		Code	Weig	ght	
Group A Liquid Waste		Code	Weig	ght 	

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	Code		Weight	

[NOTES: **Waste code** refers to the codes listed in Appendix 1 of this licence and entered on the waste transport certificates.

*Waste class* refers to the classification of waste in accordance with Appendix 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.]

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#### Table 2:

[Table 2 refers to the reporting requirements in R4.3. Its purpose is to provide information on the total amount of waste sent to each destination within NSW. Cross referencing by ANZSIC code provides data on which types of industry are sending wastes to disposal and treatment facilities.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> destination within NSW used by the licensee in the reporting period for the purposes of the receipt of controlled waste.

Waste Activities Table 2: Waste Movements By Destination (within NSW) and Waste Category					
Name of Licensed Waste Activity:			Waste Activity Licence No.:		
Reporting Period:			ANZSIC Code for Waste Activity		
Destination:				·	
Waste	class	Waste Code	Amount of Waste Reporting Per		
Hazardous Non- Liquid Wastes		Code for each waste of this class	Total Weight for waste of each code		
		Code	Wei	ght	
Industrial N Was		Code	Weight		
		Code	Weight		
Hazardou Was		Code	Weight		
		Code	Wei	ght	
Group A Was		Code	Weig	ght	

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NOTES:

*Waste code* refers to the codes listed in Appendix 1 of this licence and entered on waste data forms. *Waste class* refers to the classification of waste in accordance with Schedule 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.

#### Table 3:

[Table 3 refers to the regular reporting requirements in R5.2. Its purpose is to provide information on the total amounts of controlled wastes sent from NSW licensed waste activities to other States and Territories. Cross-referencing by ANZSIC code allows data on which types of industries are sending wastes interstate.]

1. The licensee must provide a copy of the information in the following table for <u>each</u> destination outside NSW used by the licensee in the reporting period for the purposes of the receipt of controlled waste.

			Waste Activities			
Cont	trolled Waste	Moveme	ents By Interstate	Destination and	d Waste Category	
Name of Licensed Waste Activity:				Waste Activit Licence No.:	ty	
Reporting Period:				ANZSIC Code Waste Activit		
Destination or Territory:	State		Destination Facility			
Waste	e class		Waste Code		Vaste Transported in g Period (tonnes)	
	Hazardous Non- Guid Waste Code for each waste of this type		Total Weight for waste of this code			
			Code		Weight	
	Non-Liquid aste		Code	Weight		
			Code		Weight	
	ous Liquid aste		Code	Weight		
			Code		Weight	
	A Liquid aste		Code	Weight		

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Other Types of Waste (eg Group B and C Liquid Wastes, Used Tyres)	Code	Weight	

[NOTES: **Waste code** refers to the codes listed in Appendix 1 of this licence and entered on the waste transport certificates.

*Waste class* refers to the classification of waste in accordance with Appendix 1 of the Protection of the Environment Operations Act 1997 and its regulations.

**ANZSIC code** means the Australian and New Zealand Standard Industrial Classification code published by the Australian Bureau of Statistics.]

### Dictionary

#### **Model Licence Dictionary**

In this licence, unless the contrary is indicated, the terms below have the following meanings:

Agency	A body or bodies of a participating State or a participating Territory which that State or Territory has nominated for the purposes of the NEPM.
Chemical control order (CCO)	An order under sections 22 and 23 of the Environmentally Hazardous Chemicals Act 1985.
Consignee	The person to whom the waste is dispatched, and includes:
	(a) in the case of a waste facility that is licensed - the occupier;
	<ul> <li>(b) in the case of a person carrying on mobile waste processing that is licensed - the person operating the mobile place;</li> </ul>
	(c) in the case of a place that can be otherwise lawfully be used as a waste facility for that waste - the owner or occupier of that place.
Consignment	One or more shipments of a specified waste dispatched to a particular destination.
Consignment authorisation	An approval which includes a unique identifier granted by an agency, or a facility delegated by an agency, in the jurisdiction of destination to allow the movement of controlled waste.
Controlled waste	Any waste included in List 1 of Schedule A of the NEPM, provided that the waste possesses one or more of the characteristics in List 2, of Schedule A of the NEPM.
Date of dispatch	The date on which a load of waste is removed from the premises.
Destination	Where hazardous, industrial or Group A wastes are transported within NSW, the place described in the waste data form as the destination for the waste.
	Where controlled wastes are transported between NSW and another participating State or Territory, the place described in Part 3 of the waste transport certificate as the facility receiving the waste.
Facility	A place where controlled wastes are received.

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**Facility Operator** A person in charge of a facility. Jurisdiction of In relation to a particular consignment of waste means the State or Territory in which destination the facility is located to which the waste is intended to be transported. Load The amount of a consignment of waste placed on a vehicle for any single dispatch from the premises at which it was generated or stored. Load number A consecutive number identifying each load of waste within a consignment and starting with 1 for the first load of each consignment. One or more loads may make up a consignment. NEPM The National Environment Protection (Movement of Controlled Wastes between States and Territories) Measure 1998. Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Non-liquid waste Operations Act 1997. Participating A State or Territory that is State or Territory a party to the Intergovernmental Agreement on the Environment made on 1 May (a) 1992 between the Commonwealth, the States, the Australian Capital Territory, the Northern Territory and the Australian Local Government Association, a copy of which is set out in the Schedule to the Commonwealth Act; and in which an Act that corresponds to the National Environment Protection Council (b) Act 1994 of the Commonwealth is in force in accordance with the Agreement. **Recycling of** The processing of waste into a similar non-waste product. waste Regulation The Protection of the Environment Operations (Waste) Regulation 1996. Transporter A person responsible for moving controlled wastes either from one participating State or Territory to another or through participating States or Territories. Waste activity An activity, whether required to be licensed or not, carried on for business or other commercial purposes, that involves the generating or storage of any of the following waste classes: (a) hazardous waste, (b) industrial waste, (c) Group A waste. Waste class Means either hazardous, industrial or Group A waste. Waste data form A certificate in the form approved by the EPA. Waste guidelines The document called "Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes" issued by the EPA and in force as at 1 July 1999. Waste producer Means the licensee. A certificate in the form approved by the EPA as fulfilling the requirements of Schedule Waste transport certificate B of the National Environment Protection (Movement of Controlled Wastes between States and Territories) Measure 1998.

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General Dictionary

In this licence, unless the contrary is indicated, the terms below have the following meanings: 3DGM [in relation to Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or a concentration more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit limit1 respectively should be used in place of those samples Act Means the Protection of the Environment Operations Act 1997 activity Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment **Operations Act 1997** actual load Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 AM Together with a number, means an ambient air monitoring method of that number prescribed by the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales. AMG Australian Map Grid anniversary date The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act. annual return Is defined in R1.1 **Approved Methods** Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 Publication assessable Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998 pollutants BOD Means biochemical oxygen demand CEM Together with a number, means a continuous emission monitoring method of that number prescribed by the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales. COD Means chemical oxygen demand Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples composite sample collected at hourly intervals and each having an equivalent volume. cond. Means conductivity environment Has the same meaning as in the Protection of the Environment Operations Act 1997 Has the same meaning as in the Protection of the Environment Administration Act 1991 environment protection legislation EPA Means Environment Protection Authority of New South Wales. fee-based activity Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations classification (General) Regulation 1998. flow weighted Means a sample whose composites are sized in proportion to the flow at each composites time of composite sample collection. grab sample Means a single sample taken at a point at a single time
# **Environment Protection Licence**

Licence - 6370

hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
industrial waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
inert waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 1998
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
reprocessing of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
тм	Together with a number, means a test method of that number prescribed by the Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.
treatment of waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

1997

# **Environment Protection Licence**

Licence - 6370

Department of Environment & Climate Change NSW

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste code	Means the waste codes listed in Appendix 5 of the EPA document A Guide to Licensing Part B.
waste type	Means Group A, Group B, Group C, inert, solid, industrial or hazardous waste

Mr Tim Gilbert

**Environment Protection Authority** 

(By Delegation)

Date of this edition - 18-Apr-2005

# **End Notes**

1 Licence varied by notice 1044609, issued on 24-Mar-2005, which came into effect on 18-Apr-2005.

			Activity that caused	s60 Form	EPA Initial	EPA Management
Suburb/City	Site Description	Site Address	the contamination	Received	Assessment	Class
Warrawong	Caltex Service Station	75-77 King St	Service Station	Yes	In progress	В
Warren	Caltex Service Station	1 Coonamble Road	Service Station	Yes	In progress	В
Warren	Former Mobil Warren Depot	16 Dubbo Street	Other Petroleum	Yes	Completed	S
Warren	Former Shell Depot	8 Dubbo Street	Other Petroleum	Yes	Completed	T
Waterloo	Lawrence Dry Cleaners	887-893 Bourke Street	Unclassified	Yes	Completed	U
Waterloo	Proposed Construction Site	2 John Street	Other Industry	Yes	Completed	U
	Shell Coles Express Service					
Waterloo	Station	867-877 South Dowling Street	Service Station	Yes	Completed	ЕG
	Waverley Woollahra Process					
Waterloo	Plant	355 Botany Road	Other Industry	Yes	Completed	U
Wauchope	Former Shell Depot	56-64 High Street	Other Petroleum	Yes	In Progress	ш
	Shell Coles Express Service					
Wauchope	Station	64 High Street		Yes	In Progress	A
Wauchope	Wauchope Service Station	57 High Street	Service Station	Yes	Completed	FG
Waverton	Barry's Bay Woodley's Marina	1 Balls Head Drive	Other Industry		Completed	C
VVavellul						
Waverton	Oyster Cove AGL	2 King Street	Gasworks	No	Completed	
Waverton	SRA Land	95 Bay Road	Unclassified	Yes	Completed	S
Wellington	Caltex Service Station	124-128 Lee St	Service Station	Yes	In progress	В
Wentworth Falls	Bodington Hospital	Bodington Drive	Unclassified	Yes	Completed	CG
		2 Rawson Rd and 8 Barfil				
Wentworthville	Former Workshop	Cres	Unclassified	No	Completed	Ċ
Wenworth	Caltex - Wenthworth	110 Adams Street		Yes	In progress	В
Werrington	7 Eleven Werrington	Lot 122 Dunheved Road	Service Station	Yes	In progress	A
		Cnr Dunheved Rd and Henry				
Werrington	Caltex Service Station	Lawson Dr	Service Station	Yes	In progress	В
	Claremont Meadows Former					
Werrington	landfill	Gipps Street	Landfill	Yes	Completed	ЪG
	Caltex Big Prawn Service					
West Ballina	Station	Pacific Highway	Service Station	No	Completed	C C
West Gosford	Caltex Service Station	69-71 Pacific Highway	Service Station	Yes	In progress	В
West Nelligen	Hughes	Old Bolaro Road	Unclassified	Yes	Completed	U U



# Appendix G Section 149 (2) and (5) Certificate

# PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Date: 12 December 2012 Receipt No. 1236546 Cert. No.26309 Page No: 1



M Hodgins 18 Kelly Cl BAULKHAM HILLS NSW 2153

Your reference: 42458:2495

Property location	War Memorial Hospital, 125 Birrell Street, WAVERLEY NSW 2024
Parcel description:	Lot 2 DP 1061588, Lot 1 DP 567694, Lot 7 DP 948185, Lot B DP 317831, Lot 1 DP 172133, Lot 2 DP 1061548, Lot 3 DP 667555,
Owner:	Lot 1 DP 1061548, Lot 1 DP 948186 The Uniting Church in Aust Property Trust (NSW)
	Level 8 222 Pitt St SYDNEY NSW 2000

In accordance with the requirements of section 149 of the Environmental Planning and Assessment Act 1979 (as amended), the following prescribed matters relate to the land at the date of this certificate.

# ITEM 1

Names of relevant planning instruments and DCPs

The name of each environmental planning instrument that applies to the carrying out of development on the land.
 The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).
 The name of each development control plan that applies to the carrying out of development on the land.
 In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

Waverley Council | ABN: 12 502 583 608

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## Waverley LEP 2012

## Gazetted: 26 October 2012

The following state environmental planning policies (SEPP) apply to the land:

- SEPP No. 1 Development Standards
- SEPP No. 4 Development Without Consent and Miscellaneous Complying Development
- SEPP No. 6 Number of Storeys in a Building
- SEPP No. 14 Coastal Wetlands
- SEPP No. 19 Bushland in Urban Areas
- SEPP No. 22 Shops and Commercial Premises
- SEPP No. 32 Urban Consolidation (Redevelopment of Urban Land)
- SEPP No. 33 Hazardous and Offensive Development
- SEPP No. 50 Canal Estates
- SEPP No. 55 Remediation of Land
- SEPP No. 60 Exempt and Complying Development
- SEPP No. 64 Advertising and Signage
- SEPP No. 65 Design Quality of Residential Flat Development
- SEPP No. 70 Affordable Housing (Revised Schemes)
- SEPP No. 71 Coastal Protection
- SEPP (Affordable Rental Housing) 2009
- SEPP (Building Sustainability Index: BASIX) 2004
- SEPP (Exempt and Complying Development Codes) 2008
- SEPP (Housing for Seniors or People with a Disability) 2004
- SEPP (Infrastructure) 2007
- SEPP (Major Development) 2005
- SEPP (Temporary Structures) 2007
- SREP (Sydney Harbour Catchment) Any enquiries regarding these SEPPs should be directed to the Department of Planning on: (02) 9762 8000 or http://www.planning.nsw.gov.au

- 1. (2) The following proposed local environmental plans (LEP) apply to the land:
  - Nil

The following proposed state environmental planning policies (SEPP) apply to the land:

Competition SEPP

Any enquiries regarding these SEPPs should be directed to the Department of Planning on: (02) 9762 8000 or http://www.planning.nsw.gov.au

1. (3) The following development control plans (DCP) apply to the land:

# Waverley DCP 2012

1. (4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

[The next page is page 4]

# ITEM 2

#### Zoning and land use under relevant LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

- (a) the identity of the zone, whether by reference to a name (such as "Residential Zone" or "Heritage Area") or by reference to a number (such as "Zone No 2(a)"),
- (b) the purposes for which the instrument provides that development may be carried out within the zone without the need for development consent,
- (c) the purposes for which the instrument provides that development may not be carried out within the zone except with development consent,
- (d) the purposes for which the instrument provides that development is prohibited within the zone,
- (e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed,
- (f) whether the land includes or comprises critical habitat,
- (g) whether the land is in a conservation area (however described),
- (h) whether an item of environmental heritage (however described) is situated on the land.

#### (a) to (d)

#### Waverley LEP 2012

#### Gazetted: 26 October 2012

#### Zone SP2 Infrastructure

#### 1 Objectives of zone

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

#### 2 Permitted without consent

Nil

#### 3 Permitted with consent

Roads; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose

#### 4 **Prohibited**

Any development not specified in item 2 or 3

## Waverley LEP 2012

#### Gazetted: 26 October 2012

## Zone R3 Medium Density Residential

#### 1 Objectives of zone

- To provide for the housing needs of the community within a medium density residential environment.
- To provide a variety of housing types within a medium density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.

#### 2 Permitted without consent

Home occupations

#### 3 Permitted with consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Group homes; Home industries; Kiosks; Markets; Multi dwelling housing; Neighbourhood shops; Places of public worship; Respite day care centres; Roads; Seniors housing; Any other development not specified in item 2 or 4

#### 4 **Prohibited**

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works: Entertainment facilities: Extractive industries: Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewage treatment plants; Sex services premises; Shop top housing; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities; Wholesale supplies

- (e) The land is **not** subject to any development standards that fix minimum land dimensions for the erection of a dwelling house.
- (f) The land does **not** comprise critical habitat.
- (g) The land is **not** within a Heritage Conservation Area.

- (h) The land **contains** an Item of Environmental Heritage.
- The land contains a Heritage Item General identified in Waverley Local Environmental Plan 2012.
- The land contains a Heritage Item- Landscape identified in Waverley Local Environmental Plan 2012.

# ITEM 2A

# Zoning and land use under <u>State Environmental Planning Policy (Sydney Region</u> Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

- (a) Part 3 of the <u>State Environmental Planning Policy (Sydney Region Growth Centres)</u> <u>2006</u> (the 2006 SEPP), or
- (b) A Precinct Plan (within the meaning of the 2006 SEPP), or
- (c) A proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the Act,

the particulars referred to in clause 2(a)-(h) in relation to that land (with a reference to "the instrument" in any of those paragraphs being read as a reference to Part 3 of the 2006 SEPP, or the Precinct Plan or proposed Precinct Plan, as the case requires)

The land is **not** subject to the <u>State Environmental Planning Policy (Sydney Region</u> <u>Growth Centres) 2006</u>

# ITEM 3

# Complying development

- (1) Whether or not the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (c) and (d) and 1.19 of <u>State Environmental Planning Policy (Exempt</u> <u>and Complying Development Codes) 2008</u>.
- (2) If complying development may not be carried out on that land because of the provisions of clauses 1.17A (c) and (d) and 1.19 of that Policy, the reasons why it may not be carried out under that clause.

# **General Housing Code**

Complying development under the General Housing Code **may not** be carried out on the land. The land is affected by specific land exemption:

land contains a Heritage Item.

# Housing Alterations Code

Complying development under the Housing Alterations Code **may not** be carried out on the land. The land is affected by specific land exemption:

• land contains a Heritage Item.

# **General Commercial and Industrial Code**

Complying development under the General Commercial and Industrial Code **may not** be carried out on the land. The land is affected by specific land exemptions:

• land contains a Heritage Item.

#### PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

# Subdivisions Code

Complying development under the Subdivisions Code **may not** be carried out on the land. The land is affected by specific land exemptions:

land contains a Heritage Item.

# Rural Housing Code

There are no lands within the Waverley Council area that are affected by this Code.

# **General Development Code**

Complying development under the General Development Code **may not** be carried out on the land. The land is affected by specific land exemption:

land contains a Heritage Item.

# **Demolition Code**

Complying development under the Demolition Code **may not** be carried out on the land. The land is affected by specific land exemption:

land contains a Heritage Item.

If only part of the land to which this exemption applies, complying development must not be carried out on any part of that land.

Disclaimer: This certificate only addresses matters raised in clauses 1.17A (c) and (d) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. It is your responsibility to ensure that you comply with any other general requirements of the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. Failure to comply with these provisions may mean that a Complying Development Certificate issued under the provisions of the State Environmental Planning Codes) 2008 is invalid.

# ITEM 4

# **Coastal protection**

Whether or not the land is affected by the operation of section 38 or 39 of the <u>Coastal</u> <u>Protection Act 1979</u>, but only to the extent that the council has been so notified by the Department of Services, Technology and Administration.

The land is not affected by Sections 38 or 39 of the Coastal Protection Act 1979.

# ITEM 4A

# Certain information relating to beaches and coasts

(1) In relation to a coastal council - whether an order has been made under Part 4D of the <u>Coastal Protection Act 1979</u> in relation to emergency coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.

No.

- (2) In relation to a coastal council:
  - (a) Whether the council has been notified under section 55x of the <u>Coastal Protection</u> <u>Act 1979</u> that emergency coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and

#### No.

(b) If works have been so placed-whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.

## Not applicable.

(3) In relation to a coastal council - such information (if any) as is required by the regulations under section 56B of the <u>Coastal Protection Act 1979</u> to be included in the planning certificate and of which the council has been notified pursuant to those regulations.

No such information is required to be provided as Regulations under Section 56B of the *Coastal Protection Act 1979* have not been made.

#### ITEM 4B

# Annual charges under <u>Local Government Act 1993</u> for coastal protection services that relate to existing coastal protection works

In relation to a coastal council - whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

## No.

Note "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993*.

# ITEM 5

#### Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961*.

The land is **not** proclaimed to be a mine subsidence district within the meaning of section 15 of the *Mine Subsidence Compensation Act 1961.* 

#### **ITEM 6**

## Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under:

- (a) Division 2 of Part 3 of the Roads Act 1993, or
- (b) any environmental planning instrument, or
- (c) any resolution of the council.

The land is **not** affected by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993, or any environmental planning instrument or any resolution of the Council.

#### **ITEM 7**

# Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

#### PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

- (a) adopted by the council, or
- (b) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

- (a) The land is **not** affected by a policy adopted by Council that restricts the development of land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).
- (b) The land is **not** affected by a policy adopted by another public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council, that restricts the development of land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

# **ITEM 7A**

## Flood related development controls information

(1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

The land is **not** subject to flood related development controls for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing).

(2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.

The land is **not** subject to flood related development controls.

(3) Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the <u>Standard Instrument (Local Environmental Plans) Order</u> <u>2006.</u>

# ITEM 8

#### Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The land is **not** affected by any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 that provides for the acquisition of the land by a public authority, as referred to in section 27 of the Act.

#### **ITEM 9**

## **Contributions plans**

The name of each contributions plan applying to the land.

Waverley Council Development Contribution Plan 2006 (Amendment No.4).

## ITEM 9A

#### **Biodiversity certified land**

If the land is biodiversity certified land (within the meaning of Part 7AA of the <u>Threatened</u> <u>Species Conservation Act 1995</u>), a statement to that effect.

The land is **not** biodiversity certified land under Part 7AA of the <u>Threatened Species</u> <u>Conservation Act 1995.</u>

## ITEM 10

## **Biobanking agreements**

If the land is land to which a biobanking agreement under Part 7A of the <u>Threatened</u> <u>Species Conservation Act 1995</u> relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water).

Council has **not** been notified of any biobanking agreement under Part 7A of the *Threatened Species Conservations Act 1995* relating to the land.

# ITEM 11

#### Bush fire prone land

If any of the land is bush fire prone land (as defined in the Act), a statement that all or, as the case may be, some of the land is bush fire prone land.

If none of the land is bush fire prone land, a statement to that effect.

The land is **not** bush fire prone land (as defined in the Act).

#### **ITEM 12**

# Property vegetation plans

If the land is land to which a property vegetation plan under the <u>Native Vegetation Act</u> <u>2003</u> applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

Council has **not** been notified of any property vegetation plans under the <u>Native</u> <u>Vegetation Act 2003</u> applying to the land.

#### ITEM 13

## Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the <u>Trees (Disputes Between Neighbours) Act</u> <u>2006</u> to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

No.

#### ITEM 14

# Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

There is **no** direction under Part 3A.

#### ITEM 15

## Site compatibility certificates and conditions for seniors housing

If the land is land to which <u>State Environmental Planning Policy (Housing for Seniors or</u> <u>People with a Disability) 2004</u> applies:

- (a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
  - (i) the period for which the certificate is current, and
  - (ii) that a copy may be obtained from the head office of the Department of Planning, and

Council has **not** been notified of any site compatibility certificate and conditions for seniors housing.

(b) a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

Council has **not** been notified of any site compatibility certificate and conditions for seniors housing.

## **ITEM 16**

## Site compatibility certificates for infrastructure

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

- (a) the period for which the certificate is valid, and
- (b) that a copy may be obtained from the head office of the Department of Planning.

Council has **not** been notified of any site compatibility certificate for infrastructure.

#### **ITEM 17**

#### Site compatibility certificates and conditions for affordable rental housing.

- (1) A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:
  - (a) the period for which the certificate is current, and
  - (b) that a copy may be obtained from the head office of the Department of Planning.

Council has **not** been notified of any site compatibility certificate and condition for affordable rental housing.

(2) A statement setting out any terms of a kind referred to in clause 17(1) or 38 (1) of <u>State Environmental Planning Policy (Affordable Rental Housing) 2009</u> that have been imposed as a condition of consent to a development application in respect of the land.

Council has **not** been notified of any site compatibility certificate and condition for affordable rental housing.

#### PLANNING CERTIFICATE UNDER SECTION 149 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

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**Note:** The following matters are prescribed by section 59(2) of the <u>Contaminated Land</u> <u>Management Act 1997</u> as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act-if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

No.

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act-if it is subject to such an order at the date when the certificate is issued,

No.

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act-if it is the subject of such an approved proposal at the date when the certificate is issued,

No.

 (d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act-if it is subject to such an order at the date when the certificate is issued,

No.

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act-if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

No.

**Note:** Section 26 of the <u>Nation Building and Jobs Plan (State Infrastructure Delivery) Act</u> <u>2009</u> provides that a planning certificate must include advice about any exemptions under section 23 or authorisation under section 24 of that Act if the council is provided with a copy of the exemption or authorisation by the Co-ordinator General under that Act.

This land is **not** subject to an Order under Section 23 or authorisation under Section 24 of the <u>Nation Building and Jobs Plan (State Infrastructure Delivery)Act 2009</u> for the carrying out of development.

Information provided under S.149(2) is in accordance with the matters prescribed under Schedule 4 of the *Environmental Planning and Assessment Regulation 2000* and is provided only to the extent that the Council has been notified by the Department of Public Works or Department of Planning.

For the purpose of s.149(5) of the *Environmental Planning and Assessment Act, 1979,* the following additional information is provided with relation to development applications which have been determined.

When information pursuant to Section 149(5) is requested, the Council is under no obligation to furnish any of the information supplied herein pursuant to that Section.

DA-354/2007

Approved

13-Sep-2007

Alterations and additions to the War Memorial

			Hospital Complex including new air conditioning units in Heritage listed properties
DA-354/2007/A	Approved	03-Mar-2008	Reorientation of substation and deletion of screen planting
DA-354/2007/B	Approved	11-Aug-2009	Modification to relocate fire hydrant services enclosure
DA-353/2012	Approved	06-Sep-2012	Change of use of store and work shed to 'Men's Shed'

Additional Information Section 149 (5)

The land **has** a frontage to an Arterial Road.

Council draws your attention to Section 149(6) which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5).

The absence of any reference to any matters affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

Please contact the Council's Planning & Environmental Services Department for further information about any instruments or affectations referred to in the Certificate.

ANTHONY REED GENERAL MANAGER



# Appendix H Heritage Records

# AUSTRALIAN HERITAGE PLACES INVENTORY

# [New Search]

- 1. Banksia and Witchagil Birrell St, Waverley, NSW
- 2. <u>Edina</u> Birrell St, Waverley, NSW
- 3. <u>War Memorial Hospital Group</u> Birrell St, Waverley, NSW

LGA: Waverley Municipality Source: Register of the National Estate

LGA: Waverley Municipality Source: Register of the National Estate

LGA: Waverley Municipality Source: Register of the National Estate

#### Query matched 3 records.

Report produced : 11/12/2012 AHPI URL : http://www.environment.gov.au/heritage/ahpi/index.html





You are here: Environment home » Heritage » Australian Heritage Database

#### **Place Details**

#### Send Feedback

Edina, Birrell St, Waverley, NSW, Australia



new search

Photographs	
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (21/03/1978)
Place ID	2470
Place File No	1/12/038/0005

#### Statement of Significance

Built by Ebenezer Vickery in the early 1880s and lived in by the Vickery family until after World War One. They were largely instrumental in founding the War Memorial Hospital. Good example of high Victorian style.

(The Commission is in the process of developing and/or upgrading official statements for places listed prior to 1991. The above data was mainly provided by the nominator and has not yet been revised by the Commission.)

#### **Official Values Not Available**

#### Description

Built in the early 1880s. The House is basically five bay, four square with a central front door and is encased in an elaborately moulded cement two storey verandah of arcaded Italianate design, with projecting entrance porch and central tower. The exterior is a good example of coarse and debased Boom style ornament with good cast iron and tiling on verandahs. The interior is again a good example of high Victorian ornament.

#### History Not Available

#### Condition and Integrity Not Available

#### Location

Part of War Memorial Hospital Group, Birrell Street, backing onto Carrington Road, Waverley.

#### **Bibliography Not Available**

Report Produced Tue Dec 11 12:53:20 2012

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You are here: Environment home » Heritage » Australian Heritage Database

#### **Place Details**

#### Send Feedback

Australian Heritage Database



new search

#### War Memorial Hospital Group, Birrell St, Waverley, NSW, Australia

Photographs	
List	Register of the National Estate (Non-statutory archive)
Class	Historic
Legal Status	Registered (21/03/1978)
Place ID	2469
Place File No	1/12/038/0004

#### Statement of Significance

Very fine group of high Victorian buildings. Edina most elaborate house in the area, very well preserved and maintained with good examples of all types of applied ornament. All Victorian buildings form a coherent unit of historical interest which, by virtue of the continued connection of the Vickery family with the hospital, is carried on to the later buildings which are well placed in relation to the earlier buildings. Ebenezer Vickery was a prominent and influential Methodist layman.

(The Commission is in the process of developing and/or upgrading official statements for places listed prior to 1991. The above data was mainly provided by the nominator and has not yet been revised by the Commission.)

#### **Official Values Not Available**

#### Description

Edina is a large two storey house with tower built c 1880-90. The exterior is a good example of coarse and debased Boom style ornament with good cast iron and tiling on verandahs. Fine cedar joinery inside and house is complemented by two other buildings, Banksia and Witchagil, two semi-detached and one detached identical two storey Victorian villas, c 1880-90. The gates, detached from main part hospital grounds, are elaborate cast iron with iron gate posts.

#### **History Not Available**

#### **Condition and Integrity**

Of the three buildings only the north-west villa (Witchagil) has had superficial alterations, a verandah has been closed in by fibro.

#### Location

Including Edina, Banksia and Witchagil and two sets of gates: 1) corner Birrell Street and Bronte Road; 2) Carrington Road at rear of Edina, Carrington Street, Waverley

#### **Bibliography Not Available**

Report Produced Tue Dec 11 12:54:42 2012

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# War Memorial Hospital Grounds

#### **Item details**

	Name of item:	War Memorial Hospital Grounds
	Type of item:	Complex / Group
	Group/Collection:	Parks, Gardens and Trees
	Category:	Garden Institutional/Research
	Primary address:	Bounded by Birrell and Church Street and Carrington Ro, Waverley, NSW 2024
	Parish:	Alexandria
	County:	Cumberland
	Local govt. area:	Waverley

#### All addresses

Street Address Su	uburb/town LG	GA I	Parish	County	Туре
Bounded by Birrell and Church Street and Carrington Ro Wa	laverley Wa	averley /	Alexandria	Cumberland	PrimaryAddress

#### Statement of significance:

Fine grounds with elegant lawn and majestic trees of considerable age. Forming an impressive setting to an outstanding grouping of Victorian period buildings. Rare example of a Late Victorian mansion conserving original grounds and setting. State significance.

Date significance updated: 05 Feb 00

1891-1920

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available

#### **Description**

#### Construction years: Physical description:

Central open lawn, set with white statuary, affords a fine vista to the elegant towered, two storey west façade of "Edina". Acentral path runs west and divides the lawn in two. Stone steps at the end of the grassed embankment. The lawn is flanked by majestic trees, particularly the tall (22m) Norfolk Island pines and the spreading Moreton Bay figs (18m high by 30m wide). Possibly planted about 1900. The entry from Birrell Street presents an inviting scene of white two storey, grand buildings and impressive groups of dark foliage trees. These include a row of six Canary Island palms (12m high) from c.1920. The original entry from the corner of Birrell Street and Bronte Road is now closed but the original cast iron panel fence and gates remain. Both in cast iron with sandstone piers, from c.1900. Entrance gate also stand on Carrington Road, from c 1920. Wrought iron and unusual in the use of military motifs of World War 1. The grounds west of the main central lawn are of considerable lesser quality and require reassessment from a landscape viewpoint.

#### Current use: Hospital Former use: Hospital

History

Historical notes:

Formerly the grounds of the grand Vickery family home, "Edina". Bequeathed to the Methodist Church as a World War 1 memorial hospital. Used as a private hospital since 1922.

Historic themes		
Australian theme (abbrev)	New South Wales theme	Local theme
3. Economy-Developing local,	Health-Activities associated with preparing and providing medical assistance	(none)-
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- Maritime heritage
- M24 midget submarine

#### Assessment of significance

SHR Criteria a)

This item is of historical and cultural significance

 [Historical significance]
 This item is of aesthetic and streetscape/landscape significance

 [Aesthetic significance]
 This item is of aesthetic and streetscape/landscape significance

 Integrity/Intactness:
 Substantially intact

 Assessment criteria:
 Substantially intact

 Items are assessed against the State Heritage Register (SHR) Criteria to determine the level of significance. Refer to the Listings below for the level of statutory protection.

# ListingsHeritage ListingListing TitleListing NumberGazette DateGazette NumberGazette PageLocal Environmental Plan

#### **Study details**

Title	Year	Number	Author	Inspected by	Guidelines used
Waverley Heritage Study	1991	L45/2040	Perumal Murphy Pty Limited		No

#### References, internet links & imagess

None

Note: internet links may be to web pages, documents or images.



(Click on thumbnail for full size image and image details)

#### Data source

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# War Memorial Hospital Group

#### **Item details**

Name of item:	War Memorial Hospital Group
Type of item:	Complex / Group
Group/Collection:	Residential buildings (private)
Category:	Other - Residential Buildings (private)
Primary address:	Birrell Street, Waverley, NSW 2024
Parish:	Alexandria
County:	Cumberland
Local govt. area:	Waverley

#### All addresses

Street Address	Suburb/town	LGA	Parish	County	Туре
Birrell Street	Waverley	Waverley	Aexandria	Cumberland	PrimaryAddress

#### Statement of significance:

Outstanding historic grouping incorporating three magnificent late Victorian buildings and former stables. Complete as a group and essentially intact despite some loss of integrity. Earlier buildings retain much of their original setting, and more recent buildings reasonably sympathetic in their design and siting. Special social and historic significance for the long association of the site and the hospital with the Vickery family. Original gates and associated fencing of special note. (See accompanying forms for individual buildings and grounds). State significance.

## Date significance updated: 04 Oct 99

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description		
Construction years:	1890-1945	9
Physical description:	Group includes "Edina" (c. 1884), "Ellerslie" (1880's), "Banksia" - "Wytchazel" (1880's), Maternity building (1935), Memorial Chapel, two early twentieth century domestic buildings, two sets of gates and fencing, and the original landscaped grounds. Buildings and grounds are individually recorded (see accompanying forms). One set of gates is located at the corner of Birrell Street and Bronte Road This part of the site, the western area, is now a nursing home. All buildings are modern and generally unsympathetic. The main historic grouping is towards Carrington Road, between Birrell and Church Streets. There is an outstanding set of wrought iron gates on the Carrington Road frontage.	
Further information:	Reasons for listing: Historical; cultural; social; architectural; aesthetic; rarity value; group value; landmark; streetscape/landscape.	

Current use: Hospital/nursing home. Former use: Hospital/nursing home.

#### **History**

Historical notes:

Complex sited on over two hectares of land, most of which was owned by Ebenezer Vickery, prosperous merchant and benefactor of the Methodist Church. The family lived on the property from the 1860's and built "Edina", "Ellerslie" and "Banksia" - "Wytchazel" in the 1880's. "Ellerslie" incorporates an earlier building. It was the first building used for hospital purposes when the family donated the property for a memorial hospital on Anzac Day, 1919. The hospital was officially opened in 1921. "Edina" was the name of the birthplace in Scotland of Vickery's mother.



Web2PDF converted by Web2PDFConvert.com

**Historic themes** 

Australian theme (a	bbrev)	New South Wales theme	Local theme
3. Economy-Develop regional and national		Health-Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans	(none)-
Assessment of s	ignificance		
CLID Cuitouia a)		, biotoxic averyming incompositing there are will contain the Materian buildings and for	

SHR Criteria a)	Outstanding historic grouping incorporating three magnificent late Victorian buildings and former
[Historical significance]	stables. Complete as a group and essentially intact despite some loss of integrity. Earlier buildings
	retain much of their original setting, and more recent buildings reasonably sympathetic in their design
	and siting. Special social and historic significance for the long association of the site and the hospital
	with the Vickery family. Original gates and associated fencing of special note. (See accompanying
	forms for individual buildings and grounds). State significance.
Integrity/Intactness:	Substantially intact.
Assessment criteria:	Items are assessed against the <u> State Heritage Register (SHR) Criteria</u> to determine the level of
	significance. Refer to the Listings below for the level of statutory protection.

Listings								
Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page			
Local Environmental Plan		42/6 - 0028	06 Dec 96					
Heritage study	Waverley Heritage Study	1990						

#### **Study details**

Title	Year	Number	Author	Inspected by	Guidelines used
Waverley Heritage Study	1990		Perumal Murphy Pty Limited		No

#### References, internet links & imagess

None

Note: internet links may be to web pages, documents or images.



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# Appendix I Hazardous Chemicals Search



WorkCover NSW 92:00 Dmm.stat Street, Gredant, NSW 2250 Locked Bag 2006, Linarow, NSW 2252 7:02:4325:5000 - 11:02:4325:4145 WorkCover Ascistance Service: 13:10:50 [DX 731:Spring - workcover.nsw.gov.au

Our Ref: D12/194578 Your Ref: Cathy Roberts

14 December 2012

Attention: Cathy Roberts JBS Environmental PO Box 940 Mascot NSW 1460

Dear Ms Roberts,

# RE SITE: 125 Birrell St Waverley NSW

I refer to your site search request received by WorkCover NSW on 12 December 2012 requesting information on licences to keep dangerous goods for the above site.

Enclosed are copies of the documents that WorkCover NSW holds on Dangerous Goods Licences 35/028651 relating to the storage of dangerous goods at the above-mentioned premises, as listed on the Stored Chemical Information Database (SCID).

· · · · · · · · · · · · · · ·

If you have any further queries please contact the Dangerous Goods Licensing Tearn on (02) 4321 5500.

Yours Sincerely

١.

Brent Jones Senior Licensing Officer Dangerous Goods Notification Team



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2.11 ]. 9		1
	ATION OF DANGEROUS GOODS ON PREMISES FORM	
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	Given name Susan Other names Marie	506558D NSN 7250
	Gender Male / Female (please circle) Date of birth 24 / 2 /55 Place of birth New	
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	Suburb Waverley State NSW Pret	026/05/05 01:41 D0003085717 0002
		1 (2) FRX002
	Business email address sysam. memor a security, memorith, new	
		(2)HER% \$100.00 (80 mg \$10 <b>2.00</b>
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ļ	Site on which dangerous goods are to be kept	1551 17 632 742 965
	Number Street	
[	125 BIRRELL STREET WAVERLEY	
1	Nearest cross Street	F
, 1	CARRING TON ROAD WAVERLEY	
	s the site staffed? If yes state number of employees	
5	ite staffing: Hours per day 24- Days per week 77-	6 0 0 6
\$	ite Emergency Contact	US 8 16 254
	hone number Name	-
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AE	SN Number (if any) Véebsite details (if any)	<b>/</b>
_	314 274 12 41.	
W	hat is the ANSZIC code most applicable to you business? (see guide for list of codes and (urther inf	Ormation)
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	DOI HOAPHAL, Nurring Homes	,
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AN	ach a site sketch(s) of the premises. Refer to the Guide for information on the requirements for the	he site skolch.

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# ATION OF DANGEROUS GOODS ON PREMISES FORM

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List the dangerous goods that will be stored and/or processed on these premises. Copy this page and attach additional sheets if there is insufficient space.

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Wo:	KCaver 200 South Wales, 408 Kerk Street, Sychey 2000. Tel: 9370 5000 Fax: 9370 5999 ALL M		aan 🕨 🔺 🖉 🗖
	Licence No. 35/028651	NEW SOUTH WALES	
	APPLICATION FOR REA OF LICENCE TO KEEP DANGER ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOOD	OUS GOODS	
N.	DECLARATION: Please renew licence number 35/02 that all the licence details shown below are correct (amer		'. I confirm
	(Signature) (Plaase print name) for: WAR MEMORIAL HOSPITAL (WAVERLEY)	04/05/2.00 (Date signed)	ю
	THIS SIGNED DECLARATION SHOULD BE RETURNED TO WorkCover New South Wales Dangerous Goods Licensing Section GPO BOX 5364 SYDNEY 2001	<i>D: (please do not fax)</i> Enquiries: ph (02) 93 fax (02) 9	
	Details of licence on 29 April 2000	-	
	Licence Number 35/028651 Expiry Date 4/06/2000	ATTA	
	Licensee WAR MEMORIAL HOSPITAL (WAVERLEY)	4 MAY 2000	
	Postal Address: 125 BIRBELL ST. WAVERLEY NSW 2024		
	Licensee Contact IAN PATERSON Ph. 9369 0334 Fax. 938 170	P La San D	
•.	Premises Licensed to Keep Dangerous Goods WAR MEMORIAL HOSPITAL (WAVERLEY) 125 BIRRELL ST WAVERLEY 2024		
	Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)		
	Major Supplier of Dangerous Goods LINDE		
	Emergency Contact for this Site IAN PATERSON Ph. 9387 1168		
	Site staffing 24 HRS 7 DAYS		i
	Details of Depots Depot No. Depot Type Goods Stored in Depot		Qty
J	2 ROOFLESS STORE Class 3 UN 1203 PETROL		1000 L 600 L

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1. Name of applicant WAR MEMORIAL HOSPITAL (WAVERLEY) ACN	]
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2. Site to be licensed	
No Street	
Suburb/Town Postcode	
WAVERLEY 2024	ļ
3. Previous licence number (if known) 35/02865/	
4. Nature of site PUBLIC HOSPITAL	
5. Emergency contact on site: Example and an environment of the second s	
387-1166 lan Paterson	ļ
6. Site staffing: Hours per day 24 Days per week 7	
7. Major supplier of dangerous goods Linde (Medical Oxygen Bottles)	1
8. If new site or significant modification	
Plan stamped by: Accredited consultant's name: Date stamped	
► N/A	
9. Number of dangerous goods depots at site	
10, Trading name or occupier's name	
War Memorial Hospital	
11.Postal address of applicant Subu/b/Town Postcode	
t25 Birrell Street Waverley 2024	
12.Contact for licence enquiries: Phone Fax Name	
369-0334 387-7018 Jan Paterson	
t certily that the details contained in this application (or the accompanying computer disk) are true and correct	
13. Signature of applicant Date 3/6/93	at Ki i
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Appendix J Bore Logs



**Borehole No: HA01** 

Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 12/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.7

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	SUBSURFACE PROFILE			SAMPLE			
Depth	Graphic Log	Lithologic Des	cription	Sample ID	PID (ppm)	Sample Type	Comments
		Ground Surf	ace				Grass
-0.0		FILL (FL) Silty SAND, brown with white sands, h fine grained sand, sub-rounded with inc Imported topsoil.	eterogeneous, damp, loose, clusions of plant matter.	HA01 0.0-0.1		D	Sample location targeting area of raised fill material.
-		As above with concrete and sandstone	gravels.	HA01 0.2-0.3		D	
-				HA01 0.4-0.5		D	
-		As above but light grey to brown with g	glass fragments.	HA01 0.6-0.7		D	
- - - - - - - - -		END OF HOLE at 0.7 m bgs. Refusal on sandstone obstruction within	n fill material.				
	ng Method Hand Aug	er U - Undisturbed tube sample	Reference Level AHD - Australian Height Datum	Log Details			
SFA HFA PT -	HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DatumSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceHFA - Hollow Flight AugerCS - Core samplePT - Push TubeAH - Air HammerAH - Air HammerAHD - Air Hammer		Logged By: M. Hodgins Project Manager: C. Roberts				

NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information © JBS Environmental Pty Ltd


Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 12/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 1.0

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	,		SUBSURFACE PROFIL	E				SAMPLE
Depth	Graphic Log		Lithologic Desc	ription	Sample ID	PID (ppm)	Sample Type	Comments
			Ground Surfa	ace				Grass
-0.0		fine gra	FL) ND, brown with white sand, he ined sand, sub-rounded with inc d topsoil.	terogeneous, damp, loose,	HA02 0.0-0.1		D	
_		FILL (I Silty, gr loose, fi shale gr	avelly SAND, light grey with bro ine grained sand with fine to coa	wn, heterogeneous, damp, rse sandstone, concrete and	HA02 0.2-0.3		D	
_					HA02 0.4-0.5		D	
_		As abo	whith the second state with global	fragmanta				
_	As above but brown to white with glass fragments.			iragments.	HA02 0.6-0.7		D	
_					HA02 0.9-1.0		D	
		END C Refusal	<b>F HOLE at 1.0 m bgs.</b> on sandstone obstruction withir	n fill material.				
_								
_								
_								
_								
-								
-2.0								
Drilling Method         Sample Type         Reference Level         Log Details								
HA - Hand Auger U - Undisturbed tube sample AHD - Australian Height Datum Logged By: M. Hodgins								
SFA - Solid Flight Auger     D - Disturbed sample     BGS - Below Ground Surface     Project Manager: C. Roberts       HFA - Hollow Flight Auger     CS - Core sample     CS - Core sample								
HFA - Hollow Flight Auger CS - Core sample PT - Push Tube								
AH	Air Hamme	ər						



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 12/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 1.1

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	SUBSURFACE PROFILE						SAMPLE
Depth	Graphic Log	Lithologic Desc	cription	Sample ID	PID (ppm)	Sample Type	Comments
		Ground Surfa	ace				Grass
-0.0		FILL (FL) Silty SAND, brown with white sand, he fine grained sand, sub-rounded with inc slag. Imported topsoil.	terogeneous, damp, loose, clusions of plant matter and	HA03 0.0-0.1		D	QC01/QC01a.
-		As above but with coarse sandstone an	id shale gravels.	HA03 0.2-0.3		D	
-				HA03 0.4-0.5		D	
-							
-		SAND (SW) SAND, light brown, homogeneous, dan grained sand, sub-angular.	np, loose, fine to medium	HA03 0.8-0.9		D	
-1.0				HA03 1.0-1.1		D	
-	END OF HOLE at 1.1 m bgs. Program depth.						
			Log Details	1			
	Drilling Method         Sample Type         Reference Level           IA - Hand Auger         U - Undisturbed tube sample         AHD - Australian Height Datum		AHD - Australian Height Datum	Logged By: M. H	lodains		
SFA HFA PT - I	HA - Hand Auger     U - Undisturbed tube sample     AHD - Australian Height Datum       SFA - Solid Flight Auger     D - Disturbed sample     BGS - Below Ground Surface       HFA - Hollow Flight Auger     CS - Core sample     BGS - Below Ground Surface       PT - Push Tube     AH - Air Hammer     D - Disturbed sample		Project Manage				



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 12/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.3

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	SUBSURFACE PROFILE							SAMPLE
Depth	Graphic Log		Lithologic Desc	cription	Sample ID	PID (ppm)	Sample Type	Comments
-0.0			Ground Surfa	ace				Leaf litter and grass
-		FILL (F Silty, gra loose, fin with incl	<b>L)</b> avelly SAND, brown with white ne grained sand with coarse igr usions of plant matter.	sand, heterogeneous, damp, neous and sandstone gravels	HA04 0.0-0.1		D	
		FILL (F SAND, y	<b>L)</b> /ellow to brown, heterogeneous	s, damp.	HA04 0.2-0.3		D	
-		END O Refusal	F HOLE at 0.3 m bgs. on sandstone boulder within fill	material.				
-								
-								
-1.0								
-								
$\left  \right $								
-								
-2.0	0							
Drillin	ng Method		Sample Type	Reference Level	Log Details			
HA -	Hand Auge		U - Undisturbed tube sample	AHD - Australian Height Datum	Logged By: M. H			
HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DatumLogged By: M. HodginsSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceProject Manager: C. RobertsHFA - Hollow Flight AugerCS - Core sampleFor the sampleFor the sample								

PT - Push Tube AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.6

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	, , , , , , , , , , , , , , , , , , ,	SUBSURFACE PROFI	E				SAMPLE
Depth	Graphic Log	Lithologic Des	cription	Sample ID	PID (ppm)	Sample Type	Comments
		Ground Sur	face				Grass
—0.0 —		FILL (FL) Silty SAND, brown with white, heterog grained sand, sub-rounded with inclus sandstone gravel. Imported topsoil.		HA05 0.0-0.1		D	Sample location targeting workshed.
-				HA05 0.2-0.3		D	
-				HA05 0.4-0.5		D	
-		END OF HOLE at 0.6 m bgs. Refusal on concrete obstruction within	fill material				
<b>-</b>							
-							
-							
-1.0							
_							
_							
_							
_							
-							
_							
-							
-							
_							
-2.0	2.0						
Drillin	Drilling Method Sample Type Reference Level		Log Details				
HA -	Hand Auge			Logged By: M. H			
	SFA - Solid Flight Auger     D - Disturbed sample     BGS - Below Ground Surface       HFA - Hollow Flight Auger     CS - Core sample     BGS - Below Ground Surface		Project Manager	r: C. Ro	berts		
	- Hollow Fl Push Tube						
	Air Hamme						



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.2

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFIL	E				SAMPLE
Depth	Graphic Log	Lithologic Des	cription	Sample ID	PID (ppm)	Sample Type	Comments
		Ground Sur	face				Grass
-0.0		FILL (FL) Silty SAND, brown with white, heterog loose, fine grained sand, sub-rounded Imported topsoil. END OF HOLE at 0.2 m bgs. Refusal on concrete obstruction within		HA06 0.0-0.1		D	Sample location targeting suspected fill material.
-			in nacha.				
-							
-							
-1.0 -							
-							
-							
-							
_							
	2.0						
	Drilling Method Sample Type Reference Level		Log Details				
HA - Hand Auger     U - Undisturbed tube sample     AHD - Australian Height Datum     Logged By: M. Hodgins       SFA - Solid Flight Auger     D - Disturbed sample     BGS - Below Ground Surface     Project Manager: C. Roberts       HFA - Hollow Flight Auger     CS - Core sample     BGS - Below Ground Surface     Project Manager: C. Roberts							

PT - Push Tube AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.5

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		E	SAMPLE					
Depth	Graphic Log	Lithologic Desc	ription	Sample ID	PID (ppm)	Sample Type	Comments	
		Ground Surfa	ce				Grass	
-0.0		FILL (FL) Silty SAND, brown with white, heteroge grained sand, sub-rounded with inclusio sandstone gravels and plant matter. Imp	neous, damp, loose, fine ns of igneous and	HA07 0.0-0.1		D	Sample location targeting suspected fill material.	
-				HA07 0.2-0.3		D		
		FILL (FL) SAND, grey to white, heterogeneous, da sand, sub-rounded with inclusions of co	amp, loose, fine grained arse sandstone gravel.					
_				HA07 0.4-0.5		D		
_		END OF HOLE at 0.5 m bgs. Refusal on sandstone obstruction within	fill material.					
_								
_								
_								
-1.0								
_								
-								
_								
-								
_								
-								
F								
-								
-								
-2.0	2.0							
	Drilling Method Sample Type Reference Level							
	HA - Hand Auger U - Undisturbed tube sample AHD - Australian Height Datum				lodgins			
	- Solid Flig		BGS - Below Ground Surface	Project Manager				
	- Hollow Fl							
РТ - I	Push Tube							

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.4

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

					SAMPLE				
Depth	CI CI Cithologic Description CI CI CI CI CI CI CI CI CI CI CI CI CI		PID (ppm)	Sample Type	Comments				
		Ground Surface					Grass		
-0.0		FILL (FL) Silty SAND, brown with white, heterogeneous, damp, loose, fir grained sand with inclusions of rootlets. Imported topsoil.	ne	HA08 0.0-0.1		D			
-		As above but light grey to brown.		HA08 0.2-0.3		D			
		As above but brown to white with inclusions of coarse sandstor gravels.	ne	HA08 0.3-0.4		D			
- - - - - - 1.0	*****	END OF HOLE at 0.4 m bgs. Refusal on sandstone obstruction within fill material.							
-									
-									
-									
	2.0								
	Drilling Method Sample Type Reference Level				Log Details				
HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DatumLogged By: M. HodginsSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceProject Manager: C. RobertsHFA - Hollow Flight AugerCS - Core sampleFF									

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

AH - Air Hammer

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.5

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

SUBSURFACE PROFILE					SAMPLE				
Depth	Graphic Log	Lithol	ogic Description	Sample ID	PID (ppm)	Sample Type	Comments		
		G	round Surface				Grass		
—0.0 —		FILL (FL)	te, heterogeneous, damp, loose, fine of rootlets. Imported topsoil.	HA09 0.0-0.1	_	D			
_				HA09 0.2-0.3		D			
_		SAND (SW) SAND, light grey, homogene sand.	eous, damp, loose, medium grained						
_				HA09 0.4-0.5		D			
_		END OF HOLE at 0.5 m Program depth.	bgs.						
_									
_									
_									
-1.0									
_									
_									
_									
_									
_									
-									
-2.0					1				
	Drilling Method Sample Type Reference Level Lo								
HA - Hand Auger U - Undisturbed tube sample AHD - Australian Height Datum Logged By: M. Hodgins									
SFA - Solid Flight Auger D - Disturbed sample BGS - Below Ground Surface Project Manager: C. Robert					Der(S				
HFA - Hollow Flight Auger CS - Core sample PT - Push Tube									
	Air Hommo	_							



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.7

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFIL	.E	SAMPLE					
Depth	Graphic Log	Lithologic Des	cription	Sample ID	PID (ppm)	Sample Type	Comments		
-0.0		Ground Surf	ace				Grass		
-		FILL (FL) Silty SAND, brown with white, heterog grained sand with inclusions of rootlets	eneous, damp, loose, fine s. Imported topsoil.	HA10 0.0-0.1		D	Sample location targeting garage.		
_		As above but with inclusions of fine to	coarse sandstone gravel.	HA10 0.2-0.3		D	QUUZ/QUUZA.		
_									
_				HA10 0.4-0.5		D			
				HA10 0.6-0.7		D			
_		END OF HOLE at 0.7 m bgs. Refusal on obstruction within fill materi	al.						
-1.0									
-									
_									
-									
-									
-									
	g Method Hand Aug	er U - Undisturbed tube sample	Reference Level AHD - Australian Height Datum	Log Details Logged By: M. H	lodgins				
SFA - HFA ·	HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DaturSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceHFA - Hollow Flight AugerCS - Core samplePT - Push Tube			Project Manage					
PT - Push Tube AH - Air Hammer NOTE: This have log is for environmental assessment purposes only and is not intended to provide gentechnical information									



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.4

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFILE		SAMPLE				
Depth	Graphic Log	Lithologic Descri	iption	Sample ID	PID (ppm)	Sample Type	Comments	
		Ground Surface	e				Dry/dead grass.	
-0.0		FILL (FL) Silty SAND, brown, heterogeneous, dry, with inclusions of coarse igneous gravel,		HA11 0.0-0.1		D	Sample location targeting footprint of former structure.	
		As above but yellow to grey SAND with in sandstone gravel.	nclusions of fine to coarse	HA11 0.2-0.3		D		
				HA11 0.3-0.4		D		
- - - - - - - - - - - - 1.0	×××××	END OF HOLE at 0.4 m bgs. Refusal on sandstone obstruction within f						
-2.0	- 20							
	Drilling Method     Sample Type     Reference Level			Log Details				
				Logged By: M. H	lodgins			
SFA HFA	HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DatumSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceHFA - Hollow Flight AugerCS - Core sampleFPT - Push Tube			Project Manager				

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 1.0

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFI	.E				SAMPLE
Depth	Graphic Log	Lithologic Des	Sample ID	PID (ppm)	Sample Type	Comments	
		Ground Sur				Dry/dead grass.	
-0.0		FILL (FL) Silty SAND, brown with white, heterog grained sand with inclusions of rootlets		HA12 0.0-0.1		D	
				HA12 0.2-0.3		D	
-							
				HA12 0.4-0.5		D	
-		SAND (SW) SAND, orange to red, homogeneous, o sand.	dry, loose, medium grained				
-		SAND (SW) As above but yellow, damp.					
-		As above but yellow, damp.					
-1.0				HA12 0.9-1.0		D	
		END OF HOLE at 1.0 m bgs. Natural.					
-							
-							
-							
-							
-	-						
F	-						
2.0			L				
	Drilling Method         Sample Type         Reference Level           HA - Hand Auger         U - Undisturbed tube sample         AHD - Australian Height Datum			Log Details Logged By: M. H	lodains		
	SFA - Solid Flight Auger D - Disturbed sample BGS - Below Ground Surface			Project Manager			
	- Hollow Fl						
	Push Tube Air Hamme						



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.9

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFIL	E	SAMPLE					
Depth	Graphic Log	Lithologic Desc	cription	Sample ID	PID (ppm)	Sample Type	Comments		
-0.0		Ground Surfa	ace				Grass		
-		FILL (FL) Silty SAND, brown with white, heteroge grained sand with inclusions of rootlets topsoil.	eneous, dry, loose, fine and shale gravel. Imported	HA13 0.0-0.1		D	Sample location targeting fill adjacent to Chapel.		
_				HA13 0.2-0.3		D			
		As above but with wood.		HA13 0.4-0.5		D			
-	FILL (FL) SAND, light brown to grey, heterogeneous, dry, loose, fine grained sand.		ous, dry, loose, fine grained						
-				HA13 0.8-0.9		D			
- 1.0		END OF HOLE at 0.9 m bgs. Refusal on obstruction within fill materia	al.						
-2.0	2.0								
	ng Method Hand Aug	Sample Type	Reference Level	Log Details	Indaine				
HA - Hand Auger       U - Undisturbed tube sample       AHD - Australian Height Datum       Logged By: M. Hodgins         SFA - Solid Flight Auger       D - Disturbed sample       BGS - Below Ground Surface       Project Manager: C. Roberts         HFA - Hollow Flight Auger       CS - Core sample       F       Project Manager: C. Roberts         PT - Push Tube       AH - Air Hammer       F       F									



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.2

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

			SUBSURFACE PROFIL	E	SAMPLE					
Depth	Graphic Log		Lithologic Desc	cription	Sample ID	PID (ppm)	Sample Type	Comments		
			Ground Surfa	ace				Leaf litter/bark		
 		grained sandsto END O		eneous, dry, loose, fine , garden bedding fabric and	HA14 0.0-0.1		D	Leaf litter/bark Sample location targeting former paint shed. QC03/QC03a.		
-										
-2.0										
	ng Method		Sample Type	Reference Level	Log Details					
SFA	HA - Hand Auger     U - Undisturbed tube sample     AHD - Australian Height Da.       SFA - Solid Flight Auger     D - Disturbed sample     BGS - Below Ground Surface       HFA - Hollow Flight Auger     CS - Core sample     SFA				Logged By: M. H Project Manager					

PT - Push Tube AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.7

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	,	SUBSURFAC	E PROFILE					SAMPLE	
Depth	Graphic Log	Litho	logic Descrip	tion	Sample ID	PID (ppm)	Sample Type	Comments	
		(	Ground Surface					Grass	
-0.0		FILL (FL) Silty SAND, brown with wh fine grained sand with inclu gravel, glass and tile fragm	nite, heterogeneo Isions of rootlets	ous, dry to damp, loose, , fine to coarse igneous	HA15 0.0-0.1		D		
-				HA15 0.2-0.3		D			
-				HA15 0.4-0.5		D			
	As above but with inclusions of coarse sandstone gravel.								
					HA15 0.6-0.7		D		
-		END OF HOLE at 0.7 m Refusal on sandstone obstr	<b>1 bgs.</b> ruction within fill	material.					
-1.0									
-									
-									
-									
-2.0					Log Datail-				
HA -	ng Method Hand Aug		ube sample AF	eference Level HD - Australian Height Datum					
HFA PT - I	- Solid Flig - Hollow F Push Tube Air Hamm	ight Auger CS - Core sample		GS - Below Ground Surface	Project Manager: C. Roberts				
АП -	лії папіт	71							



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.5

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFILE					SAMPLE	
Depth	Graphic Log	Lithologic Description	Samole ID		PID (ppm)	Sample Type	Comments	
		Ground Surface					Grass	
-0.0		FILL (FL) Sitty SAND, dark brown to black with white, heterogeneo loose, fine to medium grained sand with inclusions of roo Imported topsoil.	us, damp, HA16 0 otlets.	0.0-0.1		D		
_		As above but with inclusions of coarse sandstone gravel	HA16 0	0.2-0.3		D		
		As above but with increasing coarse sandstone gravels.	HA16 0	.4-0.5		D		
-		END OF HOLE at 0.5 m bgs. Refusal on sandstone obstruction within fill material.						
_								
-								
-								
-1.0								
-								
-								
_								
-								
-								
-								
-2.0								
Drillir	ng Method	Sample Type Reference Leve	el Log Det	ails				
	Hand Auge	er U - Undisturbed tube sample AHD - Australia	n Height Datum Logged	m Logged By: M. Hodgins				
	- Solid Flig		round Surface Project	Manager: (	C. Rob	erts		
	- Hollow Fi Push Tube	ight Auger CS - Core sample						
1								

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.3

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFILE					SAMPLE
Depth	Graphic Log	Lithologic Descripti	on	Sample ID	PID (ppm)	Sample Type	Comments
		Ground Surface					Leaf litter
-0.0		FILL (FL) Silty SAND, dark brown with white, heterogen fine grained sand with inclusions of coarse sa Imported topsoil.	neous, damp, loose, andstone gravel.	HA17 0.0-0.1		D	
			-	HA17 0.2-0.3		D	
-		END OF HOLE at 0.3 m bgs. Refusal on sandstone obstruction within fill m	naterial.				
-							
-							
-1.0							
-							
-							
-							
-							
-							
	ng Method	Sample Type Refe	erence Level	Log Details			
HA -	Hand Auge	er U - Undisturbed tube sample AHL	D - Australian Height Datum	Logged By: M. H			
HFA	- Solid Flig - Hollow Fl Push Tube	ight Auger CS - Core sample	S - Below Ground Surface	Project Manager	: C. Rol	perts	

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.6

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	, · ·		SUBSURFACE PROFIL	E				SAMPLE
Depth	Graphic Log		Lithologic Desc	cription	Sample ID	PID (ppm)	Sample Type	Comments
-0.0			Ground Surfa	ace				Leaf litter/bark
_		FILL (FL Silty SAN grained s Imported	ID, brown with white, heteroge and with inclusions of rootlets	eneous, dry, loose, fine and igneous gravel.	HA18 0.0-0.1		D	Sample location targeting incinerator.
-		FILL (FL Gravelly S sands wit	<b>-)</b> SAND, dark grey, heterogenec th medium to coarse igneous <u>c</u>	ous, dry, medium grained gravels.	HA18 0.2-0.3		D	Slight hydrocarbon odour.
-		FILL (FL Silty SAN sand with	<b>-)</b> ID, dark brown, heterogeneous medium igneous gravel. Meta	s, dry, loose, medium grained allic appearence.	HA18 0.4-0.5		D	No odour.
- - - - - - - - - - - -		END OF Refusal o	HOLE at 0.6 m bgs. on obstruction within fill materia	al.				
-2.0								
Drillin	ng Method		Sample Type	Reference Level	Log Details			
HA - SFA HFA PT -	HA - Hand Auger U - Undisturbed tube sample AHD - Australian Heig		AHD - Australian Height Datum BGS - Below Ground Surface					
L								



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.4

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

	SUBSURFACE PROFILE			SAMPLE				
Depth	Graphic Log	Lithologic Descriț	otion	Sample ID	PID (ppm)	Sample Type	Comments	
		Ground Surface		-			Leaf litter/bark	
-0.0		FILL (FL) Silty SAND, brown with white, heterogene grained sand with inclusions of medium ign sandstone gravel.		A19 0.0-0.1		D		
			HA	A19 0.2-0.3		D		
l §								
-	*****	END OF HOLE at 0.4 m bgs. Refusal on sandstone obstruction within fil	material.					
-								
-								
-1.0								
-								
-								
-								
-								
-								
2.0								
			-	og Details ogged Bv: M. H	odains			
SFA -	HA - Hand AugerU - Undisturbed tube sampleAHD - Australian Height DatumSFA - Solid Flight AugerD - Disturbed sampleBGS - Below Ground SurfaceHFA - Hollow Flight AugerCS - Core sampleCS - Core sample			Logged By: M. Hodgins Project Manager: C. Roberts				

AH - Air Hammer



Project No: 42458 Client: Uniting Care Project Name: War Memorial Hospital Site Address: 125 Birrell Street, Waverley

Date: 13/12/2012

Contractor: -

Drill Rig: -

Method: HA

Total Hole Depth (mbgs): 0.55

Eastings (MGA): -Northings (MGA): -Reference Level: BGS Elevation - Surface (m): Surface Bore Diameter (mm): 100mm

		SUBSURFACE PROFILE					SAMPLE	
Depth	Graphic Log	Lithologic Description		Sample ID	PID (ppm)	Sample Type	Comments	
		Ground Surface					Small garden pebbles	
-0.0		FILL (FL) Silty SAND, brown with white, heterogeneous, dry, grained sand with inclusions of sandstone gravel. In	loose, fine nported topsoil.	HA20 0.0-0.1		D	· · ·	
	$\times$	FILL (FL)						
_	SAND, white, heterogeneous, damp, loose. FILL (FL) Silty SAND, brown with white, heterogeneous, damp, loose, fine grained sand with inclusions of sandstone gravel.			HA20 0.2-0.3		D		
		grained sand with inclusions of sandstone gravel.						
-	FILL (FL) Silty SAND, brown, heterogeneous, damp, loose, fine grained sand with inclusions of ironstone gravel.			HA20 0.4-0.5		D		
-		END OF HOLE at 0.55 m bgs. Refusal on obstruction within fill material.						
-								
-1.0								
-								
F								
F								
Ļ								
+								
T								
-2.0								
	Drilling Method Sample Type Reference Level			Log Details				
HA -	Hand Aug	er U - Undisturbed tube sample AHD - Aust	tralian Height Datum	Logged By: M. H				
	- Solid Flig		w Ground Surface	Project Manager	r: C. Ro	berts		
	- Hollow F Push Tube	light Auger CS - Core sample						

AH - Air Hammer



# Appendix K Laboratory Documentation



Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 enquiries@envirolabservices.com.au www.envirolabservices.com.au

#### CERTIFICATE OF ANALYSIS

83208

Client: JBS Environmental Pty Ltd P.O. Box 940 MASCOT NSW 1460

Attention: C Roberts M Hodgins

#### Sample log in details:

Your Reference:	42458, War Men	nori	al Hospital
No. of samples:	66 Soils, 1 Mate	rial,	2 Waters
Date samples received / completed instructions received	14/12/2012	/	14/12/2012
This report replaces the previous report due to changes in re-	port comments.		

#### 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: / Issue Date:
 21/12/12
 /
 8/01/13

 Date of Preliminary Report:
 Not issued

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 Accredited for compliance with ISO/IEC 17025.

 Tests not covered by NATA are denoted with \*.

#### **Results Approved By:**

-- Alance Nancy Zhang Chemist

Rhian Morgan

Rhian Morgan Reporting Supervisor

Hinoko Mivazaki

Hinoko Miyaza Chemist

Lulu Guo

Approved Signatory

Envirolab Reference: Revision No:

83208 R 01



Jeremy Faircloth Chemist

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil & Material	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
$vTPHC_6$ - 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
Surrogate aaa-Trifluorotoluene	%	121	117	108	116	114

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	83208-45	83208-55	83208-56	83208-57	83208-64
Your Reference		HA14	HA18	HA18	HA18	QC01
Depth		0.0-0.1	0.0-0.1	0.2-0.3	0.4-0.5	-
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - 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
Surrogate aaa-Trifluorotoluene	%	119	121	114	118	111

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil & Material	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
TRHC 10 - C 14	mg/kg	<50	<50	<50	<50	<50
TRHC 15 - C28	mg/kg	<100	<100	140	<100	260
TRHC29 - C36	mg/kg	<100	110	160	<100	290
TRH>C10-C16	mg/kg	<50	<50	<50	<50	<50
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C16-C34	mg/kg	<100	150	250	<100	430
TRH>C34-C40	mg/kg	<100	<100	<100	<100	130
Surrogate o-Terphenyl	%	101	100	102	90	102

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	83208-45	83208-55	83208-56	83208-57	83208-64
Your Reference		HA14	HA18	HA18	HA18	QC01
Depth		0.0-0.1	0.0-0.1	0.2-0.3	0.4-0.5	-
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
TRHC 10 - C14	mg/kg	<50	<50	<50	<50	<50
TRHC 15 - C28	mg/kg	<100	140	<100	<100	230
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	160	110	<100	<100	170
TRH>C10-C16	mg/kg	<50	<50	<50	<50	<50
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C16-C34	mg/kg	170	210	130	130	350
TRH>C34-C40	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	95	96	98	93	100

PAHs in Soil						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil & Material	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Naphthalene	mg/kg	0.1	<0.1	0.1	<0.1	0.1
Acenaphthylene	mg/kg	<0.1	0.4	0.5	0.1	0.4
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	<0.1	0.2	0.2	<0.1	0.2
Phenanthrene	mg/kg	0.5	2.6	3.2	1.0	5.2
Anthracene	mg/kg	0.1	0.6	0.7	0.2	0.8
Fluoranthene	mg/kg	1.2	5.0	7.0	2.3	12
Pyrene	mg/kg	1.3	5.2	7.3	2.3	12
Benzo(a)anthracene	mg/kg	0.6	2.6	4.1	1.2	5.3
Chrysene	mg/kg	0.7	2.4	3.9	1.1	5.5
Benzo(b+k)fluoranthene	mg/kg	1.3	4.2	7.6	2.2	11
Benzo(a)pyrene	mg/kg	0.87	3.1	5.5	1.5	7.7
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	1.7	3.2	0.9	5.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.3	0.7	0.1	0.9
Benzo(g,h,i)perylene	mg/kg	0.5	1.5	2.9	0.8	4.5
Benzo(a)pyrene TEQ	mg/kg	1	4.0	8.0	2	11
Surrogate p-Terphenyl-d14	%	120	107	108	103	109

PAHs in Soil						
Our Reference:	UNITS	83208-45	83208-55	83208-56	83208-57	83208-64
Your Reference		HA14	HA18	HA18	HA18	QC01
Depth		0.0-0.1	0.0-0.1	0.2-0.3	0.4-0.5	-
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	1.3
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.7
Phenanthrene	mg/kg	0.6	0.3	0.2	0.5	9.2
Anthracene	mg/kg	0.1	<0.1	<0.1	0.1	2.3
Fluoranthene	mg/kg	1.1	0.7	0.5	1.3	14
Pyrene	mg/kg	1.2	0.8	0.5	1.3	14
Benzo(a)anthracene	mg/kg	0.6	0.4	0.2	0.7	7.8
Chrysene	mg/kg	0.5	0.4	0.2	0.6	6.3
Benzo(b+k)fluoranthene	mg/kg	1.0	0.9	0.4	1.3	10
Benzo(a)pyrene	mg/kg	0.71	0.56	0.23	0.90	7.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.4	0.1	0.5	3.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.8
Benzo(g,h,i)perylene	mg/kg	0.4	0.3	<0.1	0.5	3.0
Benzo(a)pyrene TEQ	mg/kg	1	1	<0.5	1	10
Surrogate p-Terphenyl-d14	%	110	109	112	107	105

Client Reference:	42458, War Memorial Hospital
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Organochlorine Pesticides in soil						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil & Material	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
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
Surrogate TCMX	%	97	87	92	79	81

Chefit Reference.	Client	Reference:
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# 42458, War Memorial Hospital

Organochlorine Pesticides in soil				
Our Reference:	UNITS	83208-45	83208-55	83208-64
Your Reference		HA14	HA18	QC01
Depth		0.0-0.1	0.0-0.1	-
Date Sampled		13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012
НСВ	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	90	88

Organophosphorus Pesticides						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil & Material	Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
Diazinon	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
Chlorpyriphos-methyl	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
Chlorpyriphos	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
Bromophos-ethyl	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
Surrogate TCMX	%	97	87	92	79	81

Organophosphorus Pesticides				
Our Reference:	UNITS	83208-45	83208-55	83208-64
Your Reference		HA14	HA18	QC01
Depth		0.0-0.1	0.0-0.1	-
Date Sampled		13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	90	88

PCBs in Soil						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled Type of sample		12/12/2012 Soil	12/12/2012 Soil & Material	13/12/2012 Soil	13/12/2012 Soil	13/12/2012 Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.5	<0.1	0.5
Arochlor 1260	mg/kg	<0.1	<0.1	<0.5	<0.1	<0.1
Surrogate TCLMX	%	97	87	92	79	81

PCBs in Soil				
Our Reference:	UNITS	83208-45	83208-55	83208-64
Your Reference		HA14	HA18	QC01
Depth		0.0-0.1	0.0-0.1	-
Date Sampled		13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil
Date extracted	-	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	19/12/2012	19/12/2012	19/12/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	86	90	88

Acid Extractable metals in soil						
Our Reference:	UNITS	83208-1	83208-5	83208-10	83208-15	83208-17
Your Reference		HA01	HA02	HA03	HA04	HA05
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	12/12/2012	12/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil & Material	Soil	Soil
Date digested	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Arsenic	mg/kg	<4	4	<4	<4	7
Cadmium	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Chromium	mg/kg	5	15	7	27	8
Copper	mg/kg	25	140	36	25	44
Lead	mg/kg	370	550	190	91	390
Mercury	mg/kg	0.2	0.4	0.3	0.1	0.5
Nickel	mg/kg	4	16	5	30	6
Zinc	mg/kg	130	550	160	110	210
		l	<u> </u>	<u> </u>	<u> </u>	I
Acid Extractable metals in soil						
Our Reference:	UNITS	83208-20	83208-21	83208-24	83208-27	83208-30
Your Reference		HA06	HA07	HA08	HA09	HA10
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled Type of sample		13/12/2012 Soil	13/12/2012 Soil	13/12/2012 Soil	13/12/2012 Soil	13/12/2012 Soil
Datedigested	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Arsenic	mg/kg	5	7	8	<4	<4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	10	15	10	8	6
Copper	mg/kg	31	19	99	37	21
Lead	mg/kg	740	280	510	200	210
Mercury	mg/kg	0.2	0.2	3.0	0.5	0.4
Nickel	mg/kg	5	2	4	2	2
Zinc	mg/kg	150	140	200	76	150
			I			
Acid Extractable metals in soil		00000.04	00000.07	00000 11	00000 45	00000 40
Our Reference: Your Reference	UNITS	83208-34 HA11	83208-37 HA12	83208-41 HA13	83208-45 HA14	83208-46 HA15
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Datedigested	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Arsenic	mg/kg	9	<4	4	<4	5
Cadmium	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	11	8	8	14	13
Copper	mg/kg	87	30	34	83	62
Lead				570	320	
	mg/kg	1,500	1,300			1,400
Mercury	mg/kg	0.3	0.9	0.6	0.1	0.7
Nickel	mg/kg	21	3	3	7	8
Zinc	mg/kg	720	170	150	730	270

Acid Extractable metals in soil						
Our Reference:	UNITS	83208-50	83208-53	83208-55	83208-56	83208-57
Your Reference		HA16	HA17	HA18	HA18	HA18
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.2-0.3	0.4-0.5
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Arsenic	mg/kg	5	<4	<4	<4	<4
Cadmium	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Chromium	mg/kg	8	8	21	12	15
Copper	mg/kg	33	55	62	120	58
Lead	mg/kg	180	270	160	100	120
Mercury	mg/kg	0.2	0.3	0.4	0.3	0.2
Nickel	mg/kg	6	5	18	10	10
Zinc	mg/kg	170	340	190	120	180
				Γ	Γ	
Acid Extractable metals in soil Our Reference:		82208 58	82208 60	92209 64	92209 65	92209 70
Your Reference	UNITS	83208-58 HA19	83208-60 HA20	83208-64 QC01	83208-65 QC02	83208-70 HA12 -
		TIA 19	TIA20	QCOT	QOUZ	Triplicate
Depth		0.0-0.1	0.0-0.1	-	-	0.0-0.1
Date Sampled		13/12/2012	13/12/2012	12/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.5	0.7	<0.5	<0.5	<0.5
Chromium	mg/kg	13	4	7	6	8
Copper	mg/kg	46	17	39	22	30
Lead	mg/kg	510	65	240	240	1,100
Mercury	mg/kg	0.2	<0.1	0.3	0.3	0.7
Nickel	mg/kg	11	2	7	2	4
Zinc	mg/kg	150	83	180	180	170

Moisture						
Our Reference:	UNITS	83208-1	83208-5	83208-10	83208-15	83208-17
Your Reference		HA01	HA02	HA03	HA04	HA05
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	12/12/2012	12/12/2012	12/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil & Material	Soil	Soil
		17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date prepared	-					
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Moisture	%	11	14	7.3	11	23
Moisture						
Our Reference:	UNITS	83208-20	83208-21	83208-24	83208-27	83208-30
Your Reference		HA06	HA07	HA08	HA09	HA10
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Moisture	%	16	8.9	22	14	5.4
Molotare	70	10	0.0		17	0.4
Moisture						
Our Reference:	UNITS	83208-34	83208-37	83208-41	83208-45	83208-46
Your Reference		HA11	HA12	HA13	HA14	HA15
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
		17/10/0010	47/40/0040	47/40/0040	47/40/0040	47/40/0040
Date prepared	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Moisture	%	12	7.3	11	9.2	12
	I					
Moisture						
Our Reference:	UNITS	83208-50	83208-53	83208-55	83208-56	83208-57
Your Reference		HA16	HA17	HA18	HA18	HA18
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.2-0.3	0.4-0.5
Date Sampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/12/2012	17/12/2012	17/12/2012	17/12/2012	17/12/2012
Date analysed	-	18/12/2012	18/12/2012	18/12/2012	18/12/2012	18/12/2012
Moisture	%	18	10	9.1	8.4	9.5
	70	10			<b>~</b> . 1	0.0
	70	10	10	0.1		
Moisture	70	10				]
Moisture Our Reference:	UNITS	83208-58	83208-60	83208-64	83208-65	
Our Reference:		83208-58		83208-64	83208-65 QC02	
Our Reference: Your Reference			83208-60		83208-65 QC02 -	
Our Reference: Your Reference Depth	UNITS	83208-58 HA19 0.0-0.1	83208-60 HA20 0.0-0.1	83208-64 QC01 -	QC02 -	
Our Reference: Your Reference	UNITS	83208-58 HA19	83208-60 HA20	83208-64		
Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS 	83208-58 HA19 0.0-0.1 13/12/2012 Soil	83208-60 HA20 0.0-0.1 13/12/2012 Soil	83208-64 QC01 - 12/12/2012 Soil	QC02 - 13/12/2012 Soil	
Our Reference: Your Reference Depth Date Sampled Type of sample Date prepared	UNITS	83208-58 HA19 0.0-0.1 13/12/2012 Soil 17/12/2012	83208-60 HA20 0.0-0.1 13/12/2012 Soil 17/12/2012	83208-64 QC01 - 12/12/2012 Soil 17/12/2012	QC02 - 13/12/2012 Soil 17/12/2012	
Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS 	83208-58 HA19 0.0-0.1 13/12/2012 Soil	83208-60 HA20 0.0-0.1 13/12/2012 Soil	83208-64 QC01 - 12/12/2012 Soil	QC02 - 13/12/2012 Soil	

Asbestos ID - soils						
Our Reference:	UNITS	83208-1	83208-10	83208-17	83208-30	83208-34
Your Reference		HA01	HA03	HA05	HA10	HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled Type of sample		12/12/2012 Soil	12/12/2012 Soil & Material	13/12/2012 Soil	13/12/2012 Soil	13/12/2012 Soil
Date analysed	-	19/12/2012	19/12/2012	19/12/2012	19/12/2012	19/12/2012
Sample mass tested	g	Approx 50g				
Sample Description	-	Brown coarse- grained sandy soil				
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg				
Trace Analysis	-	No respirable fibres detected				

Asbestos ID - soils				
Our Reference:	UNITS	83208-45	83208-55	83208-64
Your Reference		HA14	HA18	QC01
Depth		0.0-0.1	0.0-0.1	-
Date Sampled		13/12/2012	13/12/2012	12/12/2012
Type of sample		Soil	Soil	Soil
Date analysed	-	19/12/2012	19/12/2012	19/12/2012
Sample mass tested	g	Approx 50g	Approx 50g	Approx 50g
Sample Description	-	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

#### Client Reference:

# 42458, War Memorial Hospital

Asbestos ID - materials			
Our Reference:	UNITS	83208-10	83208-63
Your Reference		HA03	ACM01
Depth		0.0-0.1	-
Date Sampled Type of sample		12/12/2012 Soil & Material	13/12/2012 Material
Date analysed	-	19/12/2012	19/12/2012
Mass / Dimension of Sample	-	17x16x7mm	95x75x5mm
Sample Description	-	Black shiny brittle bituminous material	Beige layered fibre cement material
Asbestos ID in materials	-	No asbestos detected	No asbestos detected

#### Client Reference: 42458

Metals in Water - Dissolved		
Our Reference:	UNITS	83208-68
Your Reference		RB01
Depth		-
Date Sampled		13/12/2012
Type of sample		Water
Date digested	-	17/12/2012
Date analysed	-	17/12/2012
Arsenic - Dissolved	mg/L	<0.05
Cadmium - Dissolved	mg/L	<0.01
Chromium - Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	<0.01
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	<0.02

#### Client Reference: 42458, V

# 42458, War Memorial Hospital

	-	
vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	83208-69
Your Reference		TS
Depth		-
Date Sampled		13/12/2012
Type of sample		Water
Date extracted	-	17/12/2012
Date analysed	-	18/12/2012
Benzene	μg/L	103%
Toluene	µg/L	109%
Ethylbenzene	µg/L	111%
m+p-xylene	μg/L	113%
o-xylene	μg/L	112%
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	104
MethodID	Methodology Summary	
------------------------	---	
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 draft Guideline on Investigation Levels for Soil and Groundwater.	
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.	
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 draft Guideline on Investigation Levels for Soil and Groundwater.	
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.	
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.	
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.	
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.	
Metals-020 ICP- AES	Determination of various metals by ICP-AES.	
Metals-021 CV- AAS	Determination of Mercury by Cold Vapour AAS.	
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.	
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.	

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QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			18/12/2 012	83208-1	18/12/2012  18/12/2012	LCS-3	18/12/2012
TRHC6 - C9	mg/kg	25	Org-016	<25	83208-1	<25  <25	LCS-3	122%
TRHC6 - C10	mg/kg	25	Org-016	<25	83208-1	<25  <25	LCS-3	122%
vTPHC6 - C10 less BTEX (F1)	mg/kg	25	Org-016	[NT]	83208-1	<25  <25	[NR]	[NR]
Benzene	mg/kg	0.2	Org-016	<0.2	83208-1	<0.2  <0.2	LCS-3	130%
Toluene	mg/kg	0.5	Org-016	<0.5	83208-1	<0.5  <0.5	LCS-3	124%
Ethylbenzene	mg/kg	1	Org-016	<1	83208-1	<1  <1	LCS-3	106%
m+p-xylene	mg/kg	2	Org-016	~2	83208-1	<2  <2	LCS-3	124%
o-Xylene	mg/kg	1	Org-016	<1	83208-1	<1  <1	LCS-3	126%
naphthalene	mg/kg	1	Org-014	<1	83208-1	<1  <1	[NR]	[NR]
<i>Surrogate</i> aaa- Trifluorotoluene	%		Org-016	117	83208-1	121  117  RPD:3	LCS-3	118%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	Duplicate results	Spike Sm#	Spike %
svTRH (C10-C40) in Soil					Sm#	Base II Duplicate II % RPD		Recovery
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			18/12/2 012	83208-1	18/12/2012  18/12/2012	LCS-3	18/12/2012
TRHC 10 - C14	mg/kg	50	Org-003	<50	83208-1	<50  <50	LCS-3	96%
TRHC 15 - C28	mg/kg	100	Org-003	<100	83208-1	<100  <100	LCS-3	108%
TRHC29 - C36	mg/kg	100	Org-003	<100	83208-1	<100  <100	LCS-3	91%
TRH>C10-C16	mg/kg	50	Org-003	<50	83208-1	<50  <50	LCS-3	96%
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	50	Org-003	[NT]	83208-1	<50  <50	[NR]	[NR]
TRH>C16-C34	mg/kg	100	Org-003	<100	83208-1	<100  <100	LCS-3	91%
TRH>C34-C40	mg/kg	100	Org-003	<100	83208-1	<100  <100	LCS-3	98%
Surrogate o-Terphenyl	%		Org-003	94	83208-1	101  97  RPD:4	LCS-3	103%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			18/12/2 012	83208-1	18/12/2012  18/12/2012	LCS-3	18/12/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.1  <0.1	LCS-3	107%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	<0.1  <0.1	LCS-3	109%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.5  0.5  RPD:0	LCS-3	106%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.1  0.1  RPD:0	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	1.2  1.2  RPD:0	LCS-3	106%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	1.3  1.2  RPD:8	LCS-3	106%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.6  0.6  RPD:0	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.7  0.6  RPD:15	LCS-3	108%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	83208-1	1.3  1.2  RPD:8	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	83208-1	0.87  0.82  RPD:6	LCS-3	117%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.5  0.5  RPD:0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	83208-1	0.5  0.5  RPD:0	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	0.5	Org-012 subset	[NT]	83208-1	1  1  RPD:0	[NR]	[NR]
Surrogate p-Terphenyl- d14	%		Org-012 subset	108	83208-1	120  105  RPD:13	LCS-3	100%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			19/12/2 012	83208-1	19/12/2012  19/12/2012	LCS-3	19/12/2012
HCB	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	105%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	92%
Heptachlor	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	88%
delta-BHC	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	90%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	94%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	98%
Dieldrin	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	97%
Endrin	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	88%
pp-DDD	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	84%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	LCS-3	94%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	92	83208-1	97  88  RPD:10	LCS-3	78%

Client Reference: 42458, War Memorial Hospital								
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			19/12/2 012	83208-1	19/12/2012  19/12/2012	LCS-3	19/12/2012
Diazinon	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1  <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1  <0.1	LCS-3	85%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1  <0.1	LCS-3	84%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	83208-1	<0.1  <0.1	LCS-3	88%
Surrogate TCMX	%		Org-008	92	83208-1	97  88  RPD:10	LCS-3	73%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-3	17/12/2012
Date analysed	-			19/12/2 012	83208-1	19/12/2012  19/12/2012	LCS-3	19/12/2012
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	LCS-3	104%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	83208-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	92	83208-1	97  88  RPD:10	LCS-3	81%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II % RPD		
Date digested	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-1	17/12/2012
Date analysed	-			17/12/2 012	83208-1	17/12/2012  17/12/2012	LCS-1	17/12/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	83208-1	<4  <4	LCS-1	103%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	83208-1	<0.5  <0.5	LCS-1	98%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	83208-1	5  5  RPD:0	LCS-1	100%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	83208-1	25  26  RPD:4	LCS-1	97%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	83208-1	370  370  RPD:0	LCS-1	104%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	83208-1	0.2  0.1  RPD:67	LCS-1	98%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	emorial Hospital Duplicate results	Spike Sm#	Spike %
QUALITYCONTROL	UNITS	PQL	WETHOD	ыапк	Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II % RPD		
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	83208-1	4  4  RPD:0	LCS-1	98%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	83208-1	130  130  RPD:0	LCS-1	97%
QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank				
Date prepared	-			[NT]	1			
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				
QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank				
Date analysed	-			[NT]				
QUALITY CONTROL Asbestos ID - materials	UNITS	PQL	METHOD	Blank				
Date analysed	-			[NT]				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in Water - Dissolved						Base II Duplicate II % RPD		
Date digested	-			17/12/2 012	[NT]	[NT]	LCS-W1	17/12/2012
Date analysed	-			17/12/2 012	[NT]	[NT]	LCS-W1	17/12/2012
Arsenic - Dissolved	mg/L	0.05	Metals-020 ICP-AES	<0.05	[NT]	[NT]	LCS-W1	100%
Cadmium - Dissolved	mg/L	0.01	Metals-020 ICP-AES	<0.01	[NT]	[NT]	LCS-W1	98%
Chromium - Dissolved	mg/L	0.01	Metals-020 ICP-AES	<0.01	[NT]	[NT]	LCS-W1	101%
Copper - Dissolved	mg/L	0.01	Metals-020 ICP-AES	<0.01	[NT]	[NT]	LCS-W1	101%
Lead - Dissolved	mg/L	0.03	Metals-020 ICP-AES	<0.03	[NT]	[NT]	LCS-W1	98%
Mercury - Dissolved	mg/L	0.0005	Metals-021 CV-AAS	<0.000 5	[NT]	[NT]	LCS-W1	96%
Nickel - Dissolved	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	LCS-W1	103%
Zinc - Dissolved	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	LCS-W1	101%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXNin Water						Base II Duplicate II % RPD		
Date extracted	-			17/12/2 012	[NT]	[NT]	LCS-W1	17/12/2012
Date analysed	-			18/12/2 012	[NT]	[NT]	LCS-W1	18/12/2012
TRHC6 - C9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	107%
TRHC6 - C10	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	107%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	106%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	107%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	107%
m+p-xylene	µg/L	2	Org-016	~2	[NT]	[NT]	LCS-W1	107%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	106%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	98	[NT]	[NT]	LCS-W1	94%
Surrogate toluene-d8	%		Org-016	89	[NT]	[NT]	LCS-W1	101%
Surrogate 4-BFB	%		Org-016	95	[NT]	[NT]	LCS-W1	100%
QUALITYCONTROL	UNITS	5	Dup.Sm#		Duplicate	Spike Sm#	Spike % Reco	overy
vTRH(C6-C10)/BTEXNin Soil				Base+I	Duplicate+%RF	P.		
Date extracted	-		[NT]		[NT]	83208-10	17/12/201	2
Date analysed	-		[NT]		[NT]	83208-10	18/12/201	2
TRHC6 - C9	mg/kg	q	[NT]		[NT]	83208-10	119%	
TRHC6 - C10	mg/kg	q	[NT]		[NT]	83208-10	119%	
vTPHC6 - C10 less BTEX (F1)	mg/k	-	[NT]		[NT]	[NR]	[NR]	
Benzene	mg/kg	q	[NT]		[NT]	83208-10	128%	
Toluene	mg/kg		[NT]		[NT]	83208-10	120%	
Ethylbenzene	mg/kg		[NT]		[NT]	83208-10	103%	
m+p-xylene	mg/k		[NT]		[NT]	83208-10	122%	
o-Xylene	mg/k		[NT]		[NT]	83208-10	122%	
-								
naphthalene <i>Surrogate</i> aaa- Trifluorotoluene	mg/kg	9	[NT] [NT]		[NT] [NT]	[NR] 83208-10	[NR] 116%	

		Client Referenc	e: 42458, War Memor	rial Hospital	
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	18/12/2012
TRHC 10 - C 14	mg/kg	[NT]	[NT]	83208-10	96%
TRHC 15 - C28	mg/kg	[NT]	[NT]	83208-10	117%
TRHC29 - C36	mg/kg	[NT]	[NT]	83208-10	91%
TRH>C10-C16	mg/kg	[NT]	[NT]	83208-10	96%
TRH>C10 - C16 less Naphthalene (F2)	mg/kg	[NT]	[NT]	[NR]	[NR]
TRH>C16-C34	mg/kg	[NT]	[NT]	83208-10	91%
TRH>C34-C40	mg/kg	[NT]	[NT]	83208-10	80%
Surrogate o-Terphenyl	%	[NT]	[NT]	83208-10	106%
QUALITYCONTROL	UNITS	Dup.Sm#	Duplicate	Spike Sm#	Spike % Recovery
PAHs in Soil			Base + Duplicate + %RPD		
Date extracted	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	18/12/2012
Naphthalene	mg/kg	[NT]	[NT]	83208-10	115%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	83208-10	113%
Phenanthrene	mg/kg	[NT]	[NT]	83208-10	126%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	83208-10	#
Pyrene	mg/kg	[NT]	[NT]	83208-10	#
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	83208-10	137%
Benzo(b+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	83208-10	#
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl- d14	%	[NT]	[NT]	83208-10	105%

		Client Referenc	e: 42458, War Memor	rial Hospital	
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup.Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	19/12/2012
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	83208-10	88%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	83208-10	92%
Heptachlor	mg/kg	[NT]	[NT]	83208-10	78%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	83208-10	92%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	83208-10	97%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	83208-10	102%
Dieldrin	mg/kg	[NT]	[NT]	83208-10	100%
Endrin	mg/kg	[NT]	[NT]	83208-10	88%
pp-DDD	mg/kg	[NT]	[NT]	83208-10	87%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	83208-10	96%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	83208-10	79%

		Client Reference	e: 42458, War Memo	rial Hospital	
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	19/12/2012
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	83208-10	96%
Fenitrothion	mg/kg	[NT]	[NT]	83208-10	93%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	83208-10	99%
Surrogate TCMX	%	[NT]	[NT]	83208-10	83%
QUALITY CONTROL PCBs in Soil	UNITS	Dup.Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	19/12/2012
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	83208-10	108%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	83208-10	92%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + % RPD	Spike Sm#	Spike % Recovery
Datedigested	-	83208-37	17/12/2012  17/12/2012	LCS-2	17/12/2012
Date analysed	-	83208-37	17/12/2012  17/12/2012	LCS-2	17/12/2012
Arsenic	mg/kg	83208-37	<4  <4	LCS-2	103%
Cadmium	mg/kg	83208-37	<0.5  <0.5	LCS-2	100%
Chromium	mg/kg	83208-37	8  8  RPD:0	LCS-2	102%
Copper	mg/kg	83208-37	30  30  RPD:0	LCS-2	99%
Lead	mg/kg	83208-37	1300  3200  RPD:84	LCS-2	104%
Mercury	mg/kg	83208-37	0.9  1.0  RPD:11	LCS-2	102%
Nickel	mg/kg	83208-37	3  4  RPD:29	LCS-2	98%
Zinc	mg/kg	83208-37	170  180  RPD:6	LCS-2	97%

		Client Referenc	e: 42458, War Memo	rial Hospital	
QUALITYCONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	83208-10	17/12/2012
Date analysed	-	[NT]	[NT]	83208-10	17/12/2012
Arsenic	mg/kg	[NT]	[NT]	83208-10	116%
Cadmium	mg/kg	[NT]	[NT]	83208-10	100%
Chromium	mg/kg	[NT]	[NT]	83208-10	109%
Copper	mg/kg	[NT]	[NT]	83208-10	111%
Lead	mg/kg	[NT]	[NT]	83208-10	115%
Mercury	mg/kg	[NT]	[NT]	83208-10	100%
Nickel	mg/kg	[NT]	[NT]	83208-10	102%
Zinc	mg/kg	[NT]	[NT]	83208-10	113%

#### **Report Comments:**

Asbestos in Soil: Excessive sample volume was 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.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteriae has been exceeded for 83208-37 for Pb. Therefore a triplicate result has been issued as laboratory sample number 83208-70.

PAHs in Soil: # Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

PCB's in soil: PQL has been raised due to interference from analytes(other than those being tested) in the sample/s.

Asbestos ID was analysed by Approved Identifier:	Kim Femia, Paul Ching
Asbestos ID was authorised by Approved Signatory:	Lulu Guo

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

#### **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.

#### 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 batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 enquiries@envirolabservices.com.au www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS

83208-A

Client: JBS Environmental Pty Ltd P.O. Box 940 MASCOT NSW 1460

Attention: C Roberts M Hodgins

### Sample log in details:

Your Reference: No. of samples: Date samples received / completed instructions received

### 42458, War Memorial Hospital

Additional Testing on 10 Soils 14/12/2012 / 02/01/13

### 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: / Issue Date:
 9/01/13
 /
 9/01/13

 Date of Preliminary Report:
 Not issued

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### **Results Approved By:**

-Alana Nancy Zhang

Chemist

Rhian Morgan Reporting Supervisor

Jeremy Faircloth Chemist

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Envirolab Reference: Revision No:

83208-A R 00



PAHs in Soil				
Our Reference:	UNITS	83208-A-11	83208-A-18	83208-A-35
Your Reference	HA03 HA05		HA11	
Depth	0.2-0.3 0.2-0.3		0.2-0.3	
Date Sampled			13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil
Date extracted	-	03/01/2012	03/01/2012	03/01/2012
Date analysed	-	03/01/2012	03/01/2012	03/01/2012
Naphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.8	0.4	<0.1
Acenaphthene	mg/kg <0.1 <0.1		<0.1	
Fluorene	mg/kg	mg/kg 0.4 0.2		<0.1
Phenanthrene	mg/kg	5.8	2.6	0.2
Anthracene	mg/kg	1.4	0.5	<0.1
Fluoranthene	mg/kg	9.1	4.3	0.8
Pyrene	mg/kg S		4.5	0.9
Benzo(a)anthracene	mg/kg 4.5 2.1		0.4	
Chrysene	mg/kg	4.1 2.0		0.4
Benzo(b+k)fluoranthene	mg/kg	6.4	3.4	0.9
Benzo(a)pyrene	mg/kg	4.4	2.4	0.59
Indeno(1,2,3-c,d)pyrene	mg/kg	1.7	1.0	0.3
Dibenzo(a,h)anthracene	mg/kg	0.4	0.3	<0.1
Benzo(g,h,i)perylene	mg/kg	1.6	1.0	0.3
Benzo(a)pyrene TEQ	mg/kg	6.0	3.0	1
Surrogate p-Terphenyl-d14	%	92	97	99

Acid Extractable metals in soil				
Our Reference:	UNITS	83208-A-35	83208-A-38	83208-A-47
Your Reference		HA11	HA12	HA15
Depth		0.2-0.3	0.2-0.3	0.2-0.3
Date Sampled		13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil
Date digested	-	03/01/2013	03/01/2013	03/01/2013
Date analysed	-	03/01/2013	03/01/2013	03/01/2013
Arsenic	mg/kg	<4	<4	5
Cadmium	mg/kg	<0.5	<0.5	<0.5
Chromium	mg/kg	4	6	11
Copper	mg/kg	25	15	45
Lead	mg/kg	570	770	1,200
Mercury	mg/kg	0.3	0.6	0.7
Nickel	mg/kg	7	3	5
Zinc	mg/kg	160	98	230

Moisture						
Our Reference:	UNITS	83208-A-11	83208-A-18	83208-A-35	83208-A-38	83208-A-47
Your Reference		HA03	HA05	HA11	HA12	HA15
Depth		0.2-0.3	0.2-0.3	0.2-0.3	0.2-0.3	0.2-0.3
Date Sampled		12/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/01/2013	03/01/2013	03/01/2013	03/01/2013	03/01/2013
Date analysed	-	04/01/2013	04/01/2013	04/01/2013	04/01/2013	04/01/2013
Moisture	%	11	21	8.5	9.5	12

Client Reference:	42458, War Memorial Hospital
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Metals in TCLP USEPA1311					
Our Reference:	UNITS	83208-A-17	83208-A-34	83208-A-37	83208-A-46
Your Reference		HA05	HA11	HA12	HA15
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
DateSampled		13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	04/01/2013	04/01/2013	04/01/2013	04/01/2013
Date analysed	-	[NA]	04/01/2013	04/01/2013	04/01/2013
pH of soil for fluid# determ.	pH units	6.7	6.2	6.0	7.4
pH of soil for fluid # determ. (acid)	pH units	1.6	1.6	1.6	1.6
Extraction fluid used	-	1	1	1	1
pH of final Leachate	pH units	5.0	4.9	4.9	5.0
Arsenic in TCLP	mg/L	[NA]	<0.05	<0.05	<0.05
CadmiuminTCLP	mg/L	[NA]	<0.01	<0.01	<0.01
Chromium in TCLP	mg/L	[NA]	<0.01	<0.01	<0.01
Copper in TCLP	mg/L	[NA]	<0.01	<0.01	0.03
LeadinTCLP	mg/L	[NA]	1	1.1	0.7
Mercury in TCLP	mg/L	[NA]	<0.0005	<0.0005	<0.0005
Nickel in TCLP	mg/L	[NA]	0.03	<0.02	<0.02
ZincinTCLP	mg/L	[NA]	6.1	1.2	0.9

PAHs in TCLP (USEPA 1311)			
Our Reference:	UNITS	83208-A-17	83208-A-34
Your Reference		HA05	HA11
Depth		0.0-0.1	0.0-0.1
DateSampled		13/12/2012	13/12/2012
Type of sample		Soil	Soil
Date extracted	-	04/01/2012	04/01/2012
Date analysed	-	04/01/2012	04/01/2012
Naphthalene in TCLP	mg/L	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001
FluorantheneinTCLP	mg/L	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001
Surrogate p-Terphenyl-d14	%	86	95

Metals-ASLP Neutral (ICP-MS)						
Our Reference:	UNITS	83208-A-10	83208-A-17	83208-A-34	83208-A-37	83208-A-46
Your Reference		HA03	HA05	HA11	HA12	HA15
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	13/12/2012	13/12/2012	13/12/2012	13/12/2012
Type of sample		Soil & Material	Soil	Soil	Soil	Soil
Date extracted	-	04/01/2013	04/01/2013	04/01/2013	04/01/2013	04/01/2013
Date analysed	-	[NA]	[NA]	04/01/2013	04/01/2013	04/01/2013
pH of final Leachate	pH units	6.0	6.5	6.3	6.1	7.5
Arsenic in ASLP	µg/L	[NA]	[NA]	1	<1	2
Cadmium in ASLP	µg/L	[NA]	[NA]	<0.1	<0.1	<0.1
Chromium in ASLP	µg/L	[NA]	[NA]	<1	<1	<1
Copper in ASLP	µg/L	[NA]	[NA]	4	5	7
Lead in ASLP	µg/L	[NA]	[NA]	11	33	9
Mercury in ASLP	µg/L	[NA]	[NA]	<0.050	0.060	0.20
Nickel in ASLP	µg/L	[NA]	[NA]	1	<1	<1
Zinc in ASLP	µg/L	[NA]	[NA]	120	41	8

PAHs in water leach				
Our Reference:	UNITS	83208-A-10	83208-A-17	83208-A-34
Your Reference		HA03 HA05		HA11
Depth		0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		12/12/2012	13/12/2012	13/12/2012
Type of sample		Soil & Material	Soil	Soil
Date extracted	-	04/01/2012	04/01/2012	04/01/2012
Date analysed	-	04/01/2012	04/01/2012	04/01/2012
Naphthalene in ASLP	mg/L	<0.001	<0.001	<0.001
Acenaphthylene in ASLP	mg/L	<0.001	<0.001	<0.001
Acenaphthene in ASLP	mg/L	<0.001	<0.001 <0.001	
Fluorene in ASLP	mg/L	<0.001	<0.001	<0.001
Phenanthrene in ASLP	mg/L	/L <0.001 <0.001		<0.001
Anthracene in ASLP	mg/L	mg/L <0.001 <0.		<0.001
Fluoranthene in ASLP	mg/L	/L <0.001 <0.001		<0.001
Pyrene in ASLP	mg/L	<0.001	<0.001	<0.001
Benzo(a)anthracene in ASLP	mg/L	<0.001	<0.001	<0.001
Chrysene in ASLP	mg/L	<0.001	<0.001	<0.001
Benzo(b+k)fluoranthene in ASLP	mg/L	<0.002	<0.002	<0.002
Benzo(a)pyrene in ASLP	mg/L	<0.001 <0.001		<0.001
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in ASLP	mg/L	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in ASLP	mg/L	<0.001	<0.001	<0.001
Surrogate p-Terphenyl-d14	%	90	99	92

MethodID	Methodology Summary
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
Metals-020 ICP- AES	Determination of various metals by ICP-AES.
Metals-021 CV- AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311.
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA 22nd ED, 4500-H+.
Metals-020 ICP- AES	Determination of various metals by ICP-AES.
Metals-021 CV- AAS	Determination of Mercury by Cold Vapour AAS.
Org-012 subset	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals-022 ICP-MS	Determination of various metals by ICP-MS following leaching using neutralised deionised water by AS 4439.3 - 1997.
Metals-021 ASLP	Determination of Mercury by Cold Vapour AAS following neutral water leaching by AS 4439.3 - 1997.
Org-012 ASLP	ASLP Leachates are extracted with Dichloromethane and analysed by GC-MS.

Client	Reference
0.000	11010101100

e: 42458, War Memorial Hospital

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II % RPD		
Date extracted	-			03/01/2 012	[NT]	[NT]	LCS-2	03/01/2012
Date analysed	-			03/01/2 012	[NT]	[NT]	LCS-2	03/01/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	117%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	120%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	121%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	124%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	127%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	110%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-2	110%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	0.5	Org-012 subset	[NT]	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl- d14	%		Org-012 subset	102	[NT]	[NT]	LCS-2	93%

		Clie	nt Referenc	e: 42	2458, War Me	emorial Hospital		
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike %
Acid Extractable metals in soil					Sm#	Base II Duplicate II % RPD		Recovery
Date digested	-			03/01/2 013	[NT]	[NT]	LCS-1	03/01/2013
Date analysed	-			03/01/2 013	[NT]	[NT]	LCS-1	03/01/2013
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	94%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-1	96%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	95%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	96%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	94%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	104%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	97%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	98%
QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank				
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in TCLP USEPA1311						Base II Duplicate II % RPD		
Date extracted	-			04/01/2 012	83208-A-46	04/01/2013  04/01/2013	LCS-W1	07/01/2013
Date analysed	-			04/01/2 012	83208-A-46	04/01/2013  04/01/2013	LCS-W1	07/01/2013
Arsenic in TCLP	mg/L	0.05	Metals-020 ICP-AES	<0.05	83208-A-46	<0.05  <0.05	LCS-W1	106%
Cadmium in TCLP	mg/L	0.01	Metals-020 ICP-AES	<0.01	83208-A-46	<0.01    <0.01	LCS-W1	97%
Chromium in TCLP	mg/L	0.01	Metals-020 ICP-AES	<0.01	83208-A-46	<0.01    <0.01	LCS-W1	100%
Copper in TCLP	mg/L	0.01	Metals-020 ICP-AES	<0.01	83208-A-46	0.03  0.03  RPD:0	LCS-W1	100%
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	83208-A-46	0.7  0.7  RPD:0	LCS-W1	96%
Mercury in TCLP	mg/L	0.0005	Metals-021 CV-AAS	<0.000 5	83208-A-46	<0.0005  <0.0005	LCS-W1	116%
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	83208-A-46	<0.02  <0.02	LCS-W1	99%
ZincinTCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	83208-A-46	0.9  0.9  RPD:0	LCS-W1	101%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	lemorial Hospital Duplicate results	Spike Sm#	Spike %
QUALITICONINOL	ONITS			Dial IK	Sm#	Duplicate results		Recovery
PAHsin TCLP (USEPA 1311)					-	Base II Duplicate II % RPD		
Date extracted	-			04/01/2 012	[NT]	[NT]	LCS-W2	04/01/2012
Date analysed	-			04/01/2 012	[NT]	[NT]	LCS-W2	04/01/2012
Naphthalene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	82%
Acenaphthylene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	82%
Phenanthrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	85%
Anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	83%
Pyrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	83%
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	82%
Benzo(b+k)fluoranthene in TCLP	mg/L	0.002	Org-012 subset	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W2	80%
Indeno(1,2,3-c,d)pyrene -TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl- d14	%		Org-012	66	[NT]	[NT]	LCS-W2	68%

42458, War Memorial Hospital

		Clie	nt Referenc	e: 42	2458, War Me	morial Hospital		
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals-ASLP Neutral (ICP-MS)						Base II Duplicate II % RPD		
Date extracted	-			07/01/2 013	83208-A-34	04/01/2013  04/01/2013	LCS-W1	07/01/2013
Date analysed	-			07/01/2 013	83208-A-34	04/01/2013  04/01/2013	LCS-W1	07/01/2013
Arsenic in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	1  1  RPD:0	LCS-W1	96%
Cadmium in ASLP	µg/L	0.1	Metals-022 ICP-MS	<0.1	83208-A-34	<0.1  <0.1	LCS-W1	98%
Chromium in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	<1  <1	LCS-W1	86%
Copper in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	4  3  RPD:29	LCS-W1	90%
Lead in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	11  8  RPD:32	LCS-W1	100%
Mercury in ASLP	µg/L	0.05	Metals-021 ASLP	<0.050	83208-A-34	<0.050  <0.050	LCS-W1	96%
Nickel in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	1    <1	LCS-W1	94%
Zinc in ASLP	µg/L	1	Metals-022 ICP-MS	<1	83208-A-34	120  110  RPD:9	LCS-W1	96%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate	Duplicate results	Spike Sm#	Spike %
PAHs in water leach					Sm#	Base II Duplicate II % RPD		Recovery
Date extracted	-			04/01/2 013	[NT]	[NT]	LCS-W2	04/01/2012
Date analysed	-			04/01/2 013	[NT]	[NT]	LCS-W2	04/01/2012
Naphthalene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	82%
Acenaphthylene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	82%
Phenanthrene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	85%
Anthracene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	83%
Pyrene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	83%
Benzo(a)anthracene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	82%
Benzo(b+k)fluoranthene in ASLP	mg/L	0.002	Org-012 ASLP	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	LCS-W2	80%

Envirolab Reference: 83208-A Revision No: R 00

		Clie	ent Reference	e: 42	2458, War Me	emorial Hospital				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery		
PAHs in water leach						Base II Duplicate II % RPD				
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]		
Dibenzo(a,h)anthracene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]		
Benzo(g,h,i)perylene in ASLP	mg/L	0.001	Org-012 ASLP	<0.001	[NT]	[NT]	[NR]	[NR]		
Surrogate p-Terphenyl- d14	%		Org-012	66	[NT]	[NT]	LCS-W2	68%		
QUALITY CONTROL Metals-ASLP Neutral (ICF MS)		5	Dup. Sm#	Base+1	Duplicate Duplicate + %RF	Spike Sm#	Spike % Reco	overy		
Date extracted	-		[NT]		[NT]	83208-A-37	07/01/201	3		
Date analysed	-		[NT]		[NT]	83208-A-37	07/01/201	3		
Arsenic in ASLP	µg/L		[NT]		[NT]	83208-A-37	98%			
Cadmium in ASLP	µg/L		[NT]		[NT]	83208-A-37	101%			
Chromium in ASLP	µg/L		[NT]		[NT]	83208-A-37	94%			
Copper in ASLP	µg/L		[NT]	[NT]		[NT]		[NT] 83208-A-37		
Lead in ASLP	µg/L		[NT]		[NT]	83208-A-37	110%			
Mercury in ASLP	µg/L		[NT]		[NT]	83208-A-37	108%			
Nickel in ASLP	µg/L		[NT]		[NT]	83208-A-37	96%			
Zinc in ASLP	μg/L		[NT]		[NT]	83208-A-37	97%			

#### **Report Comments:**

Asbestos ID was analysed by Approved Identifier: Asbestos ID was authorised by Approved Signatory: Not applicable for this job Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: N
NA: Test not required	RPD: Relative Percent Difference	NA: T
<: Less than	>: Greater than	LCS:

NT: Not tested NA: Test not required LCS: Laboratory Control Sample

#### **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.

#### 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 batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



# CHAIN OF CUSTODY

PROJECT NO.: 42458								BATCH									
PROJECT NAME: War Men								Hode			<b>Ch</b> 4 h <b>b</b> 4			h	- db 4 5		
SEND REPORT TO: C. Rot	perts, M. Hod	gins	SENO INVOICE TO: Grad	ce Ng				338 10	011		EMALL				s@jbsg		
	undorul t					LEVEL			NE NE	<u>P.M. 19</u>	99 ( X	<u>} </u>	Cris	nerts@	bsgrou	10.com	.au
COMMENTS / SPECIAL HANDI	:NG / STORAG	F OR DISPOSA			<b>V9 00</b> (0)	8 chebuls TOU DAEN		0( <u>10</u> )	<i>P</i> ( <i>b</i> ,	ANKAUS							
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105 Environmental Pov Ltd - ABN 67-071-842-638 Phone: (02) 8338-1011 Fax: (02) 8338-1700 :NSO Forms013 - Chava of Cvstody

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## CHAIN OF CUSTODY

PROJECT NO.: 42458						LABORATO	RY BAT	CH NO.							
PROJECT NAME: War Mem						SAMPLERS	і М. Нос	igins	- <b>-</b>						
SEND REPORT TO: C. ROL	erts, M. Hor	dg ns		SEND INVDICE TD: Grade	e Ng	PHONE: (	2 8338 :	1011		MAIL:	Ш	hodg	ins@j	bsgro	up.com.au
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# CHAIN OF CUSTODY

PROJECT NO.: 42458			LABORA	TORY	/ BATC	H NO.		•									
PROJECT NAME: War Memorial Hospital			SAMPLE														
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305 Envirormental Pty Ltd - ABN 67-071-842-636 Phone: (02) #338-1033 Fax: (02) #338-1700 128 O'Alordan 51, MASCOT #5W 2020 PC Box 940 MASCOT #5W 1460 #WW.jbsproup.rom.au

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# CHAIN OF CUSTODY

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IBS Environmental Pty Ltd - ARM 67-021-042-638 Phone: (02)-0338-1011 Pax: (02)-0338-1700 128 O'Riordan St, MASCOT NSW 2028 PO Box 940 MASCOT HSW 3460 HWW.Ibsoroup.csm.au

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34 HA11-0.2-0.3 37 HA12-0-0.1 f 36 HA12-0.2-0.3 ΞΞ Sig HA11-0-0.1 for ASLP and TCLP PAHs and SC HA11-0.2-0.3 for PAHs and 8 metals ц 1HA15-0.2-0.3 for 8 metals ã 46HA15-0-0.1 5 HA05-0.2-0.3 This 1460 Cathy confidential http://dropbox.yousendit.com/JBSENVIRONMENTAL Environmental's secure internet-based file delivery office January, Our Mascot office ą Please and Air Monitoring T: 02 8330 1011 [ F: 02 8338 1700 | M: 0401 530 177 www.jbsgroup.com.au Groundwater ] Contaminated Land | Planning and Approvals | Auditing and Compliance | Hazardous Materials HA05-0.0-0.1 HA03-0.2-0.3 HA03-0.0-0.1 Can Ξ, 5 Sent: From: If you would like \*\*\*\*\* 128 O'Riordan Cathy Thanks Standard Rhian Subject: Cc: Mitchell mailto:rmorgan@envirolab.com.zu | http://www.envirolab.com. -Great Chemistry.Great Service 12 Ashley Street Chatswood NSW 2067 Regards .... 612 9910 6200 Rhian, --Original Message-the Christmas Rhian Morgan н message is intended solely for the individual(s) and entity(s) addressed. Wednesday , Roberts Cathy Roberts [mailto:CRoberts@jbsgroup.com.au] Morgan get note: Our offices will be shut down from 22nd December 2012 until located at Level 1, 50 Margaret Street, Sydney, our east TAT RE for lead some additional for ASLP and for ASLP and ICLP 3 for 8 metals bue | Reporting Supervisor Results for is fine for PAHs ą ę Hodgins | Senior Environmental Scientist | JBS Environmental St Mascot NSW | Level 1, 50 Margaret St Sydney NSW | this although the PAH's will be out of holding time -1 Yeu ድ ጉ 2 January e) Se PAHs will 612 đ coast operations will be operating soley and New Year break. contain send me large electronic files ŝ PAHS 9910 6201 and TCLP PAHs close permanently on 22nd ICLP registration analyses done 2013 legally æ ¢ metals metals 69:36 .... privileged œ 83208 Envirolab please? metals . 42458, War Memorial Hospital' information н Services December need: s (>10MB), p⊥\_\_\_ Stem located 2000 ę Envirolab Ref: 83208A 2 from our and when we re-open on 2nd please r Ż Pty 8 er T ese new and DUR : 9/11/3 Box r tđ Sac 2nd January 948 Mascot NSW sia tia larger City H 5 2013

Yes

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Great -12 mailto:rmorgan@envirolab.com.au Б С С С rmorgan@envirolab.com.au | www.envirolab.com.au Rhian Morgan | Reporting Supervisor -12 Ashley Street Chatswood Great Chemistry.Great Service Rhian Morgan | Reporting Supervisor | 5 ç ΤĘQ Ψ 2 Regards, Regards, www.envirolabservices.com.au ph 02 9910 6200 fax 02 9910 6201 Envirolab Jacinta Hurst on jhurst@envirolabservices.com.au or khian Morgan on rmorgan@envirolabservices.com.au or David Springer on dspringer@envirolabservices.com.au Please http://www.envirolabservices.com.au/downloads/@ditor/nepm-and-b-a-p-reporting.pdf 3 Ψ Please Sent: Friday, 21 December 2012 11:44 AM <del>To: Cathy Roberts; Mitchell Hodgins; Rec</del> Subject: Results for registration '8320B not confirmed by fax, letter or report Please note that Regards Tania Notaras on trotaras@envirolabservices.com.au Enquiries should be made directly From: Rhian Morgan [mailto:RMorgan@envirolab.com.au] copy of the copy of the 612 9910 6200 F ----Original Message----612 9910 6200 F Ashley excel file Ashley new info on: NEPM TRH Fractions (Fi & Chemistry.Great note that a hard copy will not be posted refer to attached for: Street St Chatswood NSW 2067 Services 8 containing the Centificate of Invoice Chatswood NSW 2067 DBS Environmental Pty Ltd does 612 9910 612 9910 6201 Service MSN 6291 results Analysis 2067 | http://www.envirolab.com. ğ | Envirolab Services Pty Reception Envirolab Services Pty Ltd F2), Naphthalene 42458, War Memorial Hospital' not make any commitments reporting Ľ fd and Benzo(a)Pyrene through emails

Aileen Hie	
From: Sent:	Rhian Morgan Wednesday, 2 January 2013 9:43 AM
To: Subject:	Aileen Hie FW: Results for registration '83208 - 42458, War Memorial Hospital'
Regards,	
Rhian Morgan   Repo	Reporting Supervisor   Envirolab Services Pty Ltd
Great Chemistry.Great	at Service
12 Ashley Street Chatswood NSW 2 F 612 9910 6200 F 612 9910 6201 mailto:rmorgan@envirolab.com.au	Chatswood NSW 2067 - 612 9910 6201 rvirolab.com.au   http://www.envirolab.com.au
Original Message From: Cathy Roberts [mai Sent: Wednesday, 2 Janua To: Rhian Morgan Cc: Mitchell Hodgins Subject: RE: Results for	ssage rts [mailto:CRoberts@jbsg~oup.com.au] 2 January 2013 09:43 gins ults for registration `83208 - 42458, War Memorial Hospital`
Yeah that's fine, t	ť
Cathy Roberts   Seni- 128 O'Riordan St Mas- 1460 T: 02 8338 1011   F: Contaminated Land   F And Air Monitoring	Cathy Roberts   Senior Environmental Scientist   JBS Environmental Pty Ltd 128 O'Riordan St Mascot NSW   Level 1, 50 Margaret St Sydney NSW   PO Box 940 Mascot VSW 1460 1: 02 8338 1011   F: 02 8338 1700   M: 0401 530 177 www.jbsgroup.com.au Groundwater   Contaminated Land   Planning and Approvals   Auditing and Compliance   Hazardous Materials and Air Monitoring
Please note: Our of for the Christmas a Our Mascot office w January, our east c office located at (	Our offices will be shut down from 22nd December 2012 until 2nd January 2013 stmas and New Year break. Ffice will close permanently on 22nd December and when we re-open on 2nd east coast operations will be operating soley from our new and larger City ed at Level 1, 50 Margaret Street, Sydney, 2000
If you would like to Environmental's secur http://dropbox.yousen This message is inten confidential and may Please note that JBS not confirmed by fax,	If you would like to send me large electronic files (>10MB), please use JBS Environmental's secure internet-based file delivery system located at Environmental's secure internet-based file delivery system located at This message is intended solely for the individual(s) and entity(s) addressed. It is confidential and may contain legally privileged information. Please note that JBS Environmental Pty Ltd does not rake any commitments through emails not confirmed by fax, letter or report.
Original Message- from: Rhian Morgan (ma Sent: Wednesday, 2 Jan To: Cathy Roberts Cc: Mitchell Hodgins Subject: RE: Results f	ge [mailto:RMorgan@envirolab.com.au] January 2013 9:41 AM s s for registration '83208 - 42458, War Memorial Hospital'
Hi Cathy,	

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Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 enquiries@envirolabservices.com.au www.envirolabservices.com.au

## SAMPLE RECEIPT ADVICE

Client: JBS Environmental Pty Ltd P.O. Box 940 MASCOT NSW 1460

ph: 8338 1013 Fax: 8338 1700

Attention: C Roberts M Hodgins

Sample log in details:	
Your reference:	42458, War Memorial Hospital
Envirolab Reference:	83208
Date received:	14/12/2012
Date results expected to be reported:	21/12/12

Samples received in appropriate condition for analysis:	YES
No. of samples provided	66 Soils, 1 Material, 2 Waters
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice
Sampling Date Provided:	YES

#### Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Contact details: Please direct any queries to Aileen Hie or Jacinta Hurst ph: 02 9910 6200 fax: 02 9910 6201 email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Page 1 of 1


Envirolab Services Pty Ltd ABN 37 112 535 645 12 Ashley St Chatswood NSW 2067 ph 02 9910 6200 fax 02 9910 6201 enquiries@envirolabservices.com.au www.envirolabservices.com.au

# SAMPLE RECEIPT ADVICE

Client: JBS Environmental Pty Ltd P.O. Box 940 MASCOT NSW 1460

ph: 8338 1013 Fax: 8338 1700

Attention: C Roberts M Hodgins

### Sample log in details: Your reference: Envirolab Reference:

Date results expected to be reported:

## **42458, War Memorial Hospital 83208-A** 14/12/2012 **9/01/13**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	Additional Testing on 10 Soils
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice
Sampling Date Provided:	YES

## Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Sample 10-Soil and Material in seperate bags

## Contact details: Please direct any queries to Aileen Hie or Jacinta Hurst ph: 02 9910 6200 fax: 02 9910 6201 email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au





**Environmental Division** 

	CER	<b>TIFICATE OF ANALYSIS</b>	
Work Order	ES1229744	Page	: 1 of 7
Client	: JBS ENVIRONMENTAL	Laboratory	: Environmental Division Sydney
Contact	: CATHY ROBERTS	Contact	: Client Services
Address	: LEVEL 1, 50 MARGARET STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: croberts@jbsgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8338 1011	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8338 1700	Facsimile	: +61-2-8784 8500
Project	: 42458 WAR MEMORIAL HOSPITAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	:		
C-O-C number	:	Date Samples Received	: 17-DEC-2012
Sampler	: M.HODGINS	Issue Date	: 27-DEC-2012
Site	:		
		No. of samples received	: 4
Quote number	: SY/291/12	No. of samples analysed	: 2

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

This Certificate of Analysis contains the following information:

Accredited for compliance with

ISO/IEC 17025.

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits



NATA Accredited Laboratory 825 Signatories

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

Signatories	Position	Accreditation Category	
Edwandy Fadjar	Organic Coordinator	Sydney Organics	
Evie.Sidarta	Inorganic Chemist	Sydney Inorganics	
Peter Rennie	Team Leader - Asbestos	Newcastle	
Raymond Commodor	Instrument Chemist	Sydney Inorganics	
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics	

Address 277-289 Woodpark Road Smithfield NSW Australia 2164 PHONE +61-2-8784 8555 Facsimile +61-2-8784 8500 Environmental Division Sydney ABN 84 009 936 029 Part of the ALS Group An ALS Limited Company



www.alsglobal.com



### **General Comments**

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

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

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

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

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

Key: CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society. LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- EA200 Legend for Asbestos Type:
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Ch' Chrysotile (white asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 't' Trace levels
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.



Sub-Matrix: SOIL (Matrix: SOIL)		Clie	ent sample ID	QC01a	QC02a	 	
	Cli	ient sampli	ng date / time	12-DEC-2012 15:00	13-DEC-2012 15:00	 	
Compound	CAS Number	LOR	Unit	ES1229744-001	ES1229744-002	 	
EA055: Moisture Content							
Moisture Content (dried @ 103°C)		1.0	%	13.2	13.5	 	
EA200: AS 4964 - 2004 Identification of A	sbestos in bulk	samples					
Asbestos Detected	1332-21-4	0.1	g/kg	No		 	
Asbestos Type	1332-21-4	0.1		-		 	
Sample weight (dry)		0.01	g	38.6		 	
APPROVED IDENTIFIER:		-		P.RENNIE		 	
EG005T: Total Metals by ICP-AES							
Arsenic	7440-38-2	5	mg/kg	<5	<5	 	
Cadmium	7440-43-9	1	mg/kg	<1	<1	 	
Chromium	7440-47-3	2	mg/kg	6	6	 	
Copper	7440-50-8	5	mg/kg	42	21	 	
Lead	7439-92-1	5	mg/kg	187	218	 	
Nickel	7440-02-0	2	mg/kg	5	2	 	
Zinc	7440-66-6	5	mg/kg	179	165	 	
EG035T: Total Recoverable Mercury by I	FIMS						
Mercury	7439-97-6	0.1	mg/kg	0.3	0.3	 	
EP066: Polychlorinated Biphenyls (PCB)							
Total Polychlorinated biphenyls		0.1	mg/kg	<0.1		 	
EP068A: Organochlorine Pesticides (OC)	)						
alpha-BHC	319-84-6	0.05	mg/kg	<0.05		 	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05		 	
beta-BHC	319-85-7	0.05	mg/kg	<0.05		 	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05		 	
delta-BHC	319-86-8	0.05	mg/kg	<0.05		 	
Heptachlor	76-44-8	0.05	mg/kg	<0.05		 	
Aldrin	309-00-2	0.05	mg/kg	<0.05		 	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05		 	
<sup>^</sup> Total Chlordane (sum)		0.05	mg/kg	<0.05		 	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05		 	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05		 	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05		 	
Dieldrin	60-57-1	0.05	mg/kg	<0.05		 	
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05		 	



Sub-Matrix: SOIL (Matrix: SOIL)		Clie	ent sample ID	QC01a	QC02a	 	
	Cl	ient sampliı	ng date / time	12-DEC-2012 15:00	13-DEC-2012 15:00	 	
Compound	CAS Number	LOR	Unit	ES1229744-001	ES1229744-002	 	
EP068A: Organochlorine Pesticides	s (OC) - Continued						
Endrin	72-20-8	0.05	mg/kg	<0.05		 	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05		 	
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05		 	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05		 	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05		 	
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2		 	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05		 	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2		 	
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05		 	
<sup>^</sup> Sum of DDD + DDE + DDT		0.05	mg/kg	<0.05		 	
EP068B: Organophosphorus Pestic	ides (OP)						
Dichlorvos	62-73-7	0.05	mg/kg	<0.05		 	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05		 	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2		 	
Dimethoate	60-51-5	0.05	mg/kg	<0.05		 	
Diazinon	333-41-5	0.05	mg/kg	<0.05		 	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05		 	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2		 	
Malathion	121-75-5	0.05	mg/kg	<0.05		 	
Fenthion	55-38-9	0.05	mg/kg	<0.05		 	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05		 	
Parathion	56-38-2	0.2	mg/kg	<0.2		 	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05		 	
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05		 	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05		 	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05		 	
Ethion	563-12-2	0.05	mg/kg	<0.05		 	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05		 	
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05		 	
EP075(SIM)B: Polynuclear Aromatic	: Hydrocarbons						
Naphthalene	91-20-3	0.5	mg/kg	<0.5		 	
Acenaphthylene	208-96-8	0.5	mg/kg	1.0		 	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5		 	



Client saming date / time         12-DEC-2012 15:00         13-DEC-2012 15:00            I           Comound         CAS Number         LOR         Unit         ES1229744-001         ES1229744-002            I           EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Contract         Unit         ES1229744-001         ES1229744-002            I          I         I          I	
Control of the second	
Florene         86-73-7         0.5         mg/kg         <0.5	
Phenanthrene         85-01-8         0.5         mg/kg         5.3           Image in the image in the	
Anthracene         120-12-7         0.5         mg/kg         1.9             Image: Construction of the second of the s	
Fluorantiene         206-44-0         0.5         mg/kg         11.0               Pyrene         129-00-0         0.5         mg/kg         11.0                Image: Signar Signa	
Pyrene         129.00.0         0.5         mg/kg         11.0            Image: Section in the sect	
Benz(a)anthracene         56-55-3         0.5         mg/kg         5.3            Image: Constraint of the second s	
Chrysene         218-01-9         0.5         mg/kg         5.0             Image: Second Se	
Benzo(b)fluoranthene         205-99-2         0.5         mg/kg         5.7            Image: Constraint of the second seco	
Benzo(k)fluoranthene         207-00-2         0.5         mg/kg         2.1            Image: Constraint of the state of	
Benzo(a)pyrene         50-32-8         0.5         mg/kg         4.8            Image to the state of the st	
Indeno(1.2.3.cd)pyrene         193-39-5         0.5         mg/kg         2.3              Image: constraint of the state of the st	
Dibenz(a.h)anthracene         53-70-3         0.5         mg/kg         0.5             Image: Constraint of the state of the	
Benzo(g.h.i)perylene         191-24-2         0.5         mg/kg         2.8   -	
Sum of polycyclic aromatic hydrocarbons         0.5         mg/kg         58.7             Image: Second Sec	
Benzo(a)pyrene TEQ (WHO)         0.5         mg/kg         6.9                Image: Second Secon	
EP080/071: Total Petroleum Hydrocarbons         10         mg/kg         <10	
C6 - C9 Fraction         10         mg/kg         <10	
C10 - C14 Fraction         50         mg/kg         <50	
C10         C11         C12         C28         Fraction          100         mg/kg         180 <t< th=""><th></th></t<>	
C29 - C36 Fraction         100         mg/kg         120 <th></th>	
C10 - C36 Fraction (sum)         50         mg/kg         300 <th< th=""><th></th></th<>	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft </th <th></th>	
C6 - C10 Fraction         10         mg/kg         <10	
* C6 - C10 Fraction minus BTEX (F1) 10 mg/kg <10	
>C10 - C16 Fraction 50 mg/kg <50	
>C16 - C34 Fraction 100 mg/kg 260	
>C34 - C40 Fraction 100 mg/kg <100	
>C10 - C40 Fraction (sum)         50         mg/kg         260	
EP080: BTEX	
Benzene 71-43-2 0.2 mg/kg <0.2	
Toluene         108-88-3         0.5         mg/kg         <0.5	
Ethylbenzene         100-41-4         0.5         mg/kg         <0.5	
meta- & para-Xylene 108-38-3 106-42-3 0.5 mg/kg <0.5	



Sub-Matrix: SOIL (Matrix: SOIL)		Cli	ent sample ID	QC01a	QC02a	 	
	Cli	ient sampli	ing date / time	12-DEC-2012 15:00	13-DEC-2012 15:00	 	
Compound	CAS Number	LOR	Unit	ES1229744-001	ES1229744-002	 	
EP080: BTEX - Continued							
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5		 	
EP080: BTEXN							
^ Sum of BTEX		0.2	mg/kg	<0.2		 	
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5		 	
Naphthalene	91-20-3	1	mg/kg	<1		 	
EP066S: PCB Surrogate							
Decachlorobiphenyl	2051-24-3	0.1	%	82.4		 	
EP068S: Organochlorine Pesticide S	urrogate						
Dibromo-DDE	21655-73-2	0.1	%	113		 	
EP068T: Organophosphorus Pesticio	de Surrogate						
DEF	78-48-8	0.1	%	72.6		 	
EP075(SIM)S: Phenolic Compound S	urrogates						
Phenol-d6	13127-88-3	0.1	%	106		 	
2-Chlorophenol-D4	93951-73-6	0.1	%	105		 	
2.4.6-Tribromophenol	118-79-6	0.1	%	102		 	
EP075(SIM)T: PAH Surrogates							
2-Fluorobiphenyl	321-60-8	0.1	%	106		 	
Anthracene-d10	1719-06-8	0.1	%	100		 	
4-Terphenyl-d14	1718-51-0	0.1	%	110		 	
EP080S: TPH(V)/BTEX Surrogates							
1.2-Dichloroethane-D4	17060-07-0	0.1	%	92.5		 	
Toluene-D8	2037-26-5	0.1	%	89.6		 	
4-Bromofluorobenzene	460-00-4	0.1	%	88.5		 	
Analytical Paculta							

## Analytical Results

### **Descriptive Results**

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time Analytical Results						
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
EA200: Description	QC01a - 12-DEC-2012 15:00	Pale brown sandy soil plus a trace of vegetation					



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery	Limits (%)
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29.4	145
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	145
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	32	142
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	127
2-Chlorophenol-D4	93951-73-6	64	126
2.4.6-Tribromophenol	118-79-6	36	136
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	64	130
Anthracene-d10	1719-06-8	69	135
4-Terphenyl-d14	1718-51-0	64	136
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0





**Environmental Division** 

# **QUALITY CONTROL REPORT**

Work Order	: ES1229744	Page	: 1 of 12
Client		Laboratory	: Environmental Division Sydney
Contact	: CATHY ROBERTS	Contact	: Client Services
Address	ELEVEL 1, 50 MARGARET STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: croberts@jbsgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8338 1011	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8338 1700	Facsimile	: +61-2-8784 8500
Project	: 42458 WAR MEMORIAL HOSPITAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	:		
C-O-C number	:	Date Samples Received	: 17-DEC-2012
Sampler	: M.HODGINS	Issue Date	: 27-DEC-2012
Order number	:		
		No. of samples received	: 4
Quote number	: SY/291/12	No. of samples analysed	: 2

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

This Quality Control Report contains the following information:

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

Accredited for compliance with ISO/IEC 17025.



## NATA Accredited Laboratory 825

## Signatories

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

Signatories	Position	Accreditation Category
Edwandy Fadjar	Organic Coordinator	Sydney Organics
Evie.Sidarta	Inorganic Chemist	Sydney Inorganics
Peter Rennie	Team Leader - Asbestos	Newcastle
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics

Address 277-289 Woodpark Road Smithfield NSW Australia 2164 | PHONE +61-2-8784 8555 | Facsimile +61-2-8784 8500 Environmental Division Sydney ABN 84 009 936 029 Part of the ALS Group An ALS Limited Company



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### **General Comments**

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

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

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

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

 Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot

 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

 LOR = Limit of reporting

 RPD = Relative Percentage Difference

# = Indicates failed QC



## Laboratory Duplicate (DUP) Report

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

ub-Matrix: SOIL						Laboratory	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%
A055: Moisture Co	ontent (QC Lot: 2652632	2)							
S1229428-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)		1.0	%	4.9	5.5	11.7	No Limit
G005T: Total Metal	Is by ICP-AES (QC Lot:	2652524)							
S1229744-001	QC01a	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	8	28.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	42	38	7.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	187	203	8.5	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	179	191	6.3	0% - 20%
G035T: T <u>otal Reco</u>	overable Mercury by FIN	IS (QC Lot: 2652525)							
S1229744-001	QC01a	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.3	0.3	0.0	No Limit
P066: Polvchlorina	ated Biphenyls (PCB)(C								
S1229450-011	Anonymous	EP066: Total Polychlorinated biphenyls		0.1	mg/kg	<0.1	<0.1	0.0	No Limit
S1229450-013	Anonymous	EP066: Total Polychlorinated biphenyls		0.1	mg/kg	<0.1	<0.1	0.0	No Limit
	-			0.1			0.1	0.0	
EP068A: Organochlorine Pesticides (OC) (QC I ES1229450-011 Anonymous		319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
31229430-011	Anonymous	EP068: alpha-BHC	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB) EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
			60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit	
		EP068: 4.4`-DDD EP068: Endrin aldehyde	72-34-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
						<0.2	<0.03		No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Lin

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Sub-Matrix: SOIL			[			Laboratory	Duplicate (DUP) Report	•	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochic	orine Pesticides (OC) (QC	C Lot: 2656103) - continued							
ES1229450-011	Anonymous	EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organopho	sphorus Pesticides (OP)	(QC Lot: 2656103)							
ES1229450-011	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	< 0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polyni	clear Aromatic Hydroca	rbons (QC Lot: 2657297)							
ES1229684-003	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons		0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (WHO)		0.5	mg/kg	<0.5	<0.5	0.0	No Limit

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ub-Matrix: SOIL						Laboratory	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polyn	nuclear Aromatic Hydro	ocarbons (QC Lot: 2657297) - continued							
ES1229737-002	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic		0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		hydrocarbons							
		EP075(SIM): Benzo(a)pyrene TEQ (WHO)		0.5	mg/kg	<0.5	<0.5	0.0	No Limit
P080/071: Total Pe	etroleum Hydrocarbons	G (QC Lot: 2654200)							
ES1229642-001	Anonymous	EP080: C6 - C9 Fraction		10	mg/kg	<10	<10	0.0	No Limit
ES1229642-011	Anonymous	EP080: C6 - C9 Fraction		10	mg/kg	<10	<10	0.0	No Limit
P080/071: Total Pe	troleum Hydrocarbons	(QC Lot: 2657296)							
ES1229684-003	Anonymous	EP071: C15 - C28 Fraction		100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction		100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction		50	mg/kg	<50	<50	0.0	No Limit
ES1229737-002	Anonymous	EP071: C15 - C28 Fraction		100	mg/kg	<100	<100	0.0	No Limit
	,	EP071: C29 - C36 Fraction		100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction		50	mg/kg	<50	<50	0.0	No Limit
P080/071: Total Re	coverable Hydrocarbo	ns - NEPM 2010 Draft (QC Lot: 2654200)							
ES1229642-001	Anonymous	EP080: C6 - C10 Fraction		10	mg/kg	<10	<10	0.0	No Limit
ES1229642-011	Anonymous	EP080: C6 - C10 Fraction		10	mg/kg	<10	<10	0.0	No Limit
	-			10	ilig/kg	10	10	0.0	
		ns - NEPM 2010 Draft (QC Lot: 2657296)		100			-100	0.0	Nie 1 teett
ES1229684-003	Anonymous	EP071: >C16 - C34 Fraction		100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction		100	mg/kg	<100	<100	0.0	No Limit
	A	EP071: >C10 - C16 Fraction		50	mg/kg	<50	<50	0.0	No Limit
ES1229737-002	Anonymous	EP071: >C16 - C34 Fraction		100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction		100 50	mg/kg	<100 <50	<100 <50	0.0	No Limit No Limit
		EP071: >C10 - C16 Fraction			mg/kg	<50	<60	0.0	

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Client	: JBS ENVIRONMENTAL
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Sub-Matrix: SOIL						Laboratory I	Duplicate (DUP) Report		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC	Lot: 2654200) - continued								
ES1229642-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1229642-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit



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

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

Sub-Matrix: SOIL				Method Blank (MB)		Laboratory Control Spike (LCS) Report			
			Report	Spike	Spike Recovery (%)	Recovery	Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	Higl	
G005T: Total Metals by ICP-AES (QCLot: 2652	2524)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	84	128	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.4	79	119	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	98.9	70	130	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	105	83	127	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	97.8	81	117	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	103	79	127	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	114	78	130	
EG035T: Total Recoverable Mercury by FIMS(	QCLot: 2652525)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.3	72	114	
EP066: Polychlorinated Biphenyls (PCB) (QCL	ot: 2656104)								
EP066: Total Polychlorinated biphenyls		0.1	mg/kg	<0.1	1 mg/kg	75.0	57.4	117	
EP068A: Organochlorine Pesticides (OC) (QCL	ot: 2656103)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	60.8	116	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	59.4	115	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	59.8	117	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	59.8	118	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	65.8	114	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	65.6	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	67	113	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	65.6	113	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	60.7	113	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	65.8	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	57.3	120	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	67.4	116	
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	67.5	114	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	63	121	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	66.1	117	
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.3	116	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	107	57.3	115	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	110	63.6	119	
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	98.2	58.4	127	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.3	63.6	117	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	107	50.4	132	

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Sub-Matrix: SOIL				Method Blank (MB)		Laboratory Control Spike (LC	S) Report	
	i			Report	Spike	Spike Recovery (%)	Recovery	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot:	2656103) - continued	k						
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	75.9	25.5	124
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	10.1	159
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	78.2	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	105	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	88.6	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	64.8	111
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.9	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.5	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	102	29.8	137
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (C	OCLot: 2657297)							
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	104	81.9	113
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	101	79.6	113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	102	81.5	112
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	102	79.9	112
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	105	79.4	114
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	106	81.1	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	104	78.8	113
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	106	78.9	113
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	101	77.2	112
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	106	79.8	114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	99.9	71.8	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	107	74.2	117
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	99.5	76.4	113
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	98.0	71	113
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	96.9	71.7	113
P075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	96.8	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2	654200)							
EP080/071. Total Petroleum Hydrocarbons (QCLOL 2)		10	mg/kg	<10	26 mg/kg	105	68.4	128
								120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2)	657296) 	50	ma/ka	<50	200 mg/kg	103	59	131
EP071: C10 - C14 Fraction		50	mg/kg	<u>\0</u>	200 mg/kg	103	09	131

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Sub-Matrix: SOIL				Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike	Spike Recovery (%)	Recovery	Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High	
EP080/071: Total Petroleum Hydrocarbons	(QCLot: 2657296) - continued								
EP071: C15 - C28 Fraction		100	mg/kg	<100	300 mg/kg	105	74	138	
EP071: C29 - C36 Fraction		100	mg/kg	<100	200 mg/kg	96.9	63	131	
EP080/071: Total Recoverable Hydrocarbon	s - NEPM 2010 Draft (QCLot: 2	2654200)							
EP080: C6 - C10 Fraction		10	mg/kg	<10	31 mg/kg	108	68.4	128	
EP080/071: Total Recoverable Hydrocarbon	s - NEPM 2010 Draft (QCLot: 2	2657296)							
EP071: >C10 - C16 Fraction		50	mg/kg	<50	250 mg/kg	106	59	131	
EP071: >C16 - C34 Fraction		100	mg/kg	<100	350 mg/kg	101	74	138	
EP071: >C34 - C40 Fraction		100	mg/kg	<100					
		50	mg/kg		150 mg/kg	89.6	63	131	
EP080: BTEXN (QCLot: 2654200)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.2	62	120	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	78.0	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	80.4	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	77.5	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	83.4	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	64.8	62	138	

## Matrix Spike (MS) Report

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

Sub-Matrix: SOIL				Ма	atrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery L	imits (%)
aboratory sample ID.	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
G005T: Total Met	als by ICP-AES (QCLot: 2652524)						
ES1229744-001	QC01a	EG005T: Arsenic	7440-38-2	50 mg/kg	101	70	130
	EG005T: Cadmium	7440-43-9	50 mg/kg	96.6	70	130	
		EG005T: Chromium	7440-47-3	50 mg/kg	99.5	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	98.1	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.9	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.8	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.1	70	130
G035T: Total Red	coverable Mercury by FIMS (QCLot: 2652525)						
ES1229744-001	QC01a	EG035T: Mercury	7439-97-6	5 mg/kg	98.9	70	130
P066: Polychlorir	ated Biphenyls (PCB) (QCLot: 2656104)						
ES1229450-011	Anonymous	EP066: Total Polychlorinated biphenyls		1 mg/kg	95.0	70	130
P068A: Organoch	lorine Pesticides (OC) (QCLot: 2656103)						



ib-Matrix: SOIL				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery	Limits (%)	
aboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
P068A: Organoc	hlorine Pesticides (OC) (QCLot: 2656103) - c	ontinued						
ES1229450-011	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	98.2	70	130	
		EP068: Heptachlor	76-44-8	0.5 mg/kg	105	70	130	
		EP068: Aldrin	309-00-2	0.5 mg/kg	97.4	70	130	
		EP068: Dieldrin	60-57-1	0.5 mg/kg	90.6	70	130	
		EP068: Endrin	72-20-8	2 mg/kg	86.1	70	130	
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	87.8	70	130	
EP068B: Organop	hosphorus Pesticides (OP) (QCLot: 2656103)							
ES1229450-011	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	105	70	130	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	101	70	130	
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	88.8	70	130	
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.2	70	130	
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.4	70	130	
EP075(SIM)B: Pol	ynuclear Aromatic Hydrocarbons (QCLot: 26	57297)						
ES1229684-003 Anonymous		EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.9	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.2	70	130	
EP080/071: Total I	Petroleum Hydrocarbons (QCLot: 2654200)							
ES1229642-001	Anonymous	EP080: C6 - C9 Fraction		32.5 mg/kg	106	70	130	
EP080/071: Total I	Petroleum Hydrocarbons (QCLot: 2657296)							
ES1229684-003	Anonymous	EP071: C10 - C14 Fraction		640 mg/kg	99.9	73	137	
		EP071: C15 - C28 Fraction		3140 mg/kg	121	53	131	
		EP071: C29 - C36 Fraction		2860 mg/kg	92.1	52	132	
EP080/071: Total I	Recoverable Hydrocarbons - NEPM 2010 Draf	(QCLot: 2654200)						
ES1229642-001	Anonymous	EP080: C6 - C10 Fraction		37.5 mg/kg	108	70	130	
EP080/071: Total I	Recoverable Hydrocarbons - NEPM 2010 Draf	(QCLot: 2657296)						
ES1229684-003	Anonymous	EP071: >C10 - C16 Fraction		850 mg/kg	132	73	137	
		EP071: >C16 - C34 Fraction		4800 mg/kg	110	53	131	
		EP071: >C34 - C40 Fraction		2400 mg/kg	56.2	52	132	
EP080: BTEXN (C	QCLot: 2654200)							
ES1229642-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	89.1	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	83.1	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.3	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	82.5	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.4	70	130	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.2	70	130	

## Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

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

Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report           Spike         Spike Recovery (%)         Recovery Limits (%)         RPDs (%)							
					Spike Re	covery (%)	Recovery Limits (%)		RP	PDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limi		
EG005T: Total Met	als by ICP-AES (QCLot: 265	2524)										
ES1229744-001	QC01a	EG005T: Arsenic	7440-38-2	50 mg/kg	101		70	130				
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.6		70	130				
		EG005T: Chromium	7440-47-3	50 mg/kg	99.5		70	130				
		EG005T: Copper	7440-50-8	250 mg/kg	98.1		70	130				
		EG005T: Lead	7439-92-1	250 mg/kg	98.9		70	130				
		EG005T: Nickel	7440-02-0	50 mg/kg	97.8		70	130				
		EG005T: Zinc	7440-66-6	250 mg/kg	91.1		70	130				
EG035T: Total Red	coverable Mercury by FIMS	(QCLot: 2652525)						· · · ·				
ES1229744-001	QC01a	EG035T: Mercury	7439-97-6	5 mg/kg	98.9		70	130				
EP080/071: Total P	etroleum Hydrocarbons (Q0											
ES1229642-001	Anonymous	EP080: C6 - C9 Fraction		32.5 mg/kg	106		70	130				
	-			62.0 mg/kg	100		10	100				
		NEPM 2010 Draft (QCLot: 2654200)		07.5 "	100		=0	400				
ES1229642-001	Anonymous	EP080: C6 - C10 Fraction		37.5 mg/kg	108		70	130				
EP080: BTEXN (Q	CLot: 2654200)											
ES1229642-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	89.1		70	130				
		EP080: Toluene	108-88-3	2.5 mg/kg	83.1		70	130				
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.3		70	130				
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	82.5		70	130				
			106-42-3									
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.4		70	130				
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.2		70	130				
EP068A: Organoch	lorine Pesticides (OC) (QCI	Lot: 2656103)										
ES1229450-011	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	98.2		70	130				
		EP068: Heptachlor	76-44-8	0.5 mg/kg	105		70	130				
		EP068: Aldrin	309-00-2	0.5 mg/kg	97.4		70	130				
		EP068: Dieldrin	60-57-1	0.5 mg/kg	90.6		70	130				
		EP068: Endrin	72-20-8	2 mg/kg	86.1		70	130				
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	87.8		70	130				
EP068B: Organoph	osphorus Pesticides (OP)(	(QCLot: 2656103)										
ES1229450-011	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	105		70	130				
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	101		70	130				
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	88.8		70	130				
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.2		70	130				
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.4		70	130				
EP066: Polychlorir	nated Biphenyls (PCB) (QCL											
ES1229450-011	Anonymous			1 mg/kg	95.0		70	130				
L01223400-011	Anonymous	EP066: Total Polychlorinated biphenyls		i iliy/ky	90.0		10	130				

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Sub-Matrix: SOIL			Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
				Spike	Spike Re	covery (%)	Recovery	Limits (%)	RPL	Ds (%)
Laboratory sample ID	Client sample ID	Method: Compound	Method: Compound CAS Number			MSD	Low	High	Value	Control Limit
EP080/071: Total F	Petroleum Hydrocarbons (QCLot: 26	57296)								
ES1229684-003	Anonymous	EP071: C10 - C14 Fraction		640 mg/kg	99.9		73	137		
		EP071: C15 - C28 Fraction		3140 mg/kg	121		53	131		
	EP071: C29 - C36 Fraction		2860 mg/kg	92.1		52	132			
EP080/071: Total F	Recoverable Hydrocarbons - NEPM 2	010 Draft (QCLot: 2657296)								
ES1229684-003	Anonymous	EP071: >C10 - C16 Fraction		850 mg/kg	132		73	137		
		EP071: >C16 - C34 Fraction		4800 mg/kg	110		53	131		
		EP071: >C34 - C40 Fraction		2400 mg/kg	56.2		52	132		
EP075(SIM)B: Poly	ynuclear Aromatic Hydrocarbons (Q	CLot: 2657297)								
ES1229684-003	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.9		70	130		
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.2		70	130		





**Environmental Division** 

# **INTERPRETIVE QUALITY CONTROL REPORT**

Work Order	: ES1229744	Page	: 1 of 6
Client	: JBS ENVIRONMENTAL	Laboratory	: Environmental Division Sydney
Contact	: CATHY ROBERTS	Contact	Client Services
Address	ELEVEL 1, 50 MARGARET STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: croberts@jbsgroup.com.au	E-mail	: sydney@alsglobal.com
Telephone	+61 02 8338 1011	Telephone	+61-2-8784 8555
Facsimile	: +61 02 8338 1700	Facsimile	: +61-2-8784 8500
Project	: 42458 WAR MEMORIAL HOSPITAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	:		
C-O-C number	:	Date Samples Received	: 17-DEC-2012
Sampler	: M.HODGINS	Issue Date	: 27-DEC-2012
Order number	:		
		No. of samples received	: 4
Quote number	: SY/291/12	No. of samples analysed	: 2

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

This Interpretive Quality Control Report contains the following information:

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

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## Analysis Holding Time Compliance

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

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

Matrix: SOIL				Evaluation	× = Holding time	breach ; ✓ = Withir	holding time.
Method	Sample Date	Extraction / Preparation					
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
QC01a	12-DEC-2012				17-DEC-2012	26-DEC-2012	✓
Soil Glass Jar - Unpreserved (EA055-103)	40.050.0040				47 850 0040		
QC02a	13-DEC-2012				17-DEC-2012	27-DEC-2012	✓
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag (EA200)	12-DEC-2012		10-JUN-2013		21-DEC-2012	19-JUN-2013	
QC01a	12-DEC-2012		10-JUN-2013		21-DEC-2012	19-JUN-2013	✓
EG005T: Total Metals by ICP-AES		I					
Soil Glass Jar - Unpreserved (EG005T)	12-DEC-2012	17-DEC-2012	10-JUN-2013		18-DEC-2012	10-JUN-2013	
	12-DEC-2012	17-DEC-2012	10-JUN-2013	1	18-DEC-2012	10-JUN-2013	✓
Soil Glass Jar - Unpreserved (EG005T) QC02a	13-DEC-2012	17-DEC-2012	11-JUN-2013	1	18-DEC-2012	11-JUN-2013	1
	10 220 2012			•			
EG035T: Total Recoverable Mercury by FIMS Soil Glass Jar - Unpreserved (EG035T)	1						
QC01a	12-DEC-2012	17-DEC-2012	09-JAN-2013	1	18-DEC-2012	09-JAN-2013	1
Soil Glass Jar - Unpreserved (EG035T)				_			· · · · ·
QC02a	13-DEC-2012	17-DEC-2012	10-JAN-2013	1	18-DEC-2012	10-JAN-2013	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
QC01a	12-DEC-2012	19-DEC-2012	26-DEC-2012	✓	20-DEC-2012	28-JAN-2013	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
QC01a	12-DEC-2012	19-DEC-2012	26-DEC-2012	✓	20-DEC-2012	28-JAN-2013	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
QC01a	12-DEC-2012	19-DEC-2012	26-DEC-2012		20-DEC-2012	28-JAN-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft							
Soil Glass Jar - Unpreserved (EP071)							
QC01a	12-DEC-2012	20-DEC-2012	26-DEC-2012	✓	21-DEC-2012	29-JAN-2013	✓

Page	: 3 of 6
Work Order	: ES1229744
Client	: JBS ENVIRONMENTAL
Project	: 42458 WAR MEMORIAL HOSPITAL



Matrix: SOIL				Evaluation	× = Holding time	breach ; 🗸 = Withir	n holding time.
Method	Sample Date	Ex	traction / Preparation				
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC01a	12-DEC-2012	20-DEC-2012	26-DEC-2012	1	20-DEC-2012	29-JAN-2013	✓
EP080: BTEX							
Soil Glass Jar - Unpreserved (EP080) QC01a	12-DEC-2012	18-DEC-2012	26-DEC-2012	~	20-DEC-2012	26-DEC-2012	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC01a	12-DEC-2012	18-DEC-2012	26-DEC-2012	1	20-DEC-2012	26-DEC-2012	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC01a	12-DEC-2012	18-DEC-2012	26-DEC-2012	1	20-DEC-2012	26-DEC-2012	✓



## **Quality Control Parameter Frequency Compliance**

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

Matrix: SOIL				Evaluation	: × = Quality Cor	ntrol frequency r	not within specification ; $\checkmark$ = Quality Control frequency within specification.
Quality Control Sample Type		С	ount		Rate (%)		Quality Control Specification
Analytical Methods	Method	OC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	12	8.3	10.0	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	8	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	3	33.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	3	33.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	3	33.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	3	33.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	3	33.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	3	33.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1	8	12.5	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	3	33.3	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	3	33.3	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	ALS QCS3 requirement



## **Brief Method Summaries**

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method
			is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid
			digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum
			based on metals present. Intensities at selected wavelengths are compared against those of matrix matched
			standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an
			automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate
			acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a
			heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is
			compliant with NEPM (1999) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against
			an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method
			504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against
			an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method
			504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane
			standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and
			quantification is by comparison against an established 5 point calibration curve. This method is compliant with
			NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by
			comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999)
			Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge
and Trap			and Trap - GC/MS.
Tumbler Extraction of Solids (Option A -	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1
Concentrating)			DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the
<i></i>			desired volume for analysis.
Tumbler Extraction of Solids (Option B -	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1
Non-concentrating)			DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



## **Summary of Outliers**

## **Outliers : Quality Control Samples**

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

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

#### **Regular Sample Surrogates**

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

### **Outliers : Analysis Holding Time Compliance**

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

• No Analysis Holding Time Outliers exist.

### **Outliers : Frequency of Quality Control Samples**

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

Matrix: SOIL

Quality Control Sample Type	Co	Count Rate (%) Qual		e (%)	Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	1	12	8.3	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement





# SAMPLE RECEIPT NOTIFICATION (SRN)

**Comprehensive Report** 

Work Order	: ES1	229744			
Client Contact Address	: CATH : 128 C	E <b>NVIRONMENTAL</b> IY ROBERTS DRIORDAN STREET COT NSW, AUSTRALIA 2020	Laboratory Contact Address	: Clien : 277-2	ronmental Division Sydney nt Services 289 Woodpark Road Smithfield / Australia 2164
E-mail Telephone Facsimile	: +61 0	rts@jbsgroup.com.au 2 8338 1011 2 8338 1700	E-mail Telephone Facsimile	: +61-2	ey@alsglobal.com 2-8784 8555 2-8784 8500
Project Order number	: 42458	WAR MEMORIAL HOSPITAL	Page	: 1 of 2	2
C-O-C number Site	:		Quote number	: ES20	012JBSENV0326 (SY/291/12)
Sampler	: M.HO	DGINS	QC Level	: NEPI QCS	M 1999 Schedule B(3) and ALS 3 requirement
Dates					
Date Samples Rec	eived	: 17-DEC-2012	Issue Date		: 17-DEC-2012 18:06
Client Requested E	ue Date	: 28-DEC-2012	Scheduled Reportin	ng Date	28-DEC-2012
Delivery Det	ails				
Mode of Delivery		: Carrier	Temperature		: 13.2'C - Ice bricks present
No. of coolers/boxe	es	: 1 HARD	No. of samples rec	eived	: 4
Security Seal		: Intact.	No. of samples ana	alysed	: 2

## **General Comments**

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Asbestos analysis will be conducted by ALS Newcastle.
- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.
- Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal Aqueous (14 days), Solid (60 days) from date of completion of work order.

Address 277-289 Woodpark Road Smithfield NSW Australia 2164 PHONE +61-2-8784 8555 Facsimile +61-2-8784 8500

Environmental Division Sydney ABN 84 009 936 029 Part of the ALS Group An ALS Limited Company



PH/BTEX/PAH/OC/OP/PCB/8Metals

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OIL - S-16

Digestion)

Identification in Soils

sis requested

SOIL

### Sample Container(s)/Preservation Non-Compliances

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

### • No sample container / preservation non-compliance exist.

## Summary of Sample(s) and Requested Analysis

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

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

bracketed without a Matrix: SOIL Laboratory sample ID	a time component. Client sampling date / time	Client sample ID	(On Hold) SOI No analysis re	SOIL - EA200 Asbestos Iden	SOIL - S-02 8 Metals (incl.
ES1229744-001	12-DEC-2012 15:00	QC01a		✓	
ES1229744-002	13-DEC-2012 15:00	QC02a			✓
ES1229744-003	13-DEC-2012 15:00	QC03a	✓		
ES1229744-004	13-DEC-2012 15:00	QC04a	✓		

## Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

## Requested Deliverables

ANA TRAYNOR		
- A4 - AU Tax Invoice ( INV )	Email	atraynor@jbsgroup.com.au
CATHY ROBERTS		
<ul> <li>*AU Certificate of Analysis - NATA (COA)</li> </ul>	Email	croberts@jbsgroup.com.au
<ul> <li>*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )</li> </ul>	Email	croberts@jbsgroup.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	croberts@jbsgroup.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	croberts@jbsgroup.com.au
- A4 - AU Tax Invoice ( INV )	Email	croberts@jbsgroup.com.au
- Chain of Custody (CoC) ( COC )	Email	croberts@jbsgroup.com.au
- EDI Format - ENMRG (ENMRG)	Email	croberts@jbsgroup.com.au
- EDI Format - ESDAT ( ESDAT )	Email	croberts@jbsgroup.com.au
INVOICES		
- A4 - AU Tax Invoice ( INV )	Email	gng@jbsgroup.com.au
MITCH HODYINS		
<ul> <li>*AU Certificate of Analysis - NATA</li> </ul>	Email	mhodyins@jbsgroup.com.au
<ul> <li>*AU Interpretive QC Report - DEFAULT (Anon QCI Rep)</li> </ul>	Email	mhodyins@jbsgroup.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	mhodyins@jbsgroup.com.au
- A4 - AU Sample Receipt Notification - Environmental HT	Email	mhodyins@jbsgroup.com.au
- Chain of Custody (CoC)	Email	mhodyins@jbsgroup.com.au
- EDI Format - ENMRG	Email	mhodyins@jbsgroup.com.au
- EDI Format - ESDAT	Email	mhodyins@jbsgroup.com.au
MR SAMAN TAEIDI		
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	saman.taeidi@alsglobal.com
- Chain of Custody (CoC) ( COC )	Email	saman.taeidi@alsglobal.com

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OF CUSTODY	LABORATORY BATCH NO. SAMPLERS M. Hodoins	ו וריתו	2000 2000 2000 2000 2000 2000 2000 200	) 2	र्ग त्र	HOTOH HOTOH		Environmental Division Sydney	ES1229744				Margan Philps ELS J#83208	NAME: Serger 2017/17. 05: 05: 16:20 VC - Maxanters and Frand Val. 145 Prov. 2	128 D'Alcapa Sr, Mascot NSW 2010 PC Dox 540 Mascot NSW 1460 Kwalissond Conum
* Preve Stad Asharyles to the CHAIN OF	PROJECT NO.: 42458 PROJECT NAME: War Memorial Hospital	<u>\$ሚ</u> የይ ጽይዋሪጽፓ TO: C. Roberts, M. Hadgins SEND INVOICE TO: Grace No ይለፓይ ጽድሮውሮው ይሃ፡፡ 5 ኤሳሊኤተሪት ፕሬትት	NAL	VIX D A T E DHE TYPE & PRESERVATIVE	4 1 1 2001 18/10/10 13/13/13	Q(U4, 0) 1 - 1 - 1 - 1		-Subcon Marward Lab / Split WO	Ordaniset 13, 1 Date 14 bester .	Comote / Couriers	· ····································	RELINQUISKED BY:   . METHOD OF SKIFMENT:	4/13°	DATE: CONSIGNMENT NOTE NO. [7]12/22] TRANSPORT CO 244: P. FARE: A. SALLED F. G. P. PARK: P Mild All Prad. C. Seduri H. A. WEI Frid.	xnortal Jrty ud ABN 67 071 842 638 2 8345-1011 1348-1703

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PICKFORD & RHYDER CONSULTING PTY LTD



PO Box 1422 Lane Cove 1595 Rear - 244 Burn's Bay Hoad Lane Cove NSW Australia Phone: (02) 9418 9150 Fax: (02) 9418 9150

2 January 2013 Replaces Certificate Ref. 72855-ID, dated 20 December 2012

Ms Cathy Roberts & M. Hodgins JBS Environmental PO Box 940 MASCOT INSW 1460

Email: croberts@jbsgroup.com.au, mhodgins@jbsgroup.com.au

## CERTIFICATE OF ANALYSIS - ASBESTOS IDENTIFICATION

YOUR REFERENCE/JOB No:42458TYPE OF SAMPLES:Bulk sample - received from Envirolab ServicesSITE LOCATION:War Memorial HospitalDATE SAMPLED:12 December 2012DATE RECEIVED:19 December 2012OUR REFERENCE:72855-ID-a

**TEST METHOD:** Soil samples examined by Stereomicroscopy and Polarized Light Microscopy (with Dispersion Staining) in accordance with AS 4964-2004: - 'Method for the qualitative identification of asbestos in bulk samples' as outlined in Laboratory Method ID/1. The Reporting Limit for the results in this Contificate is numerically equal to the lowest detection limit of 0.1 g/kg. Trace asbestos analysis has been conducted on each sample, which is generally designed to detect 'respirable' asbestos fibres (ie less than 3 micrometres in width) distributed throughout the sample.

Sample No	Lab No	Sample Information	Analysis Result	Description
OC01A	72855	Soil sample a received	is No aspestos detected	The sample was a dark brown soil with stones and plant matter, of approximate weight 100 g. Organic fibros were detected in the sample. Asbestos fibros were not found above the Reporting Limit of 0.1 g/kg.

All sampling and site work has been undertaken by the client - the analytical procedures and results reported on this Certificate have been conducted by Pickford & Phyder Consulting.

Sampling is not covered by the scope of accreditation.

Analysed and reported by:

L. Apthorpe, Approved Identifier and Signatory.



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TECHNIGAL Competence Accreditation humber 2515



# Appendix L 95% UCL Calculations

	А	В	С	D	E UCL Statist	F ics for Data	G Sets with No	H n-Detects	I	J	K	L
1												
2		User Sele	ected Options	;								
4	Date		Computation	25/08/2016 5:	05:45 PM							
			From File	WorkSheet.xls	<u> </u>							
5		Fi	ull Precision	OFF	-							
6 7	(		Coefficient	95%								
	Number of	f Bootstran	Operations	2000								
8			opolationo									
9												
10	BaP TEQ											
11												
12 13						General	Statistics					
			Total	Number of Ob	servations	11			Numbe	er of Distinct (	Observations	11
14										er of Missing (		
15					Minimum	0.313			Humbe		Mean	
16					Maximum	9.74					Median	
17					SD	3.683				Std F	Error of Mean	
18				Coefficient o		0.948				Siu. E	Skewness	
19					variation	0.948					SKEWNESS	0.003
20						Normal						
21					at Otatiatia		GOF Test		Chamina M			
22				Shapiro Wilk Te		0.825			•	ilk GOF Test		
23			5% S	hapiro Wilk Crit		0.85		Data N		5% Significa	nce Level	
24			-	Lilliefors Tes		0.257		Data and		GOF Test		
25			5	5% Lilliefors Crit		0.267				at 5% Signific	cance Level	
26				Data ap	ppear Appr	oximate Noi	rmal at 5% S	ignificance l	Level			
27						<u> </u>						
28					Ass	suming Norr	nal Distributi					
29			95% No	ormal UCL	-			95%		usted for Skew	•	
30				95% Stude	ent's-t UCL	5.898			-	ed-CLT UCL	. ,	
31									95% Modif	ied-t UCL (Jo	hnson-1978)	) 5.935
32												
33							GOF Test					
34					st Statistic	0.567				Gamma GO		
35				5% A-D Crit		0.751	Detected			Distributed at	-	nce Level
36					st Statistic	0.219			-	ff Gamma G		
37				5% K-S Crit		0.262				Distributed at	5% Significa	nce Level
38				Detected da	ata appear	Gamma Dis	stributed at 5	% Significar	nce Level			
39												
40							Statistics					
41					hat (MLE)	1.033				star (bias co		
42					hat (MLE)	3.76			Theta	star (bias co		
43					hat (MLE)	22.73					as corrected)	
44			Μ	LE Mean (bias	corrected)	3.885					as corrected)	
45										e Chi Square		
46			Adjus	sted Level of Si	gnificance	0.0278			A	djusted Chi S	Square Value	8.303
47					1							
48					Ass	uming Gam	ima Distributi	ion				
49	95	5% Approxi	imate Gamma	a UCL (use whe	en n>=50))	7.469		95% A	djusted Gam	ima UCL (use	e when n<50)	8.359
50							ı					<u>.</u>
51						Lognorma	I GOF Test					
52			S	Shapiro Wilk Te	st Statistic	0.911		Sha	piro Wilk Log	gnormal GOF	Test	
53			5% S	hapiro Wilk Crit	tical Value	0.85		Data appe	ar Lognorma	ıl at 5% Signi	ficance Leve	1
54				Lilliefors Tes	st Statistic	0.191		Li	lliefors Logn	ormal GOF T	est	
55			5	% Lilliefors Crit	tical Value	0.267		Data appe	ar Lognorma	ıl at 5% Signi	ficance Leve	1
56				Da	ata appear	Lognormal	at 5% Signifie	cance Level		-		
57						-	-					
57						Lognorma	I Statistics					
JQ												

	А	В	С	D	E	F	G	Н	I	J	K	L					
59				Minimum of L		-1.162					logged Data	0.801					
60			Ν	/laximum of L	Logged Data	2.276				SD of	logged Data	1.199					
61																	
62					Assu	uming Logno	rmal Distribu	tion									
63					95% H-UCL	16.53		8.958									
64			95% (	Chebyshev (	MVUE) UCL	11.14			97.5% (	Chebyshev (	MVUE) UCL	14.16					
65			99% (	Chebyshev (	MVUE) UCL	20.11											
66																	
67					Nonparame	tric Distribut	ion Free UCI	_ Statistics									
68				Data appear	r to follow a [	Discernible D	istribution at	5% Signific	ance Level								
69																	
70					Nonpar	rametric Dist	ic Distribution Free UCLs										
71				95	5% CLT UCL	5.712		95% Jackknife UCL									
72			95%	Standard Bo	ootstrap UCL	5.591		6.348									
73			9	5% Hall's Bo	otstrap UCL	5.622			95% F	Percentile Bo	ootstrap UCL	5.709					
74			ę	95% BCA Bo	otstrap UCL	5.74											
75			90% Ch	ebyshev(Me	an, Sd) UCL	7.217			95% Ch	ebyshev(Me	an, Sd) UCL	8.726					
76			97.5% Ch	ebyshev(Me	an, Sd) UCL	10.82			99% Ch	ebyshev(Me	an, Sd) UCL	14.94					
77																	
78						Suggested	UCL to Use										
79				95% Stu	dent's-t UCL	5.898											
80																	
81	1	Vote: Sugge	stions regard	ing the selec	ction of a 95%	6 UCL are pr	ovided to he	lp the user to	o select the n	nost appropri	iate 95% UCI	L.					
82		These rec	ommendatior	ns are based	upon the res	sults of the si	imulation stu	dies summa	rized in Singl	h, Singh, and	1 laci (2002)						
83			and Singh	and Singh (2	2003). Howev	/er, simulatio	ons results wi	ill not cover a	all Real Worl	d data sets.							
84				For ad	ditional insig	ht the user m	nay want to c	onsult a stat	istician.								
85																	

	A	B C	D	E UCL Statist	F tics for Data	G Sets with No	H n-Detects	I	J	K		L
1												
2	Usr	er Selected Options										
3		ne of Computation	17/08/2016 1	2:07:20 PM								
4		From File	WorkSheet.x									
5		Full Precision	OFF									
6 7	Confi	idence Coefficient	95%									
8	Number of Boc	otstrap Operations	2000									
9												
10	TRH C16-C34											
11												
12					General	Statistics						
13		Total	I Number of Ob	oservations	11			Numb	er of Distinc	t Observat	ions	9
14			Number	r of Detects	9				Number of	of Non-Det	ects	2
15		N	lumber of Distir	nct Detects	8			Numb	per of Disting	ct Non-Det	ects	1
16			Minim	num Detect	130				Minimu	um Non-De	tect	100
17			Maxim	num Detect	430				Maximu	um Non-De	tect	100
18			Varian	nce Detects	10761				Percer	nt Non-Det	ects	18.18%
19			Ме	an Detects	231.1					SD Det	ects	103.7
20			Medi	ian Detects	210					CV Det	ects	0.449
21			Skewne	ess Detects	0.97				Kı	urtosis Det	ects	0.128
22			Mean of Logg	ed Detects	5.359				SD of L	ogged Det	ects	0.428
23						L						
24				Norm	al GOF Tes	t on Detects (	Only					
25		S	Shapiro Wilk Te	est Statistic	0.893			Shapiro W	/ilk GOF Te:	st	-	
26		5% S	Shapiro Wilk Cr	itical Value	0.829	De	etected Data	a appear No	rmal at 5% \$	Significanc	e Lev	/el
27			Lilliefors Te	est Statistic	0.168			Lilliefors	GOF Test			
28		5	5% Lilliefors Cr	itical Value	0.295	De	tected Data	a appear No	rmal at 5% \$	Significanc	e Lev	/el
29			Dete	cted Data a	ippear Norm	al at 5% Sigr	nificance Le	evel				
30												
31		Kaplan-	-Meier (KM) Sta	atistics using	g Normal Cr	itical Values a	and other N	lonparametr	ic UCLs			
32				Mean	207.3					Error of N		32.59
33				SD	101.9					KM (BCA)		262.7
34				KM (t) UCL	266.3			95% KM (	Percentile E	. ,		261.8
35				KM (z) UCL	260.9				95% KM B	•		286.3
36			90% KM Cheb	•	305				95% KM C	•		349.3
37		97	7.5% KM Cheb	yshev UCL	410.8				99% KM C	hebyshev l	JCL	531.5
38								-				
39	<u> </u>					tected Obser		•				
40	<u> </u>			est Statistic	0.313			Anderson-Da			<u> </u>	
41	<u> </u>		5% A-D Cr		0.723	Detected		ar Gamma I		-	fican	ce Level
42	<u> </u>			est Statistic	0.165	Detector		Kolmogrov-			<u></u>	
43				itical Value	0.28 Commo Dis			ar Gamma I	JISTIDUTED 2	11 3% SIGNI	ncan	LE LEVEI
44			Defected 0	iata appear		tributed at 5%	no Signinicali	ICE LEVEI				
45				Gamme	Statistics on	Detected Da	ata Only					
46			I.	k hat (MLE)	6.133	Delected Da		Ŀ	star (bias c			4.163
47				a hat (MLE)	37.68				star (bias c		· ·	4.163 55.52
48				u hat (MLE)	110.4			i i i etc	•	bias correc		55.52 74.93
49 50		<u></u> Λ <i>Λ</i>	ILE Mean (bias		231.1				-	bias correc		113.3
50				Juneousu)		<u> </u>					)	
51 52				Gamm	a Kaplan-Mr	eier (KM) Stat	tistics					
52				k hat (KM)	4.138					nu hat (	KM)	91.03
53		Approximate Ch			70.03			Adjusted C	hi Square V	,	· ·	67.03
54 55	95% Gam	ima Approximate Ki	•			<u> </u>	95% Gamn	na Adjusted			• • •	281.5
55 56				.51112 -50)	200.7	<u> </u>						201.0
56			Gs	mma ROS	Statistics us	ing Imputed	Non-Detect	ts				
57 50		GROS may	y not be used v			•			it multiple D	Ls		
58	L				51103 - 507					-0		

	A	В	С	D	E	F	G	Н	I	J	K	L
59					y not be used							
60					ions, GROS n							
61		For gar	nma distribut	ed detected	d data, BTVs a		ay be compu	ted using ga	mma distribu	ution on KM e		
62					Minimum						Mean	194
63					Maximum	430					Median	170
64					SD	124.4					CV	0.641
65					k hat (MLE)	1.656				star (bias cori	,	1.265
66				Th	eta hat (MLE)	117.1			Theta	star (bias cori	'	153.4
67					nu hat (MLE)	36.44				nu star (bia		27.83
68			MI	E Mean (b	ias corrected)	194				MLE Sd (bia	'	172.5
69									-	Level of Sigr	,	0.0278
70				•	alue (27.83, α)	16.8			-	i Square Valu		15.41
71		95% Gamma	a Approximat	e UCL (use	when n>=50)	321.5		95% Ga	amma Adjust	ted UCL (use	when n<50)	350.3
72												
73					ognormal GC		etected Obse	ervations On	•			
74				•	Test Statistic				-	lk GOF Test		
75			5% SI	•	Critical Value	0.829	Det	ected Data a		ormal at 5% S	ignificance L	.evel
76					Test Statistic	0.143				GOF Test		
77			5		Critical Value	0.295			•	ormal at 5% S	ignificance L	.evel
78				Det	ected Data ap	pear Lognor	mal at 5% S	ignificance L	evel			
79												
80					ognormal RO		Ising Impute	d Non-Detec	ts			
81					Original Scale						n Log Scale	5.168
82					Original Scale	112.4					n Log Scale	0.576
83		95% t L	-	-	of ROS data)	264.1			95%	Percentile Bo		256.4
84			(		Bootstrap UCL	264.5				95% Boo	tstrap t UCL	284.4
85				95% H-U	CL (Log ROS)	313.6						
86												
87		UC	CLs using Lo	-	stribution and	KM Estimate	s when Dete	ected data ar	e Lognormal	lly Distributed	i	
88					lean (logged)	5.222					L (KM -Log)	283.2
89				KN	/I SD (logged)	0.467			95% (	Critical H Valu	ue (KM-Log)	2.134
90			KM Standa	rd Error of N	Mean (logged)	0.149						
91												
92						DL/2 St	atistics					
93			DL/2	Normal					DL/2 Log-T	ransformed		
94					Original Scale						n Log Scale	5.096
95					Original Scale						n Log Scale	0.7
96				•	nes normality)						H-Stat UCL	360
97			DL/2 i	s not a reco	ommended me	ethod, provid	ed for compa	arisons and h	nistorical rea	sons		
98												
99					-	etric Distribut						
100				Detecte	d Data appea	r Normal Dis	tributed at 5	% Significan	ce Level			
101												
102						Suggested	UCL to Use					
103				95	% KM (t) UCL	266.3			95% KM (F	Percentile Boo	otstrap) UCL	261.8
104												
105		Note: Sugge	-	-	ection of a 95%	-		-			ate 95% UCI	
106					lations are ba							
107					upon the resu				-			
108	Ho	wever, simu	lations result	s will not co	over all Real W	/orld data se	ts; for additio	onal insight t	he user may	want to cons	ult a statistici	ian.
109												

1	А	В	С	D	E JCL Statist	F tics for Data	G Sets with No	H Detects	I	J	К	L
1												
2		User Sele	ected Options	;								
4	Date		computation	17/08/2016 2:0	0:14 PM							
4 5			From File	WorkSheet_a.	xls							
		Fu	Ill Precision	OFF								
6 7	(		Coefficient	95%								
7 8			Operations	2000								
9												
10	Copper											
11 12	pp											
12						General	Statistics					
			Total	Number of Obs	ervations	27			Numbe	er of Distinct O	bservations	23
14			i otai			27				r of Missing O		0
15					Minimum	17			Numbe		Mean	48.81
16					Maximum	140					Median	37
17					SD	31.79				Std E	rror of Mean	6.118
18				Coefficient of		0.651				Jiu. El	Skewness	1.509
19				Coefficient of	variation	1 60.0					SKEWHESS	1.509
20						Nam! 4						
21							GOF Test		Oh an ing M			
22				Shapiro Wilk Tes		0.83		<b>D</b> · N	-	ilk GOF Test		
23			5% S	hapiro Wilk Criti		0.923		Data N		5% Significan	ice Level	
24				Lilliefors Tes		0.202				GOF Test		
25			5	% Lilliefors Criti		0.171			ot Normal at	5% Significan	ice Level	
26					Data Not	Normal at 5	% Significan	ce Level				
27												
28					As	suming Nor	nal Distributi					
29			95% No	ormal UCL				95%		isted for Skew		
30				95% Stude	nt's-t UCL	59.25			-	ed-CLT UCL (	,	60.78
31									95% Modifi	ied-t UCL (Joł	nnson-1978)	59.55
32												
33							GOF Test					
34				A-D Tes	st Statistic	0.662			-	Gamma GOF		
35				5% A-D Crit	ical Value	0.751	Detected	d data appe	ar Gamma D	istributed at 5	5% Significar	ice Level
36				K-S Tes	t Statistic	0.132		Kolmo	grov-Smirno	ff Gamma GO	F Test	
37				5% K-S Crit	ical Value	0.169	Detected	d data appe	ar Gamma D	istributed at 5	5% Significar	ice Level
38				Detected da	ita appear	Gamma Dis	stributed at 59	% Significar	nce Level			
39												
40						Gamma	Statistics					
41				k	hat (MLE)	3.103			k	star (bias corr	rected MLE)	2.783
42				Theta	hat (MLE)	15.73			Theta	star (bias cori	rected MLE)	17.54
43				nu	hat (MLE)	167.5				nu star (bia	s corrected)	150.3
44			Μ	LE Mean (bias o	corrected)	48.81				MLE Sd (bia	s corrected)	29.26
45									Approximate	e Chi Square '	Value (0.05)	122.9
46			Adjus	sted Level of Sig	gnificance	0.0401			A	djusted Chi S	quare Value	121.3
47												
47					Ass	suming Garr	ma Distributi	ion				
48	9	5% Approx	kimate Gamm	a UCL (use whe		59.67			djusted Gam	ma UCL (use	when n<50)	60.45
50					,		1				,	
50						Lognorma	I GOF Test					
51	1		S	Shapiro Wilk Tes	t Statistic	0.958		Sha	piro Wilk Loo	normal GOF	Test	
				hapiro Wilk Criti		0.923			-	l at 5% Signifi		
53			5,00	Lilliefors Tes		0.0935			•	ormal GOF Te		
54			5	5% Lilliefors Criti		0.0933			-	l at 5% Signifi		
55			5				at 5% Signifi		•	i at 5 /0 Gigi III	CONCE LEVEI	
56				Da	ira ahheat	Lognormal	al 5 /0 Signific	Cance Level	1			
57						Long	l Ctotictics					
58						Lognorma	I Statistics					

	А	В	С	D	E	F	G	Н		J	K	L				
59				Minimum of L		2.833					logged Data	3.718				
60			Ν	Maximum of L	_ogged Data	4.942				SD of	logged Data	0.575				
61																
62					Assı	uming Logno	rmal Distribu	ition								
63					95% H-UCL	61.15		65.15								
64			95% (	Chebyshev (	MVUE) UCL	72.81			97.5% (	Chebyshev (	MVUE) UCL	83.43				
65			99% (	Chebyshev (	MVUE) UCL	104.3										
66																
67					Nonparame	tric Distribut	ion Free UCI	L Statistics								
68				Data appear	r to follow a [	Discernible D	istribution at	5% Signific	ance Level							
69																
70					Nonpar	rametric Distribution Free UCLs										
71				95	5% CLT UCL	58.88		95% Jackknife UCL								
72			95%	Standard Bo	ootstrap UCL	59.01		62.09								
73			9	5% Hall's Bo	otstrap UCL	61.51			95% F	Percentile Bo	ootstrap UCL	59.07				
74			Ģ	95% BCA Bo	otstrap UCL	61.15										
75			90% Ch	ebyshev(Me	an, Sd) UCL	67.17			95% Ch	ebyshev(Me	an, Sd) UCL	75.48				
76			97.5% Ch	ebyshev(Me	an, Sd) UCL	87.02			99% Ch	ebyshev(Me	an, Sd) UCL	109.7				
77																
78						Suggested	UCL to Use									
79			959	% Adjusted C	Gamma UCL	60.45										
80																
81	١	Vote: Sugger	stions regard	ing the selec	tion of a 95%	6 UCL are pr	ovided to he	Ip the user to	o select the n	nost appropri	iate 95% UCI	L.				
82		These rec	ommendatior	ns are based	upon the res	sults of the si	imulation stu	dies summa	rized in Singl	h, Singh, and	d laci (2002)					
83			and Singh	and Singh (2	2003). Howev	/er, simulatio	ons results wi	ill not cover	all Real Worl	d data sets.						
84				For ad	ditional insig	ht the user m	nay want to c	onsult a stat	tistician.							
85																

1	A	В	С	D E UCL		F tics for Data	G Sets with No	H Din-Detects	I	J	K	L	
2													
3	User Selected Options												
4	Date/Time of Computation 17/08/2016 2:01:43 PM												
5			From File	WorkSheet_b.xls									
6		F	ull Precision	OFF									
7			e Coefficient	95%									
8	Number o	f Bootstrap	o Operations	2000									
9													
10													
11	Lead												
12						Comorol	Ctatiatian						
13		General Statistics           Total Number of Observations         27         Number of Distinct Observations         25									25		
14			TULAI	Number of Observa	auons	27					Observations		
15				Min	imum	65			Numbe		Mean		
16					imum	1500					Median		
17 18					SD	412.2				Std. E	Error of Mean		
18 19				Coefficient of Var		0.927					Skewness		
20												1	
21	Normal GOF Test												
22													
23	5% Shapiro Wilk Critical Value					0.923		Data No	ot Normal at	Normal at 5% Significance Level			
24	Lilliefors Test Statistic					0.22			Lilliefors	Lilliefors GOF Test			
25			5	% Lilliefors Critical	0.171	Data Not Normal at 5% Significance Level							
26	Data Not Normal at 5% Significance Level												
27													
28					As	suming Norr	nal Distributi						
29			95% No	ormal UCL				95%		usted for Skev	•		
30	95% Student's-t UCL					580.2			-		(Chen-1995)		
31	ļ								95% Modifi	ied-t UCL (Jo	ohnson-1978)	584.2	
32						Commo	GOF Test						
33				A-D Test St	atistic	0.823		Ando	reon-Darling	Gamma GO	E Tost		
34				5% A-D Critical		0.762	Anderson-Darling Gamma GOF Test Data Not Gamma Distributed at 5% Significance Level					vel	
35	K-S Test Statistic					0.159				ff Gamma G	0		
36 37	5% K-S Critical Value				0.171	Detected		-			nce Level		
37	5% K-S Critical Value       0.171       Detected data appear Gamma Distributed at 5% Significance Level         Detected data follow Appr. Gamma Distribution at 5% Significance Level												
39													
40						Gamma	Statistics						
41		k hat (MLE)			(MLE)	1.57	k star (bias corrected MLE					1.42	
42				Theta hat (		283.4			Theta	•	rrected MLE)		
43				nu hat (		84.77		nu star (bias corrected)					
44		MLE Mean (bias corrected)			ected)	444.9	MLE Sd (bias corrected)						
45										-	e Value (0.05)		
46			Adjus	sted Level of Signific	cance	0.0401			A	djusted Chi S	Square Value	56.45	
47					•								
48			vimet- 0			-	ima Distributi					604.0	
49	g	oo% Appro	ximate Gamm	a UCL (use when n	>=50)	593.1		95% Ac	Justed Gam	ma UCL (use	e when n<50)	604.3	
50	Lagnarmal GOE Tast												
51		Lognormal GOF Test           Shapiro Wilk Test Statistic         0.964         Shapiro Wilk Lognormal GOF Test											
52	Shapiro Wilk Test Statistic 5% Shapiro Wilk Critical Value					0.904				-	ficance Level		
53	5% Shapiro Wilk Critical Value Lilliefors Test Statistic					0.923			-	ormal GOF T			
54 55	5% Lilliefors Critical Value				0.170			-		ficance Level			
55 56	Data appear Lognormal at 5% Significance Level												
50 57		··· · ·											
57						Lognorma	I Statistics						
50						-							

	А	В	С	D	E	F	G	Н	I	J	K	L
59	Minimum of Logged Data					4.174	Mean of logged Data				5.747	
60	Maximum of Logged Data					7.313	SD of logged Data			0.842		
61												
62		Assuming Lognormal Distribution										
63					95% H-UCL	655.2			90% (	Chebyshev (	MVUE) UCL	674.9
64			95% (	Chebyshev (I	MVUE) UCL	781.9	97.5% Chebyshev (MVUE) UCL					930.4
65			99% (	Chebyshev (I	MVUE) UCL	1222						
66												
67	Nonparametric Distribution Free UCL Statistics											
68		Data appear to follow a Discernible Distribution at 5% Significance Level										
69												
70		Nonparametric Distribution Free UCLs										
71	95% CLT UCL				575.3		95% Jackknife UCL					
72		95% Standard Bootstrap UCL				570.3	95% Bootstrap-t UCL					635.1
73	95% Hall's Bootstrap UCL			587.3	95% Percentile Bootstrap UCL					578.1		
74		95% BCA Bootstrap UCL				596.6						
75		90% Chebyshev(Mean, Sd) UCL				682.8	95% Chebyshev(Mean, Sd) UCL					790.6
76	97.5% Chebyshev(Mean, Sd) UCL				940.3	99% Chebyshev(Mean, Sd) UCL 1234					1234	
77												
78						Suggested	UCL to Use					
79			959	% Adjusted C	Gamma UCL	604.3						
80												
81	١	Vote: Sugger	stions regard	ing the selec	tion of a 95%	6 UCL are pr	ovided to hel	lp the user to	o select the m	nost appropri	iate 95% UCI	L.
82		These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)										
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84		For additional insight the user may want to consult a statistician.										
85												



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### **Document Status**

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