

JFTA Environmental Solutions

UST Removal and Validation Report

Hornsby Kuring-Gai Hospital

Palmerston Rd

Hornsby NSW



On Behalf of

Northern Sydney Central Coast Health



COPY NO. [1]

Northern Sydney Central Coast Health

UST Removal and Validation Report

Hornsby Kuring-Gai Hospital

Palmerston Rd

Hornsby NSW

July 2009

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Northern Sydney Central Coast Health

UST Removal and Validation Report

Hornsby Kuring-Gai Hospital

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List of Abbreviations

BTEX	Benzene, Toluene, Ethyl Benzene, Xylenes
COC	Chain of Custody
COPC	Chemical of Potential Concern
HIL	Health Investigation Level
m	metre
mg/kg	milligrams per kilogram
NATA	National Association of Testing Laboratories
OCPs	Organochlorine Pesticides
PCB	Polychlorinated Biphenyls
PID	Photo Ionisation Detector
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percentage Difference
TH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank

Executive Summary

JFTA Environmental Solutions was commissioned by Northern Sydney Central Coast Health (NSCCH) to undertake underground storage tank removal and validation works at Hornsby Kuring-Gai Hospital, Hornsby NSW. The area of the storage tank was located adjacent to Building 18, in the southern end of the hospital grounds, adjacent to Burdett Street.

The objective of the works was to remove the 25,000 L underground storage tank, all associated fuel infrastructure and backfill sand/soils with the intention to validate the excavated material and resultant excavations.

The fuel infrastructure removal works were conducted on 27 and 28 May 2009, whilst validation and reinstatement of the excavations were conducted on 29 May and 1 June. Prior to any decommissioning works taking place, 11 900 L of unleaded petroleum was removed and disposed.

Fuel infrastructure comprised: a 25,000 L underground storage tank (observed to be in good condition, with no visible signs of corrosion); a single fuel dispenser; remote fill point; fuel transfer lines; vent pipe; and vent lines. A small 'bus shelter' style canopy was housed over the fuel dispenser, which also was removed as part of the works.

Excavated tank backfill sands/soils were estimated at a volume of ~75 m³ and were stockpiled to the east of the tank pit prior to sampling. The final tank pit excavation measured 9 m x 3.5 m x 3.4 m deep (~110 m³). 75 m³ of imported fill material was brought to the site to account for the volume of the removed tank and concrete anchors.

A total of 12 primary soil samples were collected from the tank pit excavations and from beneath the fuel dispenser, fill point, fuel transfer lines and vent lines. Excavated soils were sampled at three locations from the stockpiled material and a further two samples were collected from the imported fill material.

Excavation validation samples and stockpile samples were submitted for laboratory analysis of total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes and lead. Validation samples collected from the imported fill material were analysed for total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, metals, organochlorine pesticides and polychlorinated biphenyls.

None of the soil samples were reported by the laboratory have concentrations of chemicals of potential concern in exceedence of the selected validation criteria and therefore were considered suitable to remain on-site.

All excavations were reinstated with a combination of validated excavated soils and imported fill material. The soils were compacted using the excavator and track rolled. A layer of topsoil was placed over the imported fill to allow plantation of grass seed and to return the area to a similar condition prior to commencement of the works.

1 Introduction

1.1 Overview

JFTA Environmental Solutions was commissioned by NSCCH to undertake Underground Storage Tank (UST) removal and validation works at Hornsby Kuring-Gai Hospital, Hornsby NSW. The area of the storage tank was located adjacent to Building 18, in the southern end of the hospital grounds, adjacent to Burdett Street.

The objective of the works was to remove the 25,000 L UST, all associated fuel infrastructure and backfill sand/soils with the intention to validate the excavated material and resultant excavations.

The UST Removal and Validation report has been developed in accordance with the following guidelines:

- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA 1997.
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition)*, NSW DEC 2006.
- *Contaminated Sites: Guidelines for Assessing Service Station Sites*, NSW EPA 1994.
- *National Environment Protection (Assessment of Site Contamination) Measure*, NEPC 1999.

1.2 Scope of Work

The scope of work conducted for the UST removal and validation works comprised:

- Removal and disposal of 11 900 L unleaded petroleum from the UST
- Decommissioning, exposure and removal of the:
 - o 25,000 L UST
 - o Fuel dispenser and canopy
 - o Remote fill point
 - o Vent pipe and underground lines
 - o Underground fuel transfer lines
- Disposal of the UST to a licensed tank destruction facility (tank destruction certificate is presented in **Appendix B**)
- Removal of tank sands/soils from the UST excavation and vent/fuel transfer line excavations
- Collection of excavation validation samples (**Figure 2**) for laboratory analysis of Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and lead

- Collection of samples from the excavated soils (60 m³) (**Figure 2**) at a minimum rate of 1 per 25 m³ for reuse on-site, in accordance with the NSW EPA *Guidelines for Assessing Service Station Sites* (1994), and subsequent analysis for TPH, BTEX and lead
- Importation of certified Virgin Excavated Natural Material (VENM) and sampling at a minimum rate of 1 per 100 m³. The certificate of VENM is presented in **Appendix C**.

Samples were analysed for metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc mercury) TPH, BTEX, Organochlorine Pesticides (OCPs) and Polychlorinated Biphenyls (PCBs), as per the imported fill suite requirements of the NSW EPA *Guidelines for Assessing Service Station Sites* (1994)

- Reinstatement and compaction of excavations with a combination of validated stockpiled soils and imported VENM to 100 mm below surrounding ground level
- Completion of excavations with 100 mm top soil
- Submission of a UST Removal and Validation report that addresses the environmental and health risk associated with the soils in the immediate vicinity of the removed UST and associated fuel infrastructure.

2 Background Information

2.1 Site Identification

A summary of specific identifying aspects of the property is presented in the **Table 1**, below.

Table 1 Site Identification

Site Aspect	Details
Street Address	Palmerston Road, Hornsby (Burdett St entrance)
Current Owner	NSW Health
Current Subject Site / Facility Use	Hornsby Kuring-Gai Hospital

2.2 Site Location

Hornsby Kuring-Gai Hospital is located on Palmerston Road, Hornsby NSW. The location of the UST area (site) within the hospital is located to the north of Building 18, near to the Burdett Street entrance. The hospital location is presented in the Site Locality Map (**Figure 1**) whilst the relative location of the former UST and associated fuel infrastructure is presented in the Sample Location Plan (**Figure 2**).

2.3 Site Description

The relative position and orientation of the UST and associated fuel infrastructure is shown in **Figure 2**.

The UST and associated infrastructure has remained disused for the past 2-3 years and currently comprises a small landscaped area of approximately 175 m³. The site has a grassed surface and picnic table and is centrally located between two hospital buildings (including Building 18), a small weatherboard shed and hospital car parking area. At the time the UST was in use, the area was used for vehicle refueling, with the associated fuel dispenser and remote fill point adjacent to the car park, to the west of the UST.

2.4 Surrounding Land Use

Land use surrounding the Hornsby Kuring-Gai Hospital includes:

- North – Lowe Road, with James Park beyond
- East – Derby Road, with residential properties beyond
- West – Palmerston Road, with residential properties beyond

- South – Burdett Street, with residential properties beyond.

2.5 Topography and Surface Drainage

The UST removal site is even with a slight slope towards the east. Due to the unsealed nature of the site area, storm water is expected to infiltrate the soils and intercept the groundwater table.

The adjacent car park to the west, which accommodates the fuel dispenser and remote fill point, has a slight slope towards the south. The bitumen surface of the car park is graded such that storm water is expected to be diverted to a series of centrally located storm water drains.

2.6 Geology and Hydrogeology

2.6.1 Geology

Geology of the site comprises a silty clay brown topsoil to 0.5 metres below ground level (m bgl), underlain by natural mottled grey/orange, stiff, dry silty clay to the extent of the UST excavation (3.4 m bgl). Bedrock was encountered at the base of the excavation.

2.6.2 Hydrogeology

The regional groundwater flow is anticipated to travel in a south westerly direction, towards Waitara Creek. Groundwater was not intercepted during the UST removal and validation works.

Investigation of groundwater depths and flow direction was not conducted as part of this investigation.

2.7 Sensitive Receptors

The presence of the UST and associated fuel infrastructure poses a potential risk to the following potential sensitive receptors:

- Site workers and contractors
- Site visitors / users of the hospital
- Adjacent residences (occupiers).

3 Soil Validation Criteria

The adopted validation criteria are based on a combination of the *Site Auditor Scheme (2nd edition)*, Health Investigation Levels (HILs) for parks, recreational and open space (NEHF E) (NSW DEC, 2006) and the threshold concentrations for sensitive land use, *Guidelines for Assessing Service Station Sites* (NSW EPA, 1994).

The validation criteria are presented in **Table 2**.

Table 2 Adopted Soil Validation Criteria

Analyte	Soil Validation Criteria
TPH/BTEX	
TPH(C ₆ - C ₉)	65
TPH(C ₁₀ - C ₃₆)	1,000
Benzene	1
Toluene	1.4
Ethyl benzene	3.1
Xylene (total)	14
Heavy Metals²	
Arsenic (As)	200
Cadmium (Cd)	40
Chromium (Cr VI)*	200
Copper	2000
Lead (Pb)	600
Mercury (Hg)	30
Nickel (Ni)	600
Zinc	14000
OCPs²	
Aldrin + dieldrin	20

Analyte	Soil Validation Criteria
Chlordane	100
DDT + DDD + DDT	400
Heptachlor	20
PCBs²	
Total PCBs	20

Notes:

All units are listed as mg/kg.

(1) Based on values from Guidelines for Assessing Service Station Sites (EPA, 1994).

(2) Soil Investigation Levels for Urban Redevelopment Sites in *Guidelines for the NSW Site Auditor Scheme* (2nd edition), April 2006 - Health-based investigation levels for parks, recreational and open space (NEHF E).

*Validation levels for Cr VI have been used to compare against total Cr laboratory results as a conservative approach.

4 Field Work

The following sections are a summary of the field activities and associated contractors, tracking of removed fuel infrastructure.

4.1 Field Activities

The following table is an outline of the field activities over the course of the works. The location of excavations and former fuel infrastructure is presented in **Figure 2**.

Table 4 UST Removal Environmental Works Activities

Field Activity	Dates Conducted	Contractor
Site establishment	27 May 2009	JFTA Pty Ltd
Service location of site area	27 May 2009	Locaters
Decommission UST and fuel infrastructure, removal of fuel dispenser, canopy, remote fill point, vent pipe, fuel transfer lines and vent lines	27 May 2009	JFTA Pty Ltd
Remove 25,000 L UST from excavation	12 June 2007	JFTA Pty Ltd / EMR Cranes
Transportation and destruction of UST and associated fuel infrastructure	28 May 2009	Knight Syndicates Pty Ltd
Collect excavation, stockpile and imported VENM validation samples	29 May 2009	JFTA Pty Ltd
Importation of VENM	29 May 2009	Benedicts Sand and Gravel
Excavation reinstatement with validated material	29 May 2009	JFTA Pty Ltd
UST concrete anchor breaking and disposal	29 May and 1 June 2009	JFTA Pty Ltd / Benedict Sand and Gravel
Excavation completion with top soil	1 June 2009	JFTA Pty Ltd

The 25,000 L UST and fuel lines were inspected upon removal and reported to be in good condition with no signs of corrosion apparent. The UST contained 11,900 L of 2-3 year old unleaded petrol, which was removed by a licensed liquid waste disposal contractor prior to appropriate decommissioning and removal of the UST.

The stockpile and excavation validation sampling program was undertaken on 29 May 2009, upon removal of the fuel infrastructure.

The final volumes of the excavations were:

- 3.5m x 9.0m x 3.4m deep (UST excavation); and
- 0.5m x 0.5m x 2m (bowser/fuel transfer line trench)
- 0.5m x 0.5m x 2m (vent line trench).



Excavation validation samples were collected from the resultant UST excavation and adjacent fuel transfer line and vent line trenches (total excavation volume of approximately 75 m³), according to accepted protocols outlined in the NSW EPA Service Station Guidelines (1994). Validation samples of the UST excavation and fuel transfer line / vent line trenches were submitted for TPH, BTEX and lead analysis.

Other validation sampling and analysis included:

- Collection of validation samples from the excavated material (volume of approximately 75 m³) and laboratory analysis for TPH, BTEX and lead
- Collection of validation samples from imported fill material (approximately 75 m³) and laboratory analysis for metals, TPH, BTEX, OCPs and PCBs.

No hydrocarbon odours were observed in the soils and Photo-ionisation Detector (PID) readings were generally low (<11.2 ppm). Validation sample locations are presented on **Figure 2**.

5 Laboratory Analytical Results

The following results are based upon the NATA registered analysis of primary and intra/inter-laboratory sample results and comparison against the adopted screening levels to determine the actions that were conducted in relation to these UST removal and validation works.

A summary of primary soil samples for the works are outlined as follows:

- A total of 12 primary soil samples were collected from the UST excavation walls and base and beneath associated fuel infrastructure and submitted to a NATA registered laboratory for analysis of TPH, BTEX and lead
- A total of 3 primary soil samples were collected from the excavated tank sands/ soils and submitted to a NATA registered laboratory for analysis of TPH, BTEX and lead
- A total of 2 primary soil samples were collected from the imported VENM and submitted to a NATA registered laboratory for analysis of metals, TPH, BTEX, OCPs and PCBs

All validation soil samples were reported not to have concentrations of chemicals of potential concern in exceedence of the selected site validation criteria.

Soil validation results are presented in **Tables 1 to 4**. Laboratory analytical reports are presented in **Appendix D** and the associated Chain of Custody (CoC) in **Appendix E**.

6 Quality Assurance/Quality Control (QA/QC)

Quality assurance and quality control data assessment was conducted in accordance with sampling procedures outline within the following documents:

- *Australian Standard: Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds. AS 4482.1 – 2005.*
- *Australian Standard: Guide to the investigation and sampling of sites with potentially contaminated soil. Part 2: Volatile Compounds. AS 4482.2 – 1997.*

6.1 Field QA/QC

6.1.1 Field Duplicate Samples

Intra and inter-laboratory duplicate samples were collected for analysis at a ratio of 1:10 and 1:20, respectively. The following table lists the primary samples and associated field duplicate (intra/inter-laboratory) samples collected during the validation program:

Table 6 Primary and Field Duplicate Samples

Primary Sample	Intra-laboratory Sample	Inter-laboratory Sample
SP1	QC1	QC1a
IF1	QC2	QC2a

A total of 17 primary samples were submitted to the laboratory for a combination of TPH, BTEX, metals, OCP and PCB analysis. The intra (QC1 and QC2) and inter-laboratory (QC1a and QC2a) comparisons for these analytes were within the acceptable 50% Relative Percentage Difference (RPD) with the following exceptions:

- Sample pair IF1/QC2:
 - o 67% RPD for mercury
 - o 66% RPD for nickel
- Sample pair IF1/QC2a:
 - o 67% RPD for mercury
 - o 91% RPD for nickel

RPD exceedences for both sample pairs are considered due to low laboratory concentrations resulting in exaggerated RPD calculations.

Intra/inter-laboratory sample concentrations and RPD calculations are presented in **Tables 1 to 4**.

6.1.2 Trip Blanks, Trip Spikes and Equipment Rinsate Blanks

Trip Blanks

Trip Blanks are used to monitor potential contamination during storage and transport of samples. One Trip Blank was prepared by the primary laboratory and stored in with the other samples throughout sampling and transport. The trip sample was submitted for laboratory analysis of TPH C₆-C₉ and BTEX.

No analytes were reported in the trip blank, therefore indicating no evidence of cross contamination during storage and transportation of samples. Trip Blank laboratory results are presented in **Table 2**.

Trip Spikes

Trip Spikes are used to monitor potential volatile loss during storage and transport of samples. One Trip Blank was prepared by the primary laboratory and stored in with the other samples throughout sampling and transport. The Trip Spike was submitted for laboratory analysis of BTEX.

The recoveries within the Trip Spike were reported to be within the acceptable limit of 70 - 130%. Trip Spike laboratory results are presented in **Table 2**.

Equipment Rinsate Blanks

An Equipment Rinsate Blank was collected on the day of soil validation sampling to ensure that there was no cross contamination of samples from the sampling equipment used. These were collected by passing laboratory supplied reagent water over sampling equipment (stainless steel trowel) and analysing the rinsate water for the same suite of compounds as the primary samples (TPH, BTEX and lead).

Laboratory results reported all concentrations within the Equipment Rinsate Blank to be below laboratory detection limits with the exception of lead (30 ug/L). Given that lead concentrations within the validation soil samples were below validation criteria, this result is considered anomalous and not to effect the validation data or conclusions drawn from it.

The laboratory results for field QA/QC data are presented in **Tables 1 to 4**. Laboratory analytical reports are presented in **Appendix D**.

6.2 Laboratory QA/QC

Envirolab was engaged as the primary laboratory for soil samples whilst SGS was engaged to act as the secondary laboratory for the analysis of inter-laboratory duplicate samples.

6.2.1 Sample handling and holding times

Chain of custody (COC) forms were signed and returned by the relevant laboratory on receipt of all samples, confirming that they were received in a satisfactory condition and within the required holding times. Copies of all COC's are included within Appendix I of this report.

Envirolab (Primary Laboratory)

All primary samples along with duplicates, trip blank, trip blank, trip spike and equipment rinsate blank were received by Envirolab in the correct sample containers under the correct preservation techniques. This typically comprised eskies containing a mixture of ice and water to ensure temperatures remained at 4°C as outlined within Australian Standard 4482.1 – 2005 (Reference: 20).

As evident from the COC forms and laboratory reports, all samples were received and analysed by Envirolab within 3 days of sampling therefore ensuring that all analysis was conducted within the maximum sampling holding times as outlined within Australian Standard 4482.1 – 2005 (Reference: 20).

SGS (Secondary Laboratory)

The secondary laboratory was utilised for the analysis of inter-laboratory duplicate samples in order to provide a check on the analytical proficiency of the primary laboratory. All inter-laboratory duplicate samples were sent to the secondary laboratory under the correct handling and preservation methods. Analysis of split samples was conducted using the same analytical techniques as those used on the primary samples allowing comparability of results.

6.2.2 Assessment of Internal Laboratory QA/QC

Results of internal laboratory QA/QC are included within **Appendix D** of this report which include data from the following:

- Blanks;
- Duplicates; and
- Spikes;

RPD values greater than 50% while percentage recoveries less than 70% or greater than 130% were considered inadequate in terms of QA/QC.

Envirolab (Primary Laboratory)

Generally QA/QC data for the primary laboratory was deemed satisfactory with the exception of the following:

- Spike % recovery of:
 - o 62% for benzene – laboratory sample 29401-2
 - o 64% for m+p-xylene – laboratory sample 29401-2
 - o 64% for o-xylene – laboratory sample 29401-2



In these cases, all reported results for benzene and xylenes were below laboratory detection limits, therefore any discrepancy caused by lack of precision and accuracy within the laboratory is deemed insignificant and can be disregarded.

SGS (Secondary Laboratory)

All QA/QC controls within the secondary laboratory were deemed satisfactory.

In conclusion, the laboratory data reviewed by JFTA was found to be acceptable in terms of quality assurance.

6.3 Assessment of QA/QC

Based upon the review of all available quality assurance and quality control checks it is concluded that all samples analysed to date are of suitable quality for use and interpretation.

7 Summary and Conclusions

JFTA Environmental Solutions was commissioned by NSW Health to undertake underground storage tank removal and validation works at Hornsby Kuring-Gai Hospital, Hornsby NSW.

The objective of the works was to remove the 25,000 L underground storage tank, all associated fuel infrastructure and backfill sand/soils with the intention to validate the excavated material and resultant excavations.

Excavated tank backfill sands/soils were estimated at a volume of $\sim 75 \text{ m}^3$ and were stockpiled to the east of the tank pit prior to sampling. The final tank pit excavation measured 9 m x 3.5 m x 3.4 m deep ($\sim 110 \text{ m}^3$). 75 m^3 of imported fill material was brought to the site to account for the volume of the removed tank and concrete anchors.

A total of 12 primary soil samples were collected from the tank pit excavations and from beneath the fuel dispenser, fill point, fuel transfer lines and vent lines. Excavated soils were sampled at three locations from the stockpiled material and a further two samples were collected from the imported fill material.

Excavation validation samples and stockpile samples were submitted for laboratory analysis of total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes and lead. Validation samples collected from the imported fill material were analysed for total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, metals, organochlorine pesticides and polychlorinated biphenyls.

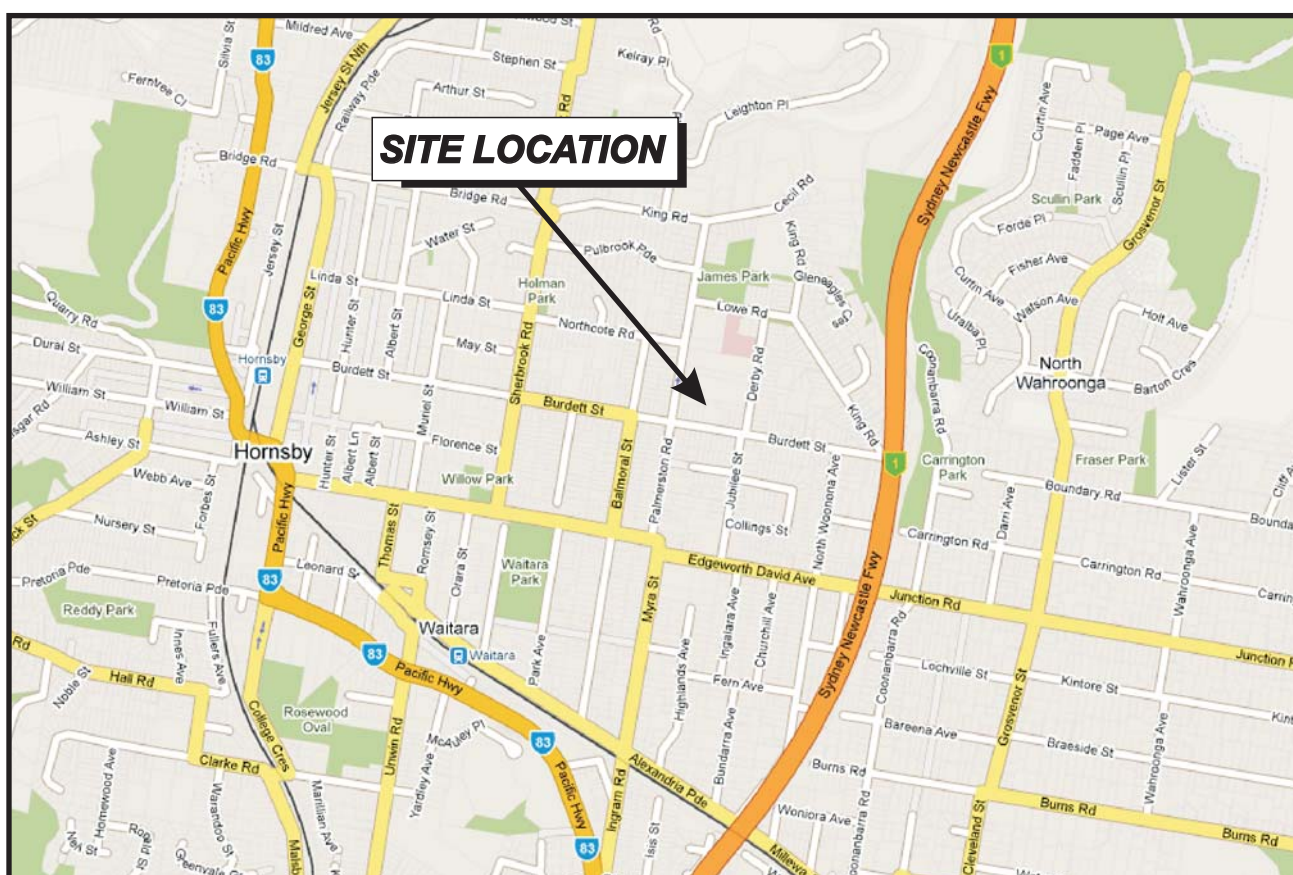
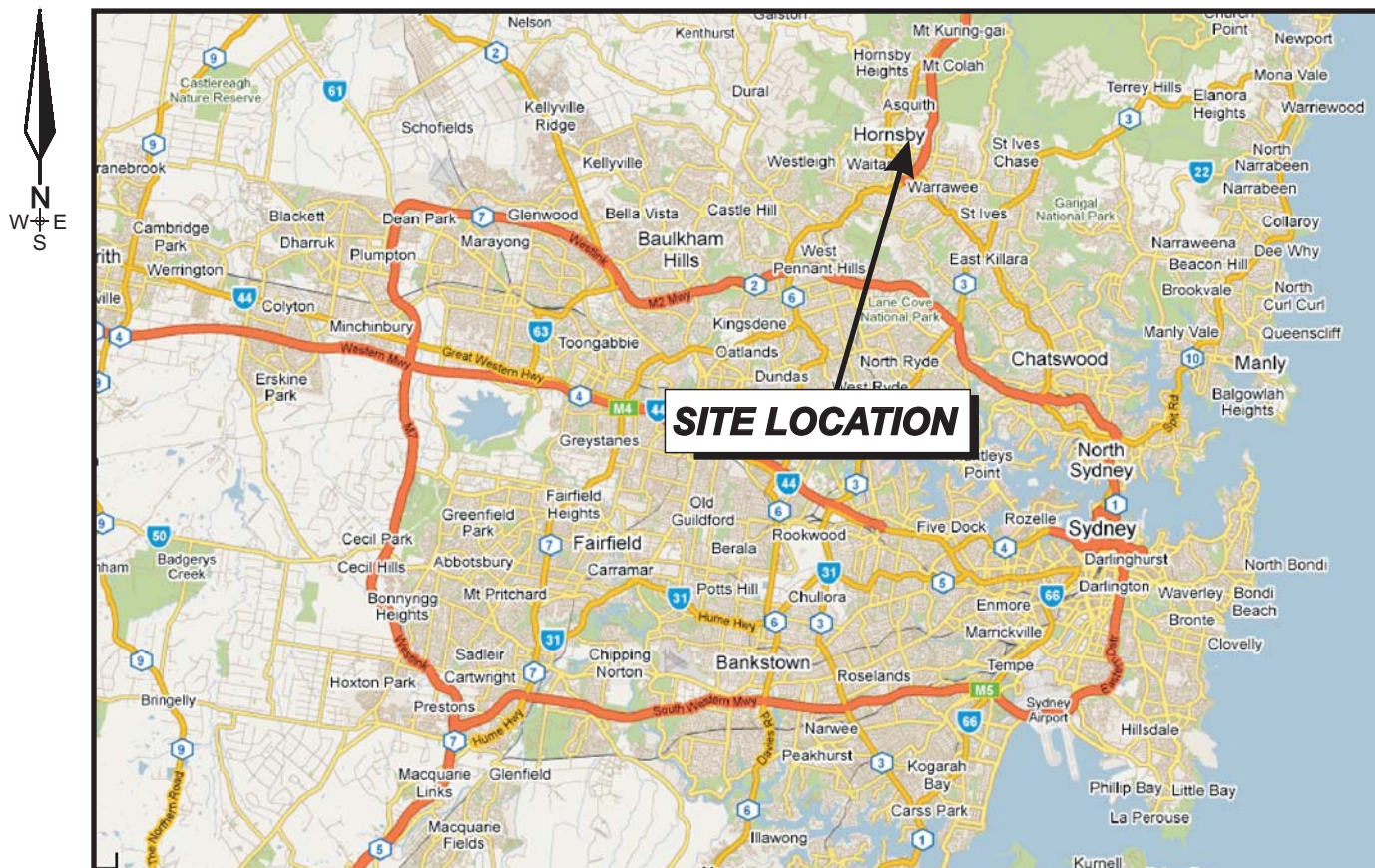
None of the soil samples were reported by the laboratory have concentrations of chemicals of potential concern in exceedence of the selected validation criteria and therefore were considered suitable to remain on-site.

All excavations were reinstated with a combination of validated excavated soils and imported fill material. The soils were compacted using the excavator and track rolled. A layer of topsoil was placed over the imported fill to allow plantation of grass seed and to return the area to a similar condition prior to commencement of the works.

8 Limitations

At the request of NSW Health, JFTA was engaged to conduct underground storage tank removal and validation works at the site located at Hornsby Hospital, Palmerston Rd, Hornsby NSW. This report was prepared on behalf of NSW Health. The conclusions presented in this report are relevant to the conditions of the site and the applicable Federal and/or State regulations in effect at the time of preparation of the report. Due to inherent variability in natural soils we cannot warrant that the overall condition of the site is identical or substantially similar to the representative samples. Actual conditions may differ from those inferred to exist. We do not make any representation or warranty that the conclusions in these reports will be applicable in the future as there may be changes in the conditions of the site, applicable regulations or other factors that would affect the conclusions contained in the reports. No person or organisation other than the current owner is entitled to rely upon any part of this report without the prior written consent of JFTA. Any other third party, not being the current owner, in using or relying on this report shall have no legal recourse against JFTA or its parents or subsidiaries and shall indemnify and defend them from all and against all claims arising out of, or in conjunction with, such use or reliance.

Figures



LOCALITY PLAN

HORNSBY

(Hornsby & Karingal Hospital)

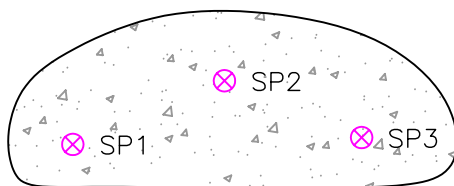
PALMERSTON RD & BURDETT ST
HORNSBY
NEW SOUTH WALES



FIGURE 1



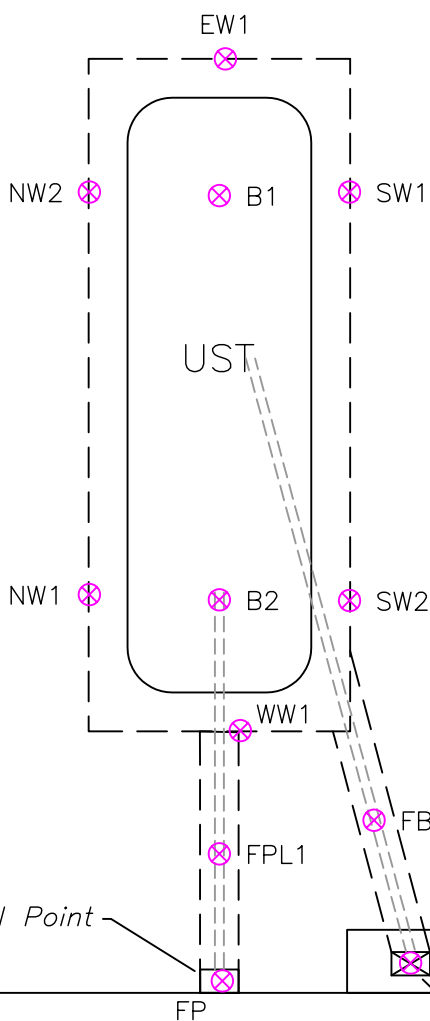
SHED



HOSPITAL
BUILDING

Grass surface

BUILDING 18



Fill Point

Canopy

Bowser

Bitumen carpark

LEGEND



STOCKPILE



VALIDATION SAMPLE LOCATION

— — EXCAVATION EXTENT



PALMERSTON RD & BURDETT ST
HORNSBY
NEW SOUTH WALES

**HORNSBY HOSPITAL
SAMPLE LOCATION PLAN**

Author: N.R.	Layer: 1—Fig 2		
Checked: D.F.	REV: 9 June 2009	REF: Hornsby Hospital	
Approved:	DRG No. N0427 .dwg	Job No.: 710466	FIG. 2



SHED

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	38mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	280mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	75mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	27mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	17mg/kg

HOSPITAL BUILDING

Grass surface

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	20mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	23mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	20mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	24mg/kg

BUILDING 18

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	21mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	31mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	210mg/kg

Analyte	Depth	Concentrate mg/kg
TPH C ₆ -C ₉	-	<25mg/kg
TPH C ₁₀ -C ₃₆	-	<250mg/kg
Benzene	-	<0.5mg/kg
Toluene	-	<0.5mg/kg
EthylBenzene	-	<1mg/kg
Xylenes	-	<3mg/kg
Lead	-	15mg/kg

LEGEND



STOCKPILE



VALIDATION SAMPLE LOCATION

--- EXCAVATION EXTENT

Fill Point

FP

Bitumen carpark

Canopy

Bowser



HORNSBY HOSPITAL SAMPLE ANALYSIS RESULTS

PALMERSTON RD & BURDETT ST

HORNSBY

NEW SOUTH WALES

Author: N.R.

Checked: D.F.

Approved:

Layer: 1-Fig 3

REV: 9 June 2009

DRG No. N0427 .dwg

REF: Hornsby Hospital

Job No.: 710466

FIG. 3



Results Tables

Table 1
Validation Analytical Results - Metals

Sample ID	Sample Date	Arsenic	Cadmium	Chromium	Copper (mg/kg)	Mercury	Nickel	Zinc	Lead
EW1	29-May-09	-	-	-	-	-	-	-	17
WW1	29-May-09	-	-	-	-	-	-	-	20
SW1	29-May-09	-	-	-	-	-	-	-	19
SW2	29-May-09	-	-	-	-	-	-	-	21
NW1	29-May-09	-	-	-	-	-	-	-	23
NW2	29-May-09	-	-	-	-	-	-	-	27
B1	29-May-09	-	-	-	-	-	-	-	24
B2	29-May-09	-	-	-	-	-	-	-	20
FB	29-May-09	-	-	-	-	-	-	-	210
FBL	29-May-09	-	-	-	-	-	-	-	31
FP	29-May-09	-	-	-	-	-	-	-	15
FPL	29-May-09	-	-	-	-	-	-	-	24
Stockpiled Excavated Material									
SP1	29-May-09	-	-	-	-	-	-	-	38
SP2	29-May-09	-	-	-	-	-	-	-	280
SP3	29-May-09	-	-	-	-	-	-	-	75
Imported Fill									
IF1	29-May-09	<4	<0.5	8	3	0.2	4	14	11
IF2	29-May-09	<4	<0.5	7	2	<0.1	1	11	11

Field QA/QC Results									
RB1 (µg/L)	29-May-09	-	-	-	-	-	-	-	38
SP1	29-May-09	-	-	-	-	-	-	-	38
QC1 (intra-laboratory duplicate of SP1)	29-May-09	-	-	-	-	-	-	-	31
RPD (%)									20%
IF1	29-May-09	<4	<0.5	8	3	0.2	4	14	11
QC2 (intra-laboratory duplicate of IF1)	29-May-09	<4	<0.5	7	3	<0.1	2	13	11
RPD (%)		NA	NA	13%	0%	67%	66%	7%	0%
IF1	29-May-09	<4	<0.5	8	3	0.2	4	14	11
QC2a (inter-laboratory duplicate of IF1)	29-May-09	<3	<0.3	6.7	2.4	<0.05	1.5	14	9.7
RPD (%)		NA	NA	18%	22%	67%	91%	0%	13%

SOIL ASSESSMENT CRITERIA

Acceptance Criteria [†]	200 ^{††}	40 ^{††}	200 ^{††}	2000 ^{††}	30 ^{††}	600 ^{††}	14000 ^{††}	600 ^{††}
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Notes:

All results in mg/kg

[†] NSW EPA Guidelines for Assessing Service Station Sites, December 1994 - Threshold concentrations for sensitive land use - soils.

^{††} NSW DEC Health based investigation levels (Guidelines for the NSW Site Auditor Scheme (2nd Edition) 2006, Column NEHF E - Parks, recreational, open space landuse).

- Not analysed

RPD - Relative Percent Difference

NA - Not Applicable

Exceeds assessment criteria

Bold - exceeds RPD acceptance criteria

Bold italic - laboratory detection limit used for calculation of RPD

Acceptance criteria for Cr VI has been used as a conservative approach to assess totola Cr in the imported fill material

Table 2
Validation Analytical Results - TPH, BTEX and Lead

Sample ID	Sample Date	Total Petroleum Hydrocarbons					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	m+p-xylene (mg/kg)	o-xylene (mg/kg)	Lead (mg/kg)
		C ₆ - C ₉	C ₁₀ - C ₁₄	C ₁₅ - C ₂₈	C ₂₉ - C ₃₆	Total C ₁₀ -C ₃₆						
EW1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	17
WW1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	20
SW1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	19
SW2	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	21
NW1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	23
NW2	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	27
B1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	24
B2	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	20
FB	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	210
FBL	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	31
FP	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	15
FPL	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	24
Stockpiled Excavated Material												
SP1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	38
SP2	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	280
SP3	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	75
Imported Fill												
IF1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	11
IF2	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	11

Field QA/QC Results												
Trip Spike	29-May-09	-	-	-	-	-	88%	93%	93%	93%	91%	-
Trip Blank	29-May-09	<25	-	-	-	-	<0.5	<0.5	<1	<2	<1	-
RB1 (µg/L)	29-May-09	<10	<50	<100	<100		<1	<1	<1	<2	<1	30
SP1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	38
QC1 (intra-laboratory duplicate of SP1)	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	31
RPD (%)		NA	NA	NA	NA	#	NA	NA	NA	NA	NA	20%
IF1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	11
QC2 (intra-laboratory duplicate of IF1)	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	11
RPD (%)		NA	NA	NA	NA	#	NA	NA	NA	NA	NA	0%
IF1	29-May-09	<25	<50	<100	<100	#	<0.5	<0.5	<1	<2	<1	11
QC2a (inter-laboratory duplicate of IF1)	29-May-09	<20	<20	<50	<50	#	<0.5	<0.5	<0.5	<1.5		9.7
RPD (%)		NA	NA	NA	NA	#	NA	NA	NA	NA	NA	13%

SOIL ASSESSMENT CRITERIA

Acceptance Criteria [†]	65		1000	1	1.4	3.1	14	600 ^{††}
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Notes:

All results in mg/kg

[†] NSW EPA Guidelines for Assessing Service Station Sites, December 1994 - Threshold concentrations for sensitive land use - soils.

^{††} NSW DEC Health based investigation levels (Guidelines for the NSW Site Auditor Scheme (2nd Edition) 2006, Column NEHF E - Parks, recreational, open space landuse).

- Not analysed

RPD - Relative Percent Difference

NA - Not Applicable

Exceeds assessment criteria

Bold - exceeds RPD acceptance criteria

Bold italic - laboratory detection limit used for calculation of RPD

Table 3
Validation Analytical Results - Organochlorine Pesticides (OCPs)

Sample ID	Sample Date	HCB	alpha-BHC	gamma-BHC	beta-BHC	Heptachlor	delta-BHC	Aldrin	Dieldrin	Heptachlor Epoxide	gamma-Chlordane	alpha-chlordane	Endosulfan I	pp-DDE	Dieldrin	Endrin	pp-DDD	Endosulfan II	pp-DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor	Total OCPs
mg/kg																							
Imported Fill																							
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
IF2	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#

Field QA/QC Results																							
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
QC2 (intra-laboratory duplicate of IF1)	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
RPD (%)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	#
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
QC2a (inter-laboratory duplicate of IF1)	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
RPD (%)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	#

SOIL ASSESSMENT CRITERIA

Acceptance Criteria [†]					20 ^{††}		20 ^{††}		100 ^{††}								400 ^{††}						
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Notes:

All results in mg/kg

[†] NSW EPA Guidelines for Assessing Service Station Sites, December 1994 - Threshold concentrations for sensitive land use - soils.^{††} NSW DEC Health based investigation levels (Guidelines for the NSW Site Auditor Scheme (2nd Edition) 2006, Column NEHF E - Parks, recreational, open space landuse).

- Not analysed

RPD - Relative Percent Difference

NA - Not Applicable

Exceeds assessment criteria**Bold** - exceeds RPD acceptance criteria**Bold italic** - laboratory detection limit used for calculation of RPD

Table 4
Validation Analytical Results - Polychlorinated Biphenyls (PCBS)

Sample ID	Sample Date	Arochlor 1016 (mg/kg)	Arochlor 1232 (mg/kg)	Arochlor 1242 (mg/kg)	Arochlor 1248 (mg/kg)	Arochlor 1254 (mg/kg)	Arochlor 1260 (mg/kg)	Total PCBs (mg/kg)
Imported Fill								
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
IF2	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#

Field QA/QC Results								
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
QC2 (intra-laboratory duplicate of IF1)	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
RPD (%)		NA	NA	NA	NA	NA	NA	#
IF1	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
QC2a (inter-laboratory duplicate of IF1)	29-May-09	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	#
RPD (%)		NA	NA	NA	NA	NA	NA	#

SOIL ASSESSMENT CRITERIA

Acceptance Criteria [†]	-	-	-	-	-	-	-	20 ^{††}
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Notes:

All results in mg/kg

[†] NSW EPA Guidelines for Assessing Service Station Sites, December 1994 - Threshold concentrations for sensitive land use - soils.^{††} NSW DEC Health based investigation levels (Guidelines for the NSW Site Auditor Scheme (2nd Edition) 2006, Column NEHF E - Parks, recreational, open space landuse).

- Not analysed

RPD - Relative Percent Difference

NA - Not Applicable

Exceeds assessment criteria

Bold - exceeds RPD acceptance criteria***Bold italic*** - laboratory detection limit used for calculation of RPD



Photographs



Photograph 1: Fuel Dispenser, Canopy and Remote Fill Point – facing southwest



Photograph 2: Area of UST – facing west



Photograph 3: UST Dip point – facing south



Photograph 4: Exposed UST – facing east



Photograph 5: UST Excavation- facing east



Photograph 6: Reinstatement of Excavation with Imported VENM – facing west



Photograph 7: Completed UST Removal and Validation Site – facing east



Appendix A References

References

1. *Contaminated Sites: Sampling Design Guidelines*, NSW EPA 1995.
2. *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA 1997.
3. *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd edition)*, DEC 2006.
4. *Contaminated Sites: Guidelines for Assessing Service Station Sites*, NSW EPA 1994.



Appendix B Tank Destruction Certificate

KNIGHT'S SYNDICATE PTY. LTD.

ABN 66 320 664 665

Registered Office/ Quarry Recycling Plant:
105 Schofields Rd. Rouse Hill N.S.W. 2155
Telephone (02) 9629 5564 Fax (02) 9629 555

29th May 2009

KNIGHT'S SYNDICATE PTY LTD, 105 SCHOFIELDS RD ROUSE HILL NSW 2155
ABN 66 320 664 665 (THE COMPANY), acknowledges and agrees

JFTA Pty Ltd

that all risk and title in the 1 x type 25 ug tank
ex Hornsby Hospital Burdett St Hornsby
passes to (THE COMPANY) from

JFTA Pty Ltd

The tanks were transported by us/you for a safe and legal disposal at our quarry,
105 SCHOFIELDS ROAD ROUSE HILL N.S.W. 2155

They will not be sold for any purpose.



the company seal of
KNIGHT'S SYNDICATE PTY LTD
was hereunto affixed by
J.T. KNIGHT
29th May 2009



Appendix C VENM Certificate

24 June 2009

Att: Daniel Fox

RE: CRUSHED SANDSTONE CLASSIFICATION

Dear Daniel,

I refer to your request regarding the status of the sandstone that is being used in your recent project. The material in question is regarded as Virgin Excavated Natural Material (VENM). In this regard, VENM is defined by the Department of Environment & Conservation (DEC) as:

“Virgin excavated natural material (e.g. clay, gravel, sand, soil and rock) that is not mixed with any other waste and that:

1. Has been excavated from areas that are not contaminated, as the result of industrial, commercial, mining or agricultural activities, with manufactured chemicals, and that does not contain sulphidic ores or soils, or
2. Consists of excavated natural materials that meet such criteria as may be approved by the EPA.”

Further in this regard, VENM is not regarded as waste and there is no requirement to hold or amend a license to that effect. I trust this satisfies your requirements, and if you have any other comments or enquiries, please don't hesitate to contact me on 0425 282 208 or 02 9601 2555.

Yours faithfully

WARRINGAH GRAVEL AND STONE PTY LTD

Floyde Gilbert
Quality Assurance Officer



Appendix D Laboratory Analytical Reports



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 29401

Client:

JFTA

Locked Bag 10
Moorebank
NSW 2170

Attention: Daniel Fox

Sample log in details:

Your Reference:	<u>710466, Hornsby Hospital</u>
No. of samples:	21 Soils, 1 Water
Date samples received:	01/06/09
Date completed instructions received:	01/06/09

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:	4/06/09
Date of Preliminary Report:	Not Issued
Issue Date:	4/06/09

NATA accreditation number 2901. This document shall not be reproduced except in full.
This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025.
Tests not covered by NATA are denoted with *.

Results Approved By:


Jacinta Hurst
Operations Manager

EnviroLab Reference: 29401
Revision No: R 00



vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-1 EW1 29/05/2009 Soil	29401-2 WW1 29/05/2009 Soil	29401-3 SW1 29/05/2009 Soil	29401-4 SW2 29/05/2009 Soil	29401-5 NW1 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
vTPH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	87	93	91	90	89

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-6 NW2 29/05/2009 Soil	29401-7 B1 29/05/2009 Soil	29401-8 B2 29/05/2009 Soil	29401-9 FB 29/05/2009 Soil	29401-10 FBL 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
vTPH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	98	90	87	92	83

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-11 FP 29/05/2009 Soil	29401-12 FPL 29/05/2009 Soil	29401-13 SP1 29/05/2009 Soil	29401-14 SP2 29/05/2009 Soil	29401-15 SP3 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
vTPH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	80	84	91	90	88

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-16 IF1 29/05/2009 Soil	29401-17 IF2 29/05/2009 Soil	29401-19 Trip Spike 29/05/2009 Soil	29401-20 Trip Blank 29/05/2009 Soil	29401-21 QC1 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	4/06/2009
vTPH C ₆ - C ₉	mg/kg	<25	<25	[NA]	<25	<25
Benzene	mg/kg	<0.5	<0.5	88%	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	93%	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	93%	<1.0	<1.0
m+p-xylene	mg/kg	<2.0	<2.0	93%	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	91%	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	87	87	95	85	86

vTPH & BTEX in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-22 QC2 29/05/2009 Soil
Date extracted	-	3/06/2009
Date analysed	-	4/06/2009
vTPH C ₆ - C ₉	mg/kg	<25
Benzene	mg/kg	<0.5
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1.0
m+p-xylene	mg/kg	<2.0
o-Xylene	mg/kg	<1.0
Surrogate aaa-Trifluorotoluene	%	91

sTPH in Soil (C10-C36) Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-1 EW1 29/05/2009 Soil	29401-2 WW1 29/05/2009 Soil	29401-3 SW1 29/05/2009 Soil	29401-4 SW2 29/05/2009 Soil	29401-5 NW1 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	88	90	86	85	88

sTPH in Soil (C10-C36) Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-6 NW2 29/05/2009 Soil	29401-7 B1 29/05/2009 Soil	29401-8 B2 29/05/2009 Soil	29401-9 FB 29/05/2009 Soil	29401-10 FBL 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	85	84	85	86	86

sTPH in Soil (C10-C36) Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-11 FP 29/05/2009 Soil	29401-12 FPL 29/05/2009 Soil	29401-13 SP1 29/05/2009 Soil	29401-14 SP2 29/05/2009 Soil	29401-15 SP3 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	86	88	87	85	86

sTPH in Soil (C10-C36) Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-16 IF1 29/05/2009 Soil	29401-17 IF2 29/05/2009 Soil	29401-21 QC1 29/05/2009 Soil	29401-22 QC2 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009
TPH C10 - C14	mg/kg	<50	<50	<50	<50
TPH C15 - C28	mg/kg	<100	<100	<100	<100
TPH C29 - C36	mg/kg	<100	<100	<100	<100
Surrogate o-Terphenyl	%	85	87	87	85

Organochlorine Pesticides in soil				
Our Reference:	UNITS	29401-16	29401-17	29401-22
Your Reference	-----	IF1	IF2	QC2
Date Sampled	-----	29/05/2009	29/05/2009	29/05/2009
Type of sample		Soil	Soil	Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009
HCB	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 TCLMX	%	86	87	88

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-16 IF1 29/05/2009 Soil	29401-17 IF2 29/05/2009 Soil	29401-22 QC2 29/05/2009 Soil
Date extracted	-	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009
Arochlor 1016	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	87	88

Acid Extractable metals in soil						
Our Reference:	UNITS	29401-1	29401-2	29401-3	29401-4	29401-5
Your Reference	-----	EW1	WW1	SW1	SW2	NW1
Date Sampled	-----	29/05/2009	29/05/2009	29/05/2009	29/05/2009	29/05/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009	4/06/2009	4/06/2009
Lead	mg/kg	17	20	19	21	23

Acid Extractable metals in soil						
Our Reference:	UNITS	29401-6	29401-7	29401-8	29401-9	29401-10
Your Reference	-----	NW2	B1	B2	FB	FBL
Date Sampled	-----	29/05/2009	29/05/2009	29/05/2009	29/05/2009	29/05/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009	4/06/2009	4/06/2009
Lead	mg/kg	27	24	20	210	31

Acid Extractable metals in soil						
Our Reference:	UNITS	29401-11	29401-12	29401-13	29401-14	29401-15
Your Reference	-----	FP	FPL	SP1	SP2	SP3
Date Sampled	-----	29/05/2009	29/05/2009	29/05/2009	29/05/2009	29/05/2009
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009	4/06/2009	4/06/2009
Lead	mg/kg	15	24	38	280	75

Acid Extractable metals in soil					
Our Reference:	UNITS	29401-16	29401-17	29401-21	29401-22
Your Reference	-----	IF1	IF2	QC1	QC2
Date Sampled	-----	29/05/2009	29/05/2009	29/05/2009	29/05/2009
Type of sample		Soil	Soil	Soil	Soil
Date digested	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Date analysed	-	4/06/2009	4/06/2009	4/06/2009	4/06/2009
Arsenic	mg/kg	<4	<4	[NA]	<4
Cadmium	mg/kg	<0.5	<0.5	[NA]	<0.5
Chromium	mg/kg	8	7	[NA]	7
Copper	mg/kg	3	2	[NA]	3
Lead	mg/kg	11	11	31	11
Mercury	mg/kg	0.2	<0.1	[NA]	<0.1
Nickel	mg/kg	4	1	[NA]	2
Zinc	mg/kg	14	11	[NA]	13

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-1 EW1 29/05/2009 Soil	29401-2 WW1 29/05/2009 Soil	29401-3 SW1 29/05/2009 Soil	29401-4 SW2 29/05/2009 Soil	29401-5 NW1 29/05/2009 Soil
Date prepared	-	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Moisture	%	15	21	17	20	19

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-6 NW2 29/05/2009 Soil	29401-7 B1 29/05/2009 Soil	29401-8 B2 29/05/2009 Soil	29401-9 FB 29/05/2009 Soil	29401-10 FBL 29/05/2009 Soil
Date prepared	-	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Moisture	%	16	17	15	23	21

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-11 FP 29/05/2009 Soil	29401-12 FPL 29/05/2009 Soil	29401-13 SP1 29/05/2009 Soil	29401-14 SP2 29/05/2009 Soil	29401-15 SP3 29/05/2009 Soil
Date prepared	-	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Moisture	%	18	22	23	21	20

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	29401-16 IF1 29/05/2009 Soil	29401-17 IF2 29/05/2009 Soil	29401-20 Trip Blank 29/05/2009 Soil	29401-21 QC1 29/05/2009 Soil	29401-22 QC2 29/05/2009 Soil
Date prepared	-	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009	3/06/20093/0 6/2009
Date analysed	-	3/06/2009	3/06/2009	3/06/2009	3/06/2009	3/06/2009
Moisture	%	12	11	0.60	20	12

vTPH & BTEX in Water		
Our Reference:	UNITS	29401-18
Your Reference	-----	RB1
Date Sampled	-----	29/05/2009
Type of sample		Water
Date extracted	-	2/06/2009
Date analysed	-	2/06/2009
TPH C ₆ - C ₉	µg/L	<10
Benzene	µg/L	<1.0
Toluene	µg/L	<1.0
Ethylbenzene	µg/L	<1.0
m+p-xylene	µg/L	<2.0
o-xylene	µg/L	<1.0
Surrogate Dibromofluoromethane	%	94
Surrogate toluene-d8	%	103
Surrogate 4-BFB	%	97

sTPH in Water (C10-C36)		
Our Reference:	UNITS	29401-18
Your Reference	-----	RB1
Date Sampled	-----	29/05/2009
Type of sample		Water
Date extracted	-	2/06/2009
Date analysed	-	3/06/2009
TPH C ₁₀ - C ₁₄	µg/L	<50
TPH C ₁₅ - C ₂₈	µg/L	<100
TPH C ₂₉ - C ₃₆	µg/L	<100
Surrogate o-Terphenyl	%	102

Metals in Water - Dissolved		
Our Reference:	UNITS	29401-18
Your Reference	-----	RB1
Date Sampled	-----	29/05/2009
Type of sample		Water
Lead - Dissolved	mg/L	<0.030

Method ID	Methodology Summary
GC.16	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.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC-5	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTPH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			3/06/2009	29401-1	3/06/2009 3/06/2009	LCS-1	3/06/2009
Date analysed	-			3/06/2009	29401-1	3/06/2009 3/06/2009	LCS-1	3/06/2009
vTPH C ₆ - C ₉	mg/kg	25	GC.16	<25	29401-1	<25 <25	LCS-1	81%
Benzene	mg/kg	0.5	GC.16	<0.5	29401-1	<0.5 <0.5	LCS-1	71%
Toluene	mg/kg	0.5	GC.16	<0.5	29401-1	<0.5 <0.5	LCS-1	93%
Ethylbenzene	mg/kg	1	GC.16	<1.0	29401-1	<1.0 <1.0	LCS-1	85%
m+p-xylene	mg/kg	2	GC.16	<2.0	29401-1	<2.0 <2.0	LCS-1	78%
o-Xylene	mg/kg	1	GC.16	<1.0	29401-1	<1.0 <1.0	LCS-1	78%
Surrogate aaa-Trifluorotoluene	%		GC.16	99	29401-1	87 63 RPD: 32	LCS-1	97%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTPH in Soil (C ₁₀ -C ₃₆)						Base II Duplicate II %RPD		
Date extracted	-			03/06/09	29401-1	3/06/2009 3/06/2009	LCS-1	03/06/09
Date analysed	-			03/06/09	29401-1	3/06/2009 3/06/2009	LCS-1	03/06/09
TPH C ₁₀ - C ₁₄	mg/kg	50	GC.3	<50	29401-1	<50 <50	LCS-1	84%
TPH C ₁₅ - C ₂₈	mg/kg	100	GC.3	<100	29401-1	<100 <100	LCS-1	94%
TPH C ₂₉ - C ₃₆	mg/kg	100	GC.3	<100	29401-1	<100 <100	LCS-1	89%
Surrogate o-Terphenyl	%		GC.3	86	29401-1	88 88 RPD: 0	LCS-1	86%

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	-			03/06/09	[NT]	[NT]	LCS-2	03/06/09
Date analysed	-			04/06/09	[NT]	[NT]	LCS-2	04/06/09
HCB	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	82%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	91%
Heptachlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	73%
delta-BHC	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	80%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	85%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	97%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Dieldrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	87%
Endrin	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	79%
pp-DDD	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	98%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	LCS-2	79%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-5	86	[NT]	[NT]	LCS-2	90%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			03/06/09	[NT]	[NT]	LCS-2	03/06/09
Date analysed	-			04/06/09	[NT]	[NT]	LCS-2	04/06/09
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	LCS-2	104%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		GC-6	86	[NT]	[NT]	LCS-2	98%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			03/06/09	29401-1	3/06/2009 3/06/2009	LCS-1	03/06/09
Date analysed	-			04/06/09	29401-1	4/06/2009 4/06/2009	LCS-1	04/06/09
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4	[NT]	[NT]	LCS-1	103%
Cadmium	mg/kg	0.5	Metals.20 ICP-AES	<0.5	[NT]	[NT]	LCS-1	101%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	105%
Copper	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	106%
Lead	mg/kg	1	Metals.20 ICP-AES	<1	29401-1	17 19 RPD: 11	LCS-1	104%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.1	[NT]	[NT]	LCS-1	110%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	102%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Zinc	mg/kg	1	Metals.20 ICP-AES	<1	[NT]	[NT]	LCS-1	107%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Moisture				
Date prepared	-			3/06/2009
Date analysed	-			3/06/2009
Moisture	%	0.1	LAB.8	<0.10

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTPH & BTEX in Water						Base II Duplicate II %RPD		
Date extracted	-			2/06/2009	[NT]	[NT]	LCS-W1	2/06/2009
Date analysed	-			2/06/2009	[NT]	[NT]	LCS-W1	2/06/2009
TPH C ₆ - C ₉	µg/L	10	GC.16	<10	[NT]	[NT]	LCS-W1	78%
Benzene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	83%
Toluene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	78%
Ethylbenzene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	77%
m+p-xylene	µg/L	2	GC.16	<2.0	[NT]	[NT]	LCS-W1	77%
o-xylene	µg/L	1	GC.16	<1.0	[NT]	[NT]	LCS-W1	76%
Surrogate	%		GC.16	104	[NT]	[NT]	LCS-W1	75%
Dibromofluoromethane								
Surrogate toluene-d8	%		GC.16	103	[NT]	[NT]	LCS-W1	100%
Surrogate 4-BFB	%		GC.16	101	[NT]	[NT]	LCS-W1	105%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTPH in Water (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			2/06/09	[NT]	[NT]	LCS-W1	2/06/09
Date analysed	-			3/06/09	[NT]	[NT]	LCS-W1	3/06/09
TPH C ₁₀ - C ₁₄	µg/L	50	GC.3	<50	[NT]	[NT]	LCS-W1	71%
TPH C ₁₅ - C ₂₈	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W1	107%
TPH C ₂₉ - C ₃₆	µg/L	100	GC.3	<100	[NT]	[NT]	LCS-W1	95%
Surrogate o-Terphenyl	%		GC.3	106	[NT]	[NT]	LCS-W1	112%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in Water - Dissolved						Base II Duplicate II %RPD		
Lead - Dissolved	mg/L	0.03	Metals.20 ICP-AES	<0.030	[NT]	[NT]	LCS-W1	101%
QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery			
Date extracted	-	29401-11	3/06/2009 3/06/2009	29401-2	3/06/2009			
Date analysed	-	29401-11	3/06/2009 3/06/2009	29401-2	3/06/2009			
vTPH C ₆ - C ₉	mg/kg	29401-11	<25 <25	29401-2	70%			
Benzene	mg/kg	29401-11	<0.5 <0.5	29401-2	62%			
Toluene	mg/kg	29401-11	<0.5 <0.5	29401-2	85%			
Ethylbenzene	mg/kg	29401-11	<1.0 <1.0	29401-2	75%			
m+p-xylene	mg/kg	29401-11	<2.0 <2.0	29401-2	64%			
o-Xylene	mg/kg	29401-11	<1.0 <1.0	29401-2	64%			
Surrogate aaa-Trifluorotoluene	%	29401-11	80 84 RPD: 5	29401-2	94%			
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery			
Date extracted	-	29401-11	3/06/2009 3/06/2009	29401-2	03/06/09			
Date analysed	-	29401-11	3/06/2009 3/06/2009	29401-2	03/06/09			
TPH C ₁₀ - C ₁₄	mg/kg	29401-11	<50 <50	29401-2	81%			
TPH C ₁₅ - C ₂₈	mg/kg	29401-11	<100 <100	29401-2	92%			
TPH C ₂₉ - C ₃₆	mg/kg	29401-11	<100 <100	29401-2	87%			
Surrogate o-Terphenyl	%	29401-11	86 85 RPD: 1	29401-2	85%			
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery			
Date digested	-	29401-11	3/06/2009 3/06/2009	29401-17	03/06/09			
Date analysed	-	29401-11	4/06/2009 4/06/2009	29401-17	04/06/09			
Arsenic	mg/kg	[NT]	[NT]	29401-17	101%			
Cadmium	mg/kg	[NT]	[NT]	29401-17	99%			
Chromium	mg/kg	[NT]	[NT]	29401-17	101%			
Copper	mg/kg	[NT]	[NT]	29401-17	104%			
Lead	mg/kg	29401-11	15 14 RPD: 7	29401-17	99%			
Mercury	mg/kg	[NT]	[NT]	29401-17	110%			
Nickel	mg/kg	[NT]	[NT]	29401-17	101%			
Zinc	mg/kg	[NT]	[NT]	29401-17	101%			

Client Reference: 710466, Hornsby Hospital

QUALITY CONTROL Metals in Water - Dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Lead - Dissolved	mg/L	[NT]	[NT]	29401-18	96%

Envirolab Reference: 29401
Revision No: R 00



Report Comments:

Asbestos was analysed by Approved Identifier: Not applicable for this job

INS: Insufficient sample for this test NT: Not tested PQL: Practical Quantitation Limit <: Less than >: Greater than

RPD: Relative Percent Difference NA: Test not required LCS: Laboratory Control Sample NR: Not requested

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 batches of 20. The duplicate sample RPD and matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for

SVOC and speciated phenols is acceptable. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

ANALYTICAL REPORT

9 June 2009

JFTA

76 Heathcote Rd
MOOREBANK
NSW 2170

Attention: Daniel Fox

Your Reference: 710466 - Hornsby Hospital

Our Reference: SE69610

Samples: 2 Soils

Received: 1/6/09

Preliminary Report Sent: Not Issued

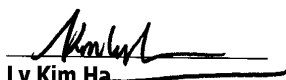
These samples were analysed in accordance with your written instructions.

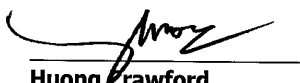
For and on Behalf of:

SGS ENVIRONMENTAL SERVICES

Client Services:	Simon Matthews	Simon.Matthews@sgs.com
Sample Receipt:	Angela Mamalicos	AU.SampleReceipt.Sydney@sgs.com
Laboratory Manager:	Edward Ibrahim	Edward.Ibrahim@sgs.com

Results Approved and/or Authorised by:


Ly Kim Ha
Organics Signatory


Huong Crawford
Metals Signatory



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BTEX in Soil		
Our Reference:	UNITS	SE69610-2
Your Reference	-----	QC2a
Sample Matrix	-----	Soil
Date Sampled		29/05/2009
Date Extracted (BTEX)		4/06/2009
Date Analysed (BTEX)		4/06/2009
Benzene	mg/kg	<0.5
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<0.5
Total Xylenes	mg/kg	<1.5
BTEX Surrogate (%)	%	77



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TRH in soil with..C6-C9 by P/T Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE69610-2 QC2a Soil 29/05/2009
Date Extracted (TRH C6-C9 PT)		4/06/2009
Date Analysed (TRH C6-C9 PT)		4/06/2009
TRH C ₆ - C ₉ P&T	mg/kg	<20
Date Extracted (TRH C10-C36)		4/06/2009
Date Analysed (TRH C10-C36)		4/06/2009
TRH C ₁₀ - C ₁₄	mg/kg	<20
TRH C ₁₅ - C ₂₈	mg/kg	<50
TRH C ₂₉ - C ₃₆	mg/kg	<50

OC Pesticides in Soil Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE69610-2 QC2a Soil 29/05/2009
Date Extracted		4/06/2009
Date Analysed		4/06/2009
HCB	mg/kg	<0.1
<i>alpha</i> -BHC	mg/kg	<0.1
gamma-BHC (Lindane)	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
Aldrin	mg/kg	<0.1
<i>beta</i> -BHC	mg/kg	<0.1
<i>delta</i> -BHC	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
<i>o,p</i> -DDE	mg/kg	<0.1
<i>alpha</i> -Endosulfan	mg/kg	<0.1
<i>trans</i> -Chlordane	mg/kg	<0.1
<i>cis</i> -Chlordane	mg/kg	<0.1
<i>trans</i> -Nonachlor	mg/kg	<0.1
<i>p,p</i> -DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
<i>o,p</i> -DDD	mg/kg	<0.1
<i>o,p</i> -DDT	mg/kg	<0.1
<i>beta</i> -Endosulfan	mg/kg	<0.1
<i>p,p</i> -DDD	mg/kg	<0.1
<i>p,p</i> -DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Endrin Ketone	mg/kg	<0.1
2,4,5,6-Tetrachloro-m-xylene (<i>Surrogate</i>)	%	99



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PCBs in Soil Our Reference: Your Reference Sample Matrix Date Sampled	UNITS ----- -----	SE69610-2 QC2a Soil 29/05/2009
Date Extracted		4/06/2009
Date Analysed		4/06/2009
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Arochlor 1262	mg/kg	<0.1
Arochlor 1268	mg/kg	<0.1
Total Positive PCB	mg/kg	<0.90
PCB_Surrogate 1	%	99



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Metals in Soil by ICP-OES		
Our Reference:	UNITS	SE69610-2
Your Reference	-----	QC2a
Sample Matrix	-----	Soil
Date Sampled		29/05/2009
Date Extracted (Metals)		5/06/2009
Date Analysed (Metals)		5/06/2009
Arsenic	mg/kg	<3
Cadmium	mg/kg	<0.3
Chromium	mg/kg	6.7
Copper	mg/kg	2.4
Lead	mg/kg	9.7
Nickel	mg/kg	1.5
Zinc	mg/kg	14

Mercury Cold Vapor/Hg Analyser		
Our Reference:	UNITS	SE69610-2
Your Reference	-----	QC2a
Sample Matrix	-----	Soil
Date Sampled		29/05/2009
Date Extracted (Mercury)		4/06/2009
Date Analysed (Mercury)		4/06/2009
Mercury	mg/kg	<0.05

Moisture	UNITS	SE69610-2
Our Reference:	-----	QC2a
Your Reference	-----	Soil
Sample Matrix		
Date Sampled		29/05/2009
Date Analysed (moisture)		2/06/2009
Moisture	%	12

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



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank
BTEX in Soil				
Date Extracted (BTEX)				04/06/09
Date Analysed (BTEX)				04/06/09
Benzene	mg/kg	0.5	SEO-018	<0.5
Toluene	mg/kg	0.5	SEO-018	<0.5
Ethylbenzene	mg/kg	0.5	SEO-018	<0.5
Total Xylenes	mg/kg	1.5	SEO-018	<1.5
BTEX Surrogate (%)	%	0	SEO-018	77

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
TRH in soil with..C6-C9 by P/T								
Date Extracted (TRH C6-C9 PT)				04/06/09	[NT]	[NT]	LCS	04/06/09
Date Analysed (TRH C6-C9 PT)				04/06/09	[NT]	[NT]	LCS	04/06/09
TRH C ₆ - C ₉ P&T	mg/kg	20	SEO-018	<20	[NT]	[NT]	LCS	105%
Date Extracted (TRH C10-C36)				04/06/09	[NT]	[NT]	LCS	04/06/09
Date Analysed (TRH C10-C36)				04/06/09	[NT]	[NT]	LCS	04/06/09
TRH C ₁₀ - C ₁₄	mg/kg	20	SEO-020	<20	[NT]	[NT]	LCS	88%
TRH C ₁₅ - C ₂₈	mg/kg	50	SEO-020	<50	[NT]	[NT]	LCS	100%
TRH C ₂₉ - C ₃₆	mg/kg	50	SEO-020	<50	[NT]	[NT]	LCS	86%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
OC Pesticides in Soil								
Date Extracted				04/06/09	[NT]	[NT]	LCS	04/06/09
Date Analysed				04/06/09	[NT]	[NT]	LCS	04/06/09
HCB	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>alpha</i> -BHC	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
gamma-BHC (Lindane)	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Heptachlor	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	114%
Aldrin	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	115%
<i>beta</i> -BHC	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>delta</i> -BHC	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	112%
Heptachlor Epoxide	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
OC Pesticides in Soil								
<i>o,p</i> -DDE	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>alpha</i> -Endosulfan	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>trans</i> -Chlordane	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>cis</i> -Chlordane	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>trans</i> -Nonachlor	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>p,p</i> -DDE	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Dieldrin	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	111%
Endrin	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	123%
<i>o,p</i> -DDD	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>o,p</i> -DDT	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>beta</i> -Endosulfan	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>p,p</i> -DDD	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
<i>p,p</i> -DDT	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	116%
Endosulfan Sulphate	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Methoxychlor	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Ketone	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
2,4,5,6-Tetrachloro-m-xy lene (<i>Surrogate</i>)	%	0	SEO-005	100	[NT]	[NT]	LCS	97%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
PCBs in Soil								
Date Extracted				04/06/09	[NT]	[NT]	LCS	04/06/09
Date Analysed				04/06/09	[NT]	[NT]	LCS	04/06/09
Arochlor 1016	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1260	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	LCS	88%
Arochlor 1262	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1268	mg/kg	0.1	SEO-005	<0.1	[NT]	[NT]	[NR]	[NR]
Total Positive PCB	mg/kg	0.9	SEO-005	<0.90	[NT]	[NT]	[NR]	[NR]
PCB_Surrogate 1	%	0	SEO-005	100	[NT]	[NT]	LCS	95%



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QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Metals in Soil by ICP-OES								
Date Extracted (Metals)				5/06/2009	[NT]	[NT]	SE69610-1	5/06/2009
Date Analysed (Metals)				5/06/2009	[NT]	[NT]	SE69610-1	5/06/2009
Arsenic	mg/kg	3	SEM-010	<3	[NT]	[NT]	SE69610-1	98%
Cadmium	mg/kg	0.3	SEM-010	<0.3	[NT]	[NT]	SE69610-1	100%
Chromium	mg/kg	0.3	SEM-010	<0.3	[NT]	[NT]	SE69610-1	98%
Copper	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	SE69610-1	98%
Lead	mg/kg	1	SEM-010	<1	[NT]	[NT]	SE69610-1	97%
Nickel	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	SE69610-1	98%
Zinc	mg/kg	0.5	SEM-010	<0.5	[NT]	[NT]	SE69610-1	98%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank	Duplicate Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Matrix Spike % Recovery Duplicate + %RPD
Mercury Cold Vapor/Hg Analyser								
Date Extracted (Mercury)				04/06/09	[NT]	[NT]	SE69610-1	04/06/09
Date Analysed (Mercury)				04/06/09	[NT]	[NT]	SE69610-1	04/06/09
Mercury	mg/kg	0.05	SEM-005	<0.05	[NT]	[NT]	SE69610-1	107%

QUALITY CONTROL	UNITS	LOR	METHOD	Blank
Hold sample- NO test required				
Sample on HOLD		[NT]		[NT]

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



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Result Codes

[INS] : Insufficient Sample for this test
[NR] : Not Requested
[NT] : Not tested

[RPD] : Relative Percentage Difference
* : Not part of NATA Accreditation
[N/A] : Not Applicable

Report Comments

Samples analysed as received. Solid samples expressed on a dry weight basis.

Date Organics extraction commenced:

NATA Corporate Accreditation No. 2562, Site No 4354

Note: Test results are not corrected for recovery (excluding Dioxins/Furans*)

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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Quality Control Protocol

Method Blank: An analyte free matrix to which all reagents are added in the same volume or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. A method blank is prepared every 20 samples.

Duplicate: A separate portion of a sample being analysed that is treated the same as the other samples in the batch. One duplicate is processed at least every 10 samples.

Surrogate Spike: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are added to samples before extraction to monitor extraction efficiency and percent recovery in each sample.

Internal Standard: Added to all samples requiring analysis for organics (where relevant) or metals by ICP after the extraction/digestion process; the compounds/elements serve to give a standard of retention time and/or response, which is invariant from run-to-run with the instruments.

Laboratory Control Sample: A known matrix spiked with compound(s) representative of the target analytes. It is used to document laboratory performance. When the results of the matrix spike analysis indicates a potential problem due to the sample matrix itself, the LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

Matrix Spike: An aliquot of sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Quality Acceptance Criteria

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



This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562 (4354). This report must not be reproduced except in full.



Appendix E Chain of Custody and Sample Receipts

CHAIN OF CUSTODY - Client

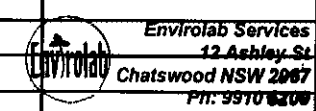
ENVIROLAB SERVICES

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Client: JFTA	Client Project Name and Number: Hornsby Hospital 710 466	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9958 5801 Fax: 02 9958 5803 E-mail: tnotaras@envirolabservices.com.au Contact: Tania Notaras
Project Mgr: DANIEL FOX	PO No.: 7100 3252	
Sampler: DANIEL FOX	Envirolab Services Quote No.: -	
Address: 76 HEATHCOTE RD MOOREBANK	Date results required:	
Email: daniel.f@jfta.com.au	Or choose: standard / 1 day / 2 day / <u>3</u> day	
Phone: 9827 9100 Fax:	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Sample Information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	TPH	BTEX	LEAD												Provide as much information about the sample as you can
1	EW1	29/5/09	S	Y	Y	X												
2	NW1																	
3	SW1																	
4	SW2																	
5	NW1																	
6	NW2																	
7	B1																	
8	B2																	
9	FB																	
10	FBL																	
11	FP																	
12	FPL																	
13	SP1																	
14	SP2																	
15	SP3																	



Job No: 28401
 Date received: 29/5/09
 Time received: 3:50
 Received by: SE
 Temp: Cool Ambient
 Closing: 10:00pm
 Security: Intact/Broken/None

Relinquished by (company): JFTA	Received by (company): ELCC	Samples Received: Cool or Ambient (circle one) Temperature Received at: (If applicable) Transported by: Hand delivered / courier Page No:
Print Name: DANIEL FOX	Print Name: SIMON GOLL	
Date & Time: 1/6/09 10am	Date & Time: 29/5/09	
Signature: [Signature]	Signature: [Signature]	

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Client: JFTA	Client Project Name and Number: Hornsby Hospital	Envirolab Services
Project Mgr: DANIEL FOX	710 466	12 Ashley St, Chatswood, NSW, 2067
Sampler: DANIEL FOX	PO No.: 7100 3252	Phone: 02 9958 5801
Address: 76 HEATHCOTE RD MOOREBANK	Envirolab Services Quote No.: -	Fax: 02 9958 5803
Email: daniel.f@jfta.com.au	Date results required:	E-mail: tnotaras@envirolabservices.com.au
Phone: 9827 9100 Fax:	Or choose: standard / 1 day / 2 day / 3 day	Contact: Tania Notaras
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

[illegible]



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:

JFTA
Locked Bag 10
Moorebank NSW 2170

ph: 9827 9100
Fax: 9827 9199

Attention: Daniel Fox

Sample log in details:

Your reference:
Envirolab Reference:
Date received:
Date results expected to be reported:

710466, Hornsby Hospital
29401
01/06/09
4/06/09

Samples received in appropriate condition for analysis:	YES
No. of samples provided	21 Soils, 1 Water
Turnaround time requested:	72hr
Temperature on receipt	Cool
Cooling Method:	Ice

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

~~ENVIRONMENTAL SERVICES~~

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Form: 302 - Chain of Custody-Client, Issued 14/02/08, Version 3, Page 1 of 1.



SAMPLE RECEIPT ADVICE (SRA)

1 June 2009

Client Details

Requested By : **Daniel Fox**
Client : JFTA
Contact : Daniel Fox
Address : 76 Heathcote Rd
Moorebank NSW 2170

Email : daniel.f@jfta.com.au
Telephone : 9827 9100
Facsimile :

Project : 710466 - Hornsby Hospital
Order Number :
Samples : 2 Soils

Laboratory Details

Laboratory : SGS Environmental Services
Manager : Edward Ibrahim
Address : Unit 16, 33 Maddox Street
Alexandria NSW 2015

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

Report No : **SE69610**
No. of Samples : 2
Due Date : 9/06/2009

Date Instructions Received : 1/06/2009
Sample Receipt Date : 1/6/09

Samples received in good order : YES
Samples received without headspace : YES
Upon receipt sample temperature : Cool
Sample containers provided by : Other Lab
Turnaround time requested : Standard

Samples received in correct container : YES
Sufficient quantity supplied : YES
Cooling Method : Ice Pack
Samples clearly Labelled : YES
Completed documentation received : YES

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

Comments

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

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



SAMPLE RECEIPT ADVICE (SRA) - continued

Client : JFTA
Project : 710466 - Hornsby Hospital

Report No : SE69610

Summary of Samples and Requested Analysis

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

Please indicate ASAP if your request differs from these details.

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

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

Sample No.	Description	Metals Prep, soil 8 HM	BTEX in Soil	TRH in soil with .C6-C9 by P/T	OC Pesticides in Soil	PCBs in Soil	Metals in Soil by ICP-OES	Mercury Cold Vapor/Hg Analyser	Hold sample-NO test required	Moisture
1	QC1a								X	
2	QC2a	X	X	X	X	X	X	X		X

Sample No.	Description
1	QC1a
2	QC2a