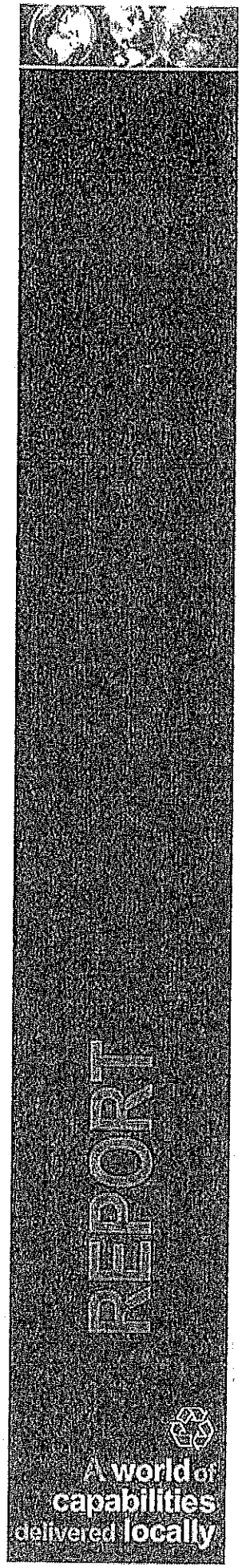
Appendix H

Report on Environmental Due Diligence Review and Advice (*Golder Associates*)



6 April 2009

REPORT ON ENVIRONMENTAL DUE DILIGENCE REVIEW AND ADVICE

FORMER CLAYTON WEST PRIMARY SCHOOL, 10 ALVINA STREET, OAKLEIGH SOUTH, VICTORIA

Submitted to:
Victorian Urban Development Authority
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Level 6, 120 Harbour Esplanade
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Victoria 3008

Report Number: 097613052 001 R Rev0
Distribution:

x2 Copies - VicUrban
x2 Copies - Golder Associates Pty Ltd

Golder Associates

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APPENDICES

1.0 INTRODUCTION

1.1 General

Golder Associates Pty Ltd (Golder Associates) was engaged by the Victorian Urban Development Authority (VicUrban) to undertake an environmental due diligence assessment ('the Assessment') and provide advice in relation to the potential purchase of the former Clayton West Primary School at 10 Alvina Street, Oakleigh South, Victoria ('the Site'). The Assessment was undertaken in general accordance with the proposal P87613064 001 P Rev 0 from 9 February 2008. A Site Location Plan is included as Figure 1 – Site Location Plan in Appendix A.

1.2 Background and Aims of Assessment

It is understood that VicUrban is considering the purchase and redevelopment of the former Clayton West PS property located at Alvina Street, Oakleigh South for residential use. Prior to purchasing the site from the Department of Education and Early Childhood Development (DEECD) VicUrban needs to assess whether there are unresolved site contamination issues which need to be further addressed and potentially rectified.

Atma Environmental has completed a Phase 1 Environmental Site Assessment (ESA) in February 2008 and Phase 2 ESA in October 2008. These reports have been reviewed as part of this assessment.

At this stage we understand that the site is unlikely to require an Environmental Audit to be redeveloped for residential use as it was used as a sensitive land use in the past (primary school) and will remain a sensitive land use. This position will require clarification with the responsible Planning Authority.

Given the above, the aims of the Assessment were to:

- Identify potential contamination issues that may still exist at the Site and may impact upon the redevelopment process and proposed intended use of the Site;
- Reduce uncertainty that could still be associated with the contamination status of the Site to aid the land purchase process

1.3 Scope of Work

The scope of the due diligence work described in this document includes the following tasks:

- Task 1- Site Inspection and Documentation Review:
  - Review the Atma reports on the site in more detail;
  - Obtain information on the quarry to the south west of the site to assess its current and potential future status to evaluate its potential contamination impact on the site;
  - Via VicUrban, source and review plans of the former building on the site to assess the location and type of former underground services and also the potential location of footings; and
  - Undertake a site inspection, including an inspection of residual rubble associated with the former building areas.
- Task 2 - Site Investigation:
  - Undertake excavation of five backhoe test trenches in the area of potential underground services to assess whether they remain and whether they are constructed of asbestos containing material (ACM);
  - Undertake excavation of eight backhoe test pits in the area of the former buildings to assess the thickness and quality of the overlying fill and assess the potential for significant building rubble;

- Undertake one test pit excavation into each of the two former UST pits to visually assess the fill used to backfill the pits and to take one sample from each pit to assist in assessment of the fill;
- Collection of six surface samples in the northern half of the site to assess for pesticides in soil. The soil sampling included one primary and one secondary duplicate for QA purposes;
- Collection of two specimen samples of fibre cement sheeting and four soil samples from the footprint of the main building and analysis for asbestos fibres, and
- Analysis of soil samples for the chemicals of interest at a NATA accredited laboratory.

- Task 3 - Reporting
  - Provision of an assessment report that presents the findings and recommendations (if any).

2.0 SITE SETTING

2.1 General Site Setting

As part of the assessment, a site walkover was undertaken on the 26th of February 2009. Details of the site inspection are summarised below in Table 1.

Table 1: Site Inspection Report

Site	**10 Alvina Street, Oakleigh South**
Title Details	Volume 8271 Folio 535 – Lot 1 on Title Plan 232530 and Lot 1 on Title Plan 232531
Area	Approximately 2.06 ha
Date of Inspection	26 February 2009
Location	To the west of Alvina Street, Oakleigh South (refer to Figure 1).
Current and Surrounding Land Use Activities	The site is currently a vacant block of land, with the buildings and structures of the former primary school demolished. The site is bounded by cyclone fencing on the western side, and wooden fences on all other sides. The surrounding land use is mostly residential, with a former disused sand quarry on the south-western side of the site.
General Site Description	Refer Section 3.3
Previous Investigations	See Section 3 of this report: - Atma Environmental (February 2008) Phase 1 Environmental Site Assessment - Atma Environmental (October 2008) Phase 2 Environmental Site Assessment

2.2 Site Topography and Drainage

The site topography is general flat, with a slight slope of about 1-2% across the site towards the south-west. The lowest point of the Site is the south-western corner. It is likely that any surface water runoff would infiltrate within the Site due to the low slope, sandy soils and large vegetated areas.

2.3 Site Geology

The 1:63,360 geological Melbourne Map sheet indicates that the property is located over the Brighton Group Formation with Tertiary age sediments consisting of non-marine sands, sandy clay, silt and gravel, as well as shelly silty sands and ferruginous sand.

3.0 DOCUMENTATION REVIEW AND SITE INSPECTION

3.1 Phase 1 and Phase 2 Environmental Site Assessment, Atma Environmental 2008

Atma Environmental has completed a Phase 1 Environmental Site Assessment (ESA) in February 2008 and Phase 2 ESA in October 2008, with both of the reports being made available to Golder Associates. A summary of the findings of the two reports is provided below:

Site History: The site was privately owned and the northern section of the site used as a market garden area until 1960, when the property was bought by the Crown. The main school buildings were constructed shortly afterwards. Over the next years the outlying classrooms were constructed, and the sports oval in the southern part of the site added. All buildings and structures were demolished in mid 2008.

Contamination Assessment: Atma Environmental conducted a soil sampling and analysis program in September 2008. Potential sources of contamination identified by the Phase 1 site assessment included:

- Imported fill used for landscaping purposes;
- Potential leakage from two underground fuel storage tanks identified;
- A potential market garden that may have existed in the northern section of the site.

Given the outcomes of Phase 1 assessment, a soil investigation was undertaken by Atma as well as the removal and validation of two underground storage tanks as part of the Phase 2 ESA. The 32 sampling locations were placed in a loose grid over the majority of the Site (refer to Figure 2, Appendix A). No obvious visual or olfactory signs of contamination were identified, and all soil results complied with the applicable NEPM HIL-A for residential use in the two discrete and 16 composite samples analysed. Based on the findings of the analytical results from the soil samples collected, Atma concluded that the site did not contain contaminant levels potentially "harmful to human health" for the proposed residential landuse. Atma did indicate that acidic soil conditions on some areas were found that may impact on plant growth. A groundwater investigation was not considered warranted by Atma given the soil sampling results.

A review of both the Phase 1 ESA and the Phase 2 ESA by Golder Associates identified the following issues that warranted further consideration:

- The choice by Atma of using composite soil sample analysis method is not considered appropriate for an assessment of this type. While the results did indicate a low risk of contamination, some uncertainty regarding the potential for pesticide contamination on the northern part of site, which had been used as a market garden, remained;
- The sand quarry to the immediate south west of the site appears not to have been considered as part of the assessment;
- The potential past use of the northern part of the site as a market garden may have lead to an increased risk of nitrate contamination of the groundwater beneath the site. This would lead to a low impact on the use of the land but would become a more significant potential risk if an Environmental Audit is required for the site and groundwater is required to be assessed;
- The ESA included no documentation as to the status of underground services on the site and the potential for them to be made of asbestos containing materials (ACMs). Sites of this era in particular commonly have water pipes made of ACMs, and underground services may remain in the ground after demolition of the above ground structures ;
- Whilst the validation of the tank removal has been documented, there is no documentation of the soil used to fill the tank pits and also the geotechnical conditions under which the soil was placed. The fate

of the sampled soils from the tank pits and the source of the soils used to backfill the pits had not been documented; and

- Demolition of the site often leads to trenches being created from which footings have been removed. Quite often, these trenches are just backfilled with rubble from the demolition. In addition, a small amount of demolition rubble is often left over the site in the area of demolished buildings. In both cases, the rubble present an aesthetic issue for the proposed residential use as well as a geotechnical issue for deeper areas. Removal of this material can lead to increased costs for the developer.

The issues identified in the review of the Atma ESAs are addressed in the following sections of this report.

3.2 Talbot Avenue Quarry

To the immediate south west of the site is the inactive Talbot Avenue sand quarry. The Planning Property Report for the quarry, which is listed as 22 Talbot Avenue, available on the Department of Planning and Community Development (DPCD) website, shows that the quarry is currently listed as a Special Use Zone – Schedule 2 (SUZ2) for extractive industry.

The DPCD Property Report lists 23 individual parcels as belonging to the property, with the PPCD Planning Map showing a residential subdivision in the northern part of the quarry which includes the extension of Talbot Avenue and Alvina Street into the new development. The DPCD reports are attached as Appendix B.

The head of the town planning department of the City of Monash, Margaret Davis, advised that the part of 22 Talbot Avenue adjoining the site is currently zoned SUZ2, and that this classification will not be changing for the foreseeable future. This part of the Talbot Avenue quarry has issues with sand slimes and uncontrolled fill which need to be resolved prior to rezoning. However, a future use as a landfill is not permissible due to the lithology and groundwater at the site, and a future rezoning would either be medium to high density residential or commercial use. Ms. Davis also advised that the information on the PPCD Planning Map was incorrect, and that a future development would not consist of small, individual lots.

Given this, it is unlikely that the Talbot Avenue site presents an unacceptable contamination risk to the site now or in the foreseeable future in its current state.

3.3 Site Inspection and Underground Services

As part of the assessment, a site walkover was undertaken on the 26th of February 2009. The site is currently a vacant block of land, with the buildings and structures of the former primary school demolished. The site is bound by cyclone fencing on the western side, and wooden fences on all other sides. The surrounding land use is mostly residential, with a former disused sand quarry on the south-western side of the site.

A footpath connects the site with Scotsburn Avenue to the east, and both the fence blocking the footpath and the main gates of the site have been damaged and partly removed, with evidence of regular foot traffic evident across the site.

Weeds, grasses and some small trees (5 to 10 metres in height) cover the site, with a number of higher oak and eucalyptus trees (10 to 15 m in height) along the boundaries of the site. Associated with the recent demolition of the buildings on the site, some very minor amounts of small building rubble can be seen within the footprint of the former buildings. The rubble seems to be restricted to the surface of the site, and is coin to hand sized with some fibre cement sheet fragments also evident.

The pits of the former UST have been backfilled, with no indication of their locations visible.

An inspection of the site for evidence of remaining underground services showed:

- A large steel pipe of about 20 cm diameter is visible in a shallow pit to the north of the former building. This pipe probably was part of the fire hydrant system.
- A small PVC drain pipe protruded from the ground to the west of the former main building.

- The water mains, visible in an above ground section in the western part of the site adjacent to Alvina Street, have been disconnected, with the mains pipe evidently still in situ within the site.
- Fragments of earthen ware pipes from the drain/sewer system were scattered among the remaining building rubble within the footprint of the main building.
- No fibre cement pipe fragments were found.

4.0 ASSESSMENT APPROACH AND CRITERIA

4.1 Assessment Approach

The soil assessment sampling strategy implemented was generally consistent with the design principles of Australian Standard AS4482.1 – 2005 *"Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds"* (AS4482.1 – 2005) and AS4482.2 – 1999 *"Guide to the Sampling of Potentially Contaminated Soil, Part 2: Volatile substances"* (AS4482.2, 1999) for the sampling and investigation of potentially contaminated soils.

Based on the review of the Atma Phase 1 and Phase 2 ESA, potential contaminants of interest remaining to be assessed were found to be organochlorine pesticides in the area of former market garden activity, as well as assessment of the soil quality of the material used to backfill the former tank pits.

Investigation locations within the area of former market gardening activity were positioned in a grid across the northern part of the site, and the backfilled former UST locations excavated and sampled.

4.2 Land Beneficial Uses

Indicators and objectives for protection of beneficial uses of land are set out in the State Environment Protection Policy (Prevention and Management of Contamination of Land) (Land SEPP).

It is understood that VicUrban plan to develop the Site for a low to medium density residential use. The Land SEPP outlines Land Use Categories and specifies beneficial uses which are be protected for land use categories.

Table 2 below summarises the adopted land use categories and the relevant beneficial uses for low and medium density residential use.

Table 2: Protected Beneficial Uses of Land

Beneficial Use To Be Protected	Land Use Sensitive Use – Medium Density	Any Beneficial Use
Maintenance of Ecosystems:		
Natural Ecosystems	x	✓
Modified Ecosystems	✓	✓
Highly Modified Ecosystems	✓	✓
Human Health	✓	✓
Buildings and Structures	✓	✓
Aesthetics	✓	✓
Production of food, flora and fibre	✓	✓

The Land SEPP outlines indicators and objectives for land, based on the relevant beneficial uses which are described in detail in Appendix C of this report.

5.0 SOIL ASSESSMENT

5.1 Scope of Works

The soil assessment fieldwork was undertaken on 3 March 2009 and comprised the excavation of ten test pits (TP1 to TP8, UST1 and UST2), and five test trenches using a rubber tyred backhoe. The pits and trenches were excavated to a depth of generally 1 m below ground level (mbgl) with exception of the test pits UST1 and UST2 at the former UST locations, which were excavated to a depth of 2.4 mbgl (see Figure 3).

Prior to earthworks commencing, a Dial Before You Dig search for underground services at the site and a site inspection were conducted. As no plans of the former buildings were available, aerial photographs of the buildings were used to locate the five test trenches for the underground services assessment.

Additionally, surface soil samples were taken for pesticide analysis from six locations (BH1 to BH6) within the northern part of the site. Four surface soil samples (AS1 to AS4) were also taken from the footprint of the main building and analysed for the presence of asbestos fibres, together with two fibre cement sheet fragments found on site.

A representative from Golder Associates observed the work, logged the sub-surface conditions and nominated locations for the collection of samples. The soil profile was logged and visual or olfactory evidence of contamination (if any) was noted. One sample per location was collected in the fill soils of locations UST1 and UST2, and one sample per location at BH1 to BH6.

5.2 Soil Sampling

Soil sampling was undertaken in general accordance with Golder Associates standard sampling protocols and in general accordance with the requirements of AS4482.1 – 2005 including the collection and laboratory analysis of duplicate samples at a minimum rate of one primary duplicate for every 20 primary samples. Secondary duplicate samples were also collected. Primary samples were inspected and ranked for the presence of visual or olfactory evidence of contamination.

The following quality control procedures were also conducted during the field investigation:

- Tracking of sample movements using CoC documentation;
- Use of NATA registered laboratories for chemical analyses; and

- Assessment of performance of internal laboratory control tests.

Soil samples were collected in jars which were capped with Teflon lined lids supplied by the laboratory. The jars were labelled immediately and stored in a chilled cool-box. The samples were then dispatched to the laboratory accompanied by chain of custody (CoC) documentation. Sampling equipment was washed between sampling locations and, where necessary, between sampling depths to minimise the possibility of cross-contamination.

Primary samples were submitted to the nominated primary laboratory, Ecowise Environmental (Ecowise), which is registered by the National Association of Testing Authorities (NATA) for the analyses performed. One secondary sample was submitted to ALS Laboratory Group which is also registered by NATA. Asbestos analysis was performed by the asbestos and synthetic mineral fibre laboratory Identifibre Pty Ltd.

A description of the soils encountered and samples collected is recorded in the field logs presented in Appendix D. A plan of the soil assessment sample locations is presented as Figure 2 – Soil Assessment Locations in Appendix A.

5.3 Soil Analytical Laboratory Programme

The soil chemical analytical schedule included the analysis for a range of contaminants previously identified as being the contaminants of interest. Samples taken from the former market garden area in the northern part of the site were tested for organochlorine pesticides (OCP). Soil samples taken from the two test pits at the former UST locations were analysed for the contaminants listed in EPA Publication 448.3 (*Classification of Waste*) Table 2, including:

- Metals (including arsenic, cadmium, copper, lead, mercury, nickel, tin, selenium, silver, zinc)
- Organochlorine pesticides (OCP)
- Total petroleum hydrocarbons (TPH)
- Benzene, Ethylbenzene, Toluene and Xylene (BTEX)
- Polycyclic aromatic hydrocarbons (PAH)
- Polychlorinated biphenyls (PCB)
- Phenols
- Cyanide
- Fluoride

Two specimen samples and four soil samples were also analysed for the presence of asbestos fibres.

The final analyses selected for each sample is shown in the soil samples CoC documentation included in Appendix D.

6.0 GROUND CONDITIONS AND FIELD MEASUREMENT RESULTS

6.1 Sub-surface Ground Conditions

The subsurface conditions encountered on the Site during Golder Associates field assessment are presented in the soil logs in Appendix B along with a summary of the Notes and Abbreviations used and the Method of Soil Classification.

A description and summary of the main subsurface units encountered in the boreholes drilled as part of this investigation is provided below.

Unit 1 – FILL(Sand)

Fill soils were generally encountered in the area of the former buildings and consisted of reworked homogenous fine grained grey sands with minor amounts of brick and tile fragments and gravel.

The fill soils in the area of the former buildings were found to extend to depths of approximately 0.4 to 0.7 mbgl, and were often associated with drainage pipes. In the former tank pits the fill soils were observed to a depth of 1.8 to 1.9 mbgl. The fill soils typically exhibited no visible evidence of contamination and no non-natural odours were identified.

Unit 2 –SAND (Inferred Brighton Group Sediments)

In all test pits, underlying the Unit 1 fill in some areas, but generally present below surface grass, dark brown to grey, fine grained, homogenous sand was encountered. The dark brown colour was associated with organic material in the surface layer and generally turned grey to light grey within 0.3 metres from the surface. These sediments are inferred to belong to the tertiary Brighton Group.

The Unit 2 material was encountered at depths ranging from about surface level to 1.9 mbgl.

Unit 3 –SAND (Inferred Brighton Group Sediments)

In the two UST test pits, yellow medium grained sands were encountered at depth of 1.9 to 2.4 mbgl. These sediments are inferred to belong to the tertiary Brighton Group. Both UST test pits were terminated in this unit at a depth of 2.4 mbgl.

Table 3 present summaries of the subsurface units encountered in the test pits and trenches and their respective depth intervals.

Table 3: Summary of Subsurface Conditions Test Pits and Trenches

Unit	Description	Unit Depth Interval (m)
1	FILL (Grey Sand)	0.0 – 0.7 (1.9*)
2	Grey SAND	0.0 – 1.9
2	Yellow SAND	1.9 – 2.4*

*In the UST test pits

The subsurface materials encountered during the field investigation are generally consistent with the published geological information for the area.

6.2 Aesthetic Observations – Soil

Visual and olfactory assessment of the soil samples was undertaken as described in Section 5.1, soil descriptions are presented in the soil logs included as Appendix D. The fill soils typically exhibited no visible evidence of contamination and no non-natural odours were identified. Within the footprint of the former buildings, minor amounts of residual building rubble were observed.

6.3 Underground Services

Aerial photographs of the former buildings were used in conjunction with Dial Before You Dig information and site observations to locate the test trenches for the underground services assessment.

An inspection of the site for evidence of remaining underground services showed a large steel pipe of about 20 cm diameter in a shallow pit to the north and a small PVC drain pipe protruding from the ground to the west of the former main building.

A total of five test trenches were excavated in locations likely to contain services or where remnant serices had been observed (see Figure 3).

Only short lengths of remaining steel and PVC pipes were found in those locations, with underground services generally removed during the demolition of the structures on site. The section of steel pipe observed had been cut to a length of approximately 2 m, with the section remaining in place due to a tree growing on top of it.

Fragments of earthen ware pipes from the drain/sewer system were scattered among the remaining building rubble within the footprint of the main building, further indicating that the sewer and drainage system on site had been removed during the demolition.

7.0 DISCUSSION OF SOIL RESULTS

7.1 Protection of Beneficial Uses – Soil Analysis Results

The analytical results for soil analysis undertaken at the Site are summarised in Table 1, Appendix E. Laboratory certificates for soil results are presented in Appendix F.

7.1.1 Protection of the Environment

Samples from all six locations in the northern part of the site (BH1 to BH6) laboratory tested for organochlorine pesticides complied with the NEPM EIL adopted criteria, as did the soils from the two former UST locations (UST1 and UST2), which were tested for a range of contaminants as listed in EPA Publication 448.3, Table 2.

This is also consistent with the 2 discrete and 16 composite samples tested by Atma Environmental over the site which all complied with the NEPM EIL criteria.

7.1.2 Protection of Human Health

Samples from all eight assessment locations were found to be below the applicable NEPM HIL A guidelines.

- No exceedences of the HIL A guidelines have been reported for any of the soil samples analysed, with all analysis results below the criteria threshold.
- Asbestos fibres were detected in both of the two fibre cement sheeting samples taken from within the footprint of the former main building and analysed for asbestos, with chrysotile, amosite and chrocidolite asbestos identified in the samples. Soil samples taken at four locations within the footprint of the main building and tested for asbestos did not contain asbestos fibres, indicating that the use of asbestos fibre cement sheeting in the construction of the former building and the residual ACM fragments on site is likely to have had a low impact on the soil quality on site.

This is also consistent with the 18 samples tested by Atma Environmental over the site which all complied with the NEPM HIL A criteria.

7.1.3 Aesthetics

Fill was generally observed to a depth ranging between 0.3 m to 1.0 m and consisted mostly of reworked homogenous local grey sands, with only minor traces of brick and tile fragments identifying them as fill. The fill soils typically exhibited no visible evidence of contamination and no non-natural odours were identified. No areas of buried rubble were identified in any of the eight test pits and five test trenches excavated.

Within the footprint of the former buildings, minor amounts of remaining building rubble, which was also indentified in the Atma site assessment, was observed on the surface.

7.1.4 Buildings and Structures

Low levels of pH in soil were found at two of the three locations tested by Atma Environmental, with the lowest level at pH 4.8 and the highest level at pH 6.9. The low levels of pH are likely to be related to the Brighton Group soils underlying the site, and should be considered in the design of future structures on site.

8.0 QA/QC ASSESSMENT AND RESULTS

8.1 General

A data quality assurance program was implemented as part of the assessment work. The main aspects of the data quality assurance relate to the collection of quality control samples and generation of internal laboratory quality control data to support the reported results and the assessment of laboratory results.

The field work for this investigation was carried out in general accordance with Golder Associates' Environmental Field Manual, conducted under the Golder Associates' Quality System which operates in accordance with AS/NZS ISO 9001:2000.

The quality of the laboratory data generated was supported with appropriate laboratory quality control samples and assessed using standard methods. Quality control samples consisting of internal spikes, duplicates and method blanks were analysed as part of the laboratory quality assurance/quality control (QA/QC) program.

8.2 QA/QC Summary

The QA/QC objectives and results are presented in Appendix I. The achieved QA/QC completeness of 100% is above the overall completeness objective of 95%. Based on this, it is considered that the overall data quality generated during the assessment of soils by Golder Associates is of sufficient quality upon which to base decisions for this assessment.

9.0 SUMMARY OF ASSESSMENT FINDINGS

No exceedences of the health investigation levels (HIL) A (i.e. residential scenario with access to soil) guidelines or the ecological investigation levels (EIL) have been reported for the eight soil samples analysed by Golder Associates and the eighteen soil samples analysed by Atma Environmental, with all analysis results well below the criteria threshold. No asbestos fibres were detected in any of the four soil samples taken from the footprint of the former building and analysed for asbestos, indicating that the use of asbestos fibre cement sheeting in the construction of the former building is likely to have had a low impact on the soil quality on site..

A preliminary comparison of the analysis results from the two former UST pits with current off-site disposal classification guidelines (*EPA Publication 448.3 Classification of Wastes*, EPA May 2007) has shown that the material meet the adopted criteria for the proposed medium density residential use of the site.

It should be noted that while no asbestos fibres were detected in the tested soil samples, two fibre cement sheet fragments, chosen randomly from the coin to hand size fragments present on the surface within the footprint of the former building, did contain chrysotile, amosite and chrocidolite asbestos. These fragments most likely represent residual ACM fibre cement sheeting used in the construction of the buildings.

The underground services on site have generally been removed during the demolition works. The minor sections of piping remaining are expected to have only a low impact on the proposed development.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Golder Associates was engaged by the VicUrban to undertake an environmental due diligence assessment and provide advice in relation to the potential purchase of the former Clayton West Primary School at 10 Alvina Street, Oakleigh South, Victoria. The purpose of the assessment was to reduce the risk of contamination liabilities associated with the purchase of the site. The conclusions and implications for the proposed site redevelopment from the assessment are outlined below.

10.1 Potential Contamination Risks and Liabilities

Based on the findings of this assessment it is Golder Associates' opinion that the site presents a low contamination risk to human health and environment for medium-density residential use.

The soil chemical concentrations in the areas tested were all found to be less than onsite (health) criteria for residential use of the site and onsite (ecological) criteria.

Minor amounts of remaining small building rubble were observed within the footprint of the former buildings. The amount and nature of the rubble conforms to what can be expected to remain after properly managed demolition works, and in our opinion, does not represent an unacceptable aesthetic issue for the site. However, ACM containing fibre cement sheeting fragments are scattered over the surface of the former building footprint. These fragments should be collected by a licensed asbestos removalist, disposed offsite in accordance with State regulations and the building footprint areas be given a certificate from an occupational hygienist confirming that the area is free of visible asbestos.

The Talbot Avenue quarry site was found to be unlikely to present an unacceptable contamination risk to the site in the foreseeable future.

The findings of this assessment suggest the site is unlikely to present a significant contamination liability to VicUrban for the proposed residential use, due to the overall low risk and nature of the soil condition.

10.2 Implications for the Proposed Site Redevelopment

The implications for the proposed site development are as follows:

1) No further assessment of soils is considered necessary to support this contamination due diligence assessment.

2) No assessment of groundwater is considered necessary to support this contamination due diligence assessment due to the absence of contaminants in the soils on site.

3) Remaining ACM fragments within the footprint of the former buildings should be collected by a licensed asbestos removalist, disposed offsite in accordance with State regulations and the building footprint areas be given a certificate from an occupational hygienist confirming that the area is free of visible asbestos.

4) If excess soils are to be disposed off site, these soils are likely to be classified as "Fill Material", based on the data provided in the Atma reports and our soil assessment. However, testing of the actual material to be disposed offsite would need to be undertaken in accordance with EPA Publication 1178 with classification in accordance with EPA Publication 448.3.

At this stage we understand that the site is unlikely to require an Environmental Audit to be redeveloped for residential use as it was used as a sensitive land use in the past (primary school) and will remain a sensitive land use. This position will require clarification with the Planning Authority. Should an Environmental Audit be required, an Environmental Auditor appointed to the site may have a different opinion to Golder and require further assessment of the site. This would be likely to include an assessment of groundwater quality at the site.

11.0 LIMITATIONS OF THIS REPORT

Your attention is drawn to the document - "Limitations", which is included in Appendix H of this report. The statements presented in this document are intended to advise you of what your realistic expectations of this report should be. The document is not intended to reduce the level of responsibility accepted by Golder Associates, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.

Report Signature Page

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APPENDIX A

Figures

1) Site Location Plan
2) Atma Environmental Approximate Soil Sampling Locations 2008
3) Soil Sampling and Test Pit Locations

Golder Associates	CLIENT: VICURBAN	PROJECT: FORMER CLAYTON WEST PRIMARY, 10 ALVINA STREET, OAKLEIGH SOUTH	
	DRAWN: MLL, DATE: 18.03.09	TITLE: SITE LOCATION PLAN	
	CHECKED: CW, DATE: 25.03.09		
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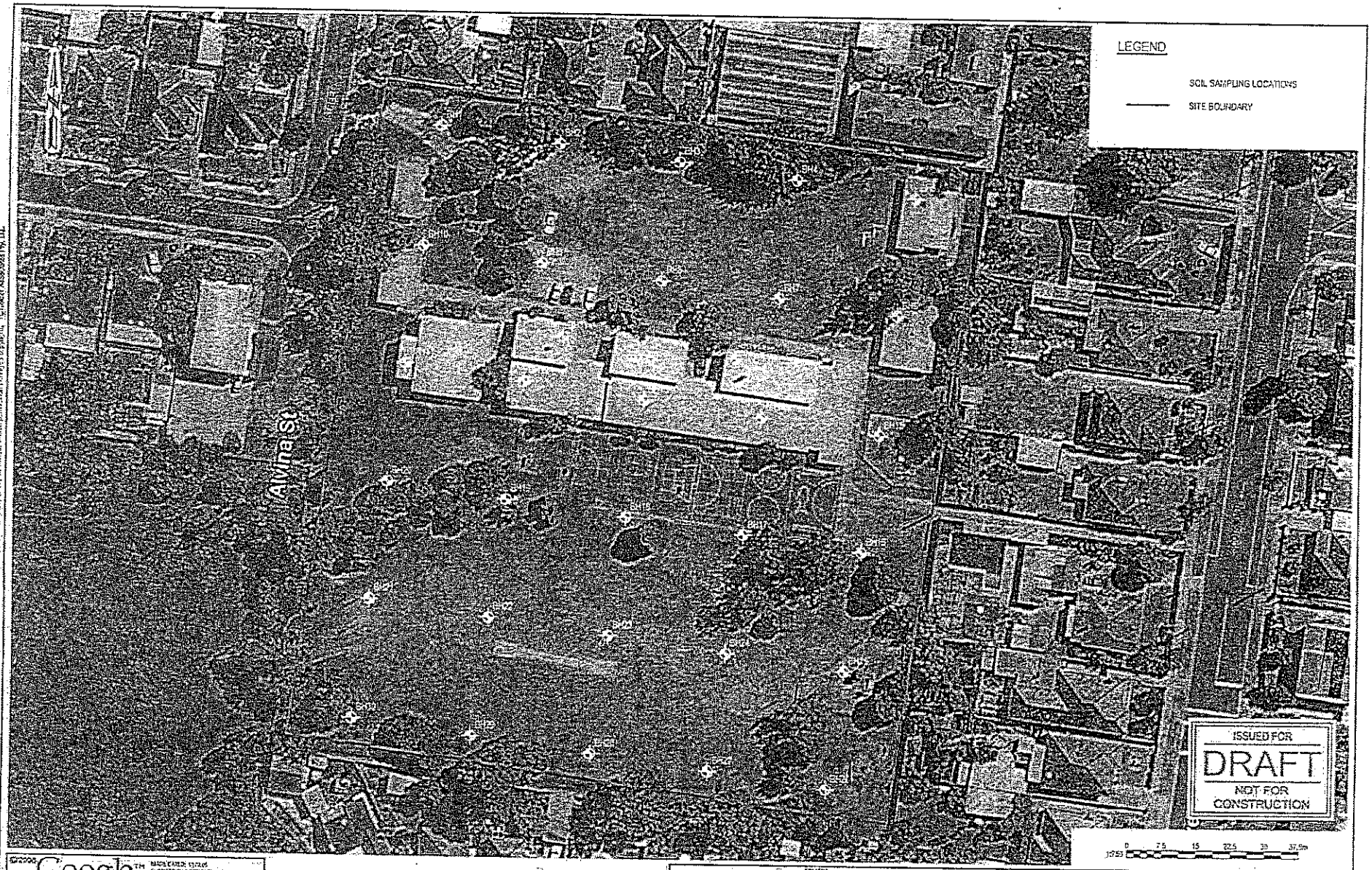

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	CHECKED: CW	DATE: 03.04.09	
	SCALE: 1:750 (APPROXIMATE)	A3	PROJECT NO. 097613052 / DOC NO. 001 / REV. R / FIGURE NO. F0003 / REV. 0 / FIGURE 2

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Golder Associates	CLIENT: VICURBAN		PROJECT: FORMER CLAYTON WEST PRIMARY 10 ALVINA STREET, OAKLEIGH SOUTH
	DRAWN: ML/MM	DATE: 03.04.09	TITLE: TESTPIT AND SOIL SAMPLING LOCATIONS
	CHECKED: CW	DATE: 03.04.09	
	SCALE: 1:750 (APPROXIMATE)	A3	PROJECT No: 087613052 · DOC No: 001 · DOC TYPE: R · FIGURE No: F0002 · REV No: 1 · FIGURE 3

APPENDIX B

DPCD Reports

Land
vic.gov.au

Property Report from www.land.vic.gov.au on 04 March 2009 11:05 AM

Address: 22 TALBOT AVENUE OAKLEIGH SOUTH 3167
Lot and Plan Number: This property has 23 parcels. See table below.
Standard Parcel Identifier (SPI): See table below.
Local Government (Council): MONASH **Council Property Number:** 231908
Directory Reference: Melway 78 K2

Parcel Details

Lot/Plan or Crown Description	SPI
Lot 10 LP12090	10\LP12090
Lot 11 LP12090	11\LP12090
Lot 12 LP12090	12\LP12090
Lot 13 LP12090	13\LP12090
Lot 14 LP12090	14\LP12090
Lot 15 LP12090	15\LP12090
Lot 16 LP12090	16\LP12090
Lot 18 LP12090	18\LP12090
Lot 19 LP12090	19\LP12090
Lot 20 LP12090	20\LP12090
Lot 21 LP12090	21\LP12090
Lot 22 LP12090	22\LP12090

Lot/Plan or Crown Description	SPI
Lot 23 LP12090	23\LP12090
Lot 24 LP12090	24\LP12090
Lot 25 LP12090	25\LP12090
Lot 26 LP12090	26\LP12090
Lot 27 LP12090	27\LP12090
Lot 28 LP12090	28\LP12090
Lot 29 LP12090	29\LP12090
Lot 30 LP12090	30\LP12090
Lot 31 LP12090	31\LP12090
Lot 33 LP12090	33\LP12090
Lot R1 LP12090	R1\LP12090

State Electorates

Legislative Council: SOUTH EASTERN METROPOLITAN (2005)
Legislative Assembly: CLAYTON (2001)

Utilities

Rural Water Business: Southern Rural Water
Metro Water Business: South East Water Limited
Melbourne Water: Inside drainage boundary
Power Distributor: UNITED ENERGY DISTRIBUTION (Information about choosing an electricity retailer)

Planning Zone Summary

Planning Zones: RESIDENTIAL 1 ZONE (R1Z)
SCHEDULE TO THE RESIDENTIAL 1 ZONE
SPECIAL USE ZONE - SCHEDULE 2 (SUZ2)
SCHEDULE TO THE SPECIAL USE ZONE - SCHEDULE 2

Planning Overlay: ENVIRONMENTAL AUDIT OVERLAY (EAO)
ENVIRONMENTAL AUDIT OVERLAY (EAO)

Planning scheme data last updated on 26 February 2009.

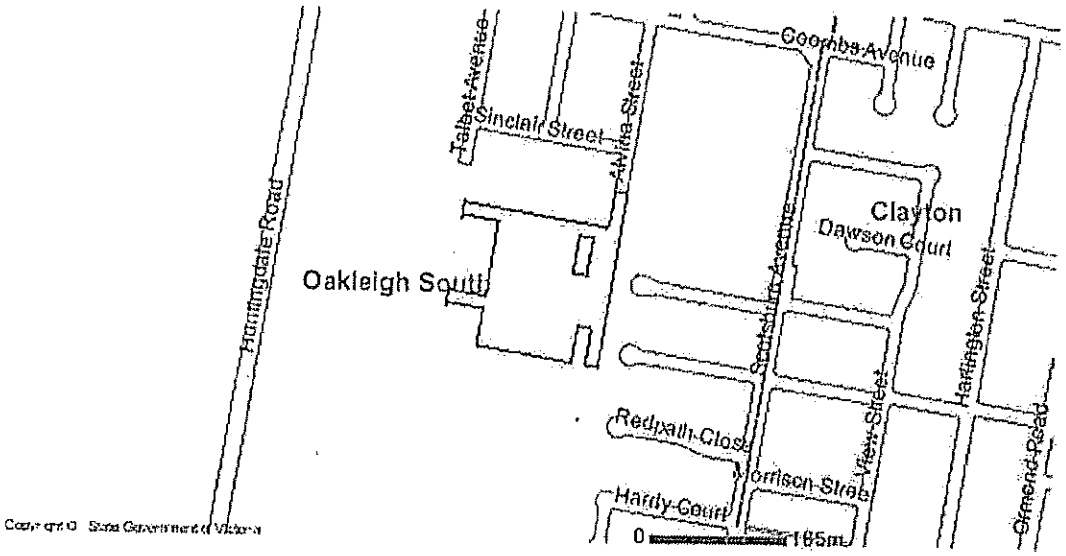
A planning scheme sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State, local, particular and general provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting Planning Schemes Online

This report is NOT a Planning Certificate issued pursuant to Section 199 of the Planning & Environment Act 1987. To obtain a Planning Certificate go to Titles and Property Certificates

To view planning zones, overlay and heritage information in an interactive format visit Planning Maps Online

For other information about planning in Victoria visit www.dpcd.vic.gov.au/planning

Area Map



Department of
Planning and
Community Development

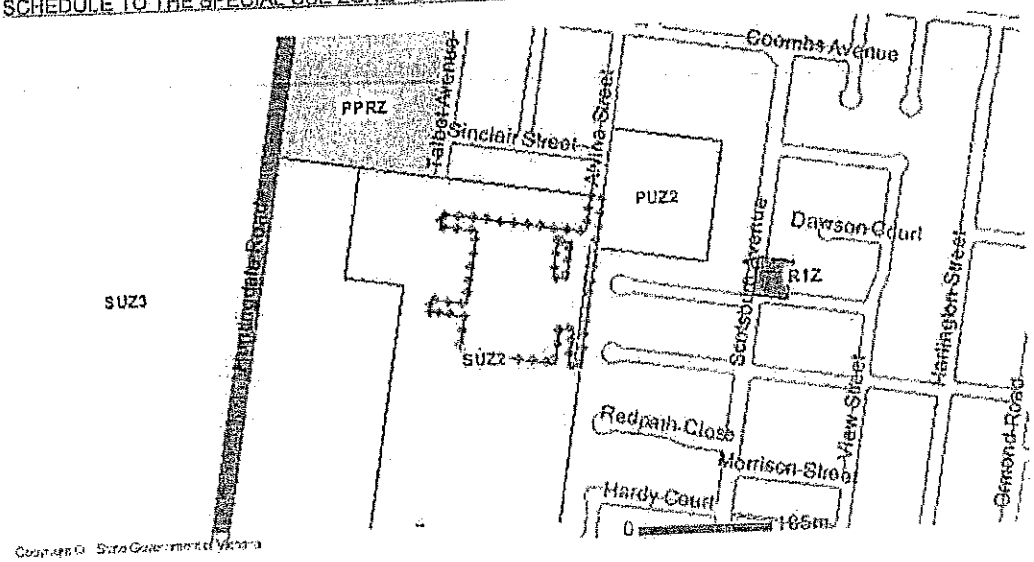
Planning Property Report

From www.dpcd.vic.gov.au/planning on 04 March 2009 11:06 AM

Address: 22 TALBOT AVENUE OAKLEIGH SOUTH 3167
Lot and Plan Number: Lot 10 LP12090
This property has a total of 23 parcels.
For full parcel details search for this address at Property Reports and get a free Basic Property Report.
Local Government (Council): MONASH **Council Property Number:** 231908
Directory Reference: Melway 78 K2

Planning Zones

RESIDENTIAL 1 ZONE (R1Z)
SCHEDULE TO THE RESIDENTIAL 1 ZONE
SPECIAL USE ZONE - SCHEDULE 2 (SUZ2)
SCHEDULE TO THE SPECIAL USE ZONE - SCHEDULE 2



Zones Legend

- B1Z - Business 1
- B2Z - Business 2
- B3Z - Business 3
- B4Z - Business 4
- B5Z - Business 5
- CA - Commonwealth Land
- CCZ - Capital City
- CDZ - Comprehensive Development
- DZ1 - Dockland
- ERZ - Environmental Rural
- FZ - Farming
- GWAZ - Green Wedge A
- GWZ - Green Wedge
- IN1Z - Industrial 1
- IN2Z - Industrial 2
- IN3Z - Industrial 3
- LDRZ - Low Density Residential
- MUZ - Mixed Use
- PCRZ - Public Conservation & Resource
- PDZ - Priority Development
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ3 - Public Use - Health Community
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery / Crematorium
- PUZ6 - Public Use - Local Government
- PUZ7 - Public Use - Other Public Use
- R1Z - Residential 1
- R2Z - Residential 2
- R3Z - Residential 3
- RAZ - Rural Activity
- RCZ - Rural Conservation
- RDZ1 - Road - Category 1
- RDZ2 - Road - Category 2
- RLZ - Rural Living
- RUZ - Rural
- SUZ - Special Use
- TZ - Township
- UFZ - Urban Floodway
- UGZ - Urban Growth
- Urban Growth Boundary

Victoria
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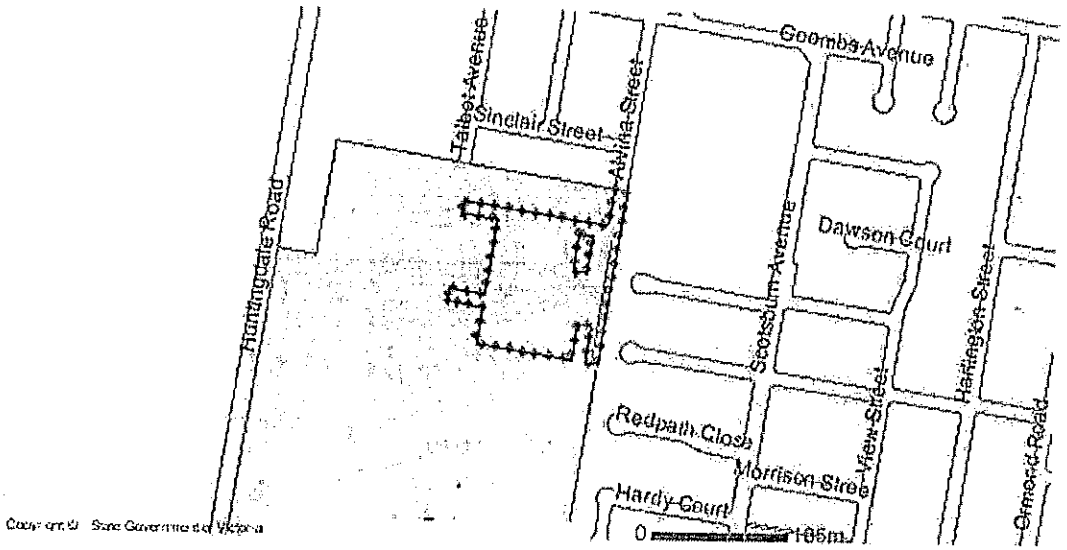
Planning Overlay

ENVIRONMENTAL AUDIT OVERLAY (EAO)
ENVIRONMENTAL AUDIT OVERLAY (EAO)



Overlays Legend

- Airport Environs
- City Link Project
- Design & Development
- Design & Development (Part)
- Development Contributions Plan
- Development Plan
- Environmental Audit
- Environmental Significance
- Erosion Management
- Floodway
- Heritage
- Incorporated Plan
- Land Subject to Inundation
- Land Subject to Inundation & Floodway
- Melbourne Airport Environs 1
- Melbourne Airport Environs 2
- Neighbourhood Character
- Public Acquisition
- Restructure
- Road Closure
- Salinity Management
- Significant Landscape
- Special Building
- State Resource
- Vegetation Protection
- Wildfire Management

Note: due to overlaps some colours on the maps may not match those in the legend.

Further Planning Information

Planning scheme data last updated on 26 February 2009.

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State, local, particular and general provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting Planning Schemes Online

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For other information about planning in Victoria visit www.dpcd.vic.gov.au/planning

Planning Map
Clayton West Primary School

Department of Planning and Community Development

Legend

- Major Town
- Major Road, Road
- Road name
- Railway, Tramway
- Property/Parcel, selected
- Address: Lot, Crown allotment
- River, Stream, Coastline
- Water body
- Locality
- Locality name
- Local Government Area
- Local Government Name
- Urban Growth Boundary (UGB)
- Area outside of the UGB
- Investigation Area

ZONES

- B1Z - Business 1
- B2Z - Business 2
- B3Z - Business 3
- B4Z - Business 4
- B5Z - Business 5
- CA - Commonwealth Land (not in scheme)
- CCZ - Capital City
- CDZ - Comprehensive Development
- DZ - Dockland
- ERZ - Environmental Rural
- FZ - Farming
- GWAZ - Green Wedge A
- GWZ - Green Wedge
- IN1Z - Industrial 1
- IN2Z - Industrial 2

(cont)

- IN3Z - Industrial 3
- LDRZ - Low Density Residential
- MUZ - Mixed Use
- PCRZ - Public Conservation & Resource
- PDZ - Priority Development
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ3 - Public Use - Health Community
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery / Crematorium
- PUZ6 - Public Use - Local Government
- PUZ7 - Public Use - Other Public Use
- R1Z - Residential 1
- R2Z - Residential 2
- R3Z - Residential 3

(cont)

- RAZ - Rural Activity
- RCZ - Rural Conservation
- RDZ1 - Road - Category 1
- RDZ2 - Road - Category 2
- RLZ - Rural Living
- RUZ - Rural
- SUZ - Special Use
- TZ - Township
- UFZ - Urban Floodway
- UGZ - Urban Growth

Scale 1:4,263

Printed: March 4, 2009

Victoria The Place To Be

APPENDIX C

Assessment Approach and Criteria

1.0 SOIL ASSESSMENT CRITERIA – BENEFICIAL USES

The Land SEPP outlines indicators and objectives for land, based on the relevant beneficial uses. The sections below describe the criteria that will be applied for the beneficial uses relevant to this Site.

1.1 SOIL ASSESSMENT

Reference will be made to the National Environment Protection Council (NEPM) Ecological Investigation Levels (EILs) for the protection of the beneficial use of Maintenance of Ecosystems. The criteria outlined in the NEPM are based on a natural ecosystem, although it should be noted that the Site environment reflects a modified ecosystem. For the assessment of ecosystems, the EILs are referred to in the first instance as a screening tool to identify potential issues, as the EILs are generally set for minimally modified urban ecosystems. In some instances, natural background concentrations of elements may also be in excess of EILs. The NEPM guidelines recommend the development of site specific EILs should this be necessary, such as where significant excursions above the guidelines are consistently encountered. As such, it is important to note that the presence of concentrations of contaminants above the EILs is not necessarily indicative of a risk to the environment.

1.2 Human Health

Reference will be made to the NEPM Health Investigation Levels Scenario A (NEPM HIL A). These investigation levels set out concentrations of contaminants for the protection of human health in a standard residential land use setting.

In the absence of readily usable guidelines for *petroleum hydrocarbon components* as listed in NEPM, the New South Wales EPA *"Contaminated Sites: Guidelines for Assessing Service Station Sites"*, 1994 (NSW EPA, 1994) for total petroleum hydrocarbons (TPH), have been adopted.

In assessing a single population or data set against the NEPM HILs, where exceedences of criteria are observed, the following statistical guidelines can be applied:

- The arithmetic mean of the level of each contaminant is below the relevant HIL;
- The standard deviation is less than half the relevant HIL; and
- No individual sample records a concentration in excess of 2.5 times the relevant HIL.

1.3 Buildings and Structures

The objective for buildings and structures is to ensure that contamination does not cause the soil to be corrosive, and so affect the integrity of building materials. Potential impact to this beneficial use can be assessed by a review of physical parameters such as pH and sulphate.

1.4 Aesthetics

The objective for aesthetics requires that any contamination in the soil "must not cause the land to be offensive to the senses of human beings". In our experience, this is usually taken to mean the presence of waste material (e.g., metal fragments, coke, ash etc), discoloured soil or odours that are not acceptable in accessible areas of soil.

APPENDIX D

Borehole and Test Pit Logs

REPORT OF TEST PIT: AS1-AS4

Golder Associates

CLIENT:	VicUrban	POSITION:		SHEET: 1 OF 1	
PROJECT:	Fmr Clayton West Primary School	SURFACE RL: m DATUM: AHD		MACHINE:	
LOCATION:	Clayton West	PIT DEPTH: 0.10 m		CONTRACTOR:	
JOB NO:	097613052	BUCKET TYPE:		LOGGED: TFS	DATE: 3/3/09
				CHECKED: CW	DATE: 19/3/09

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						FILL - SAND, grey, fine grained, homogeneous, small brick and tile fragments			
				0.10					TEST PIT DISCONTINUED @ 0.10 m			
			0.5									
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F01e RL2

GAP5_1 PLOG 03 LIB.GLB FULL PAGE J:\ENV\2009\097613052\TECHNICAL DOCS\GINT\097613052 001.GPJ GAP5_1 PLOG 02.GPJ 10/03/2009 4:25:44 PM

REPORT OF TEST PIT: BH1-BH6

CLIENT:	VicUrban	POSITION:	SHEET: 1 OF 1
PROJECT:	Fmr Clayton West Primary School	SURFACE RL: m DATUM: AHD	MACHINE:
LOCATION:	Clayton West	PIT DEPTH: 0.15 m	CONTRACTOR:
JOB NO:	097613052	BUCKET TYPE:	LOGGED: TFS DATE: 3/3/09
			CHECKED: CW DATE: 19/3/09

Excavation					Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						SAND, dark brown, fine grained, homogeneous			no odour/staining
				0.15					TEST PIT DISCONTINUED @ 0.15 m			
			0.5									
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

REPORT OF TEST PIT: TP1-TP8

Golder Associates

CLIENT:	VicUrban	POSITION:		SHEET: 1 OF 1	
PROJECT:	Fmr Clayton West Primary School	SURFACE RL: m DATUM: AHD		MACHINE:	
LOCATION:	Clayton West	PIT DEPTH: 1.00 m		CONTRACTOR:	
JOB NO:	097613052	BUCKET TYPE:		LOGGED: TFS	DATE: 3/3/09
				CHECKED: CW	DATE: 19/3/09

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						FILL - SAND, grey to light grey, fine grained, homogenous, minor brick and tile fragments, gravel			No odour/staining
				0.30					SAND, grey to light grey, fine grained, homogenous			No odour/staining
			0.5									
			1.0	1.00					TEST PIT DISCONTINUED @ 1.00 m Fill depths variable between 0.2 to 0.4m bgl			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

REPORT OF TEST PIT: TR1-TR5

CLIENT:	VicUrban	POSITION:	SHEET: 1 OF 1
PROJECT:	Fmr Clayton West Primary School	SURFACE RL: m DATUM: AHD	MACHINE:
LOCATION:	Clayton West	PIT DEPTH: 1.00 m	CONTRACTOR:
JOB NO:	097613052	BUCKET TYPE:	LOGGED: TFS DATE: 3/3/09
			CHECKED: CW DATE: 19/3/09

Excavation					Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						FILL - SAND, grey to light grey, fine grained,homogeneous, gravel in some locations			No odour/staining
			0.5	0.70					SAND, grey to light grey, fine grained, homogeneous			No odour/staining
			1.0	1.00					TEST PIT DISCONTINUED @ 1.00 m Fill depths variable 0.4-0.7m No fill in TR1 & TR3; Copper pipe in TR2; PVC pipe & concrete pipe in TR4; Steel pipe in TR5;			
			1.5									
			2.0									
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F01e
RL2

REPORT OF TEST PIT: UST1

Golder Associates

SHEET: 1 OF 1
MACHINE:
CONTRACTOR:
LOGGED: TFS DATE: 3/3/09
CHECKED: CW DATE: 19/3/09

CLIENT: VicUrban
PROJECT: Fmr Clayton West Primary School
LOCATION: Clayton West
JOB NO: 097613052

POSITION:
SURFACE RL: m DATUM: AHD
PIT DEPTH: 2.40 m
BUCKET TYPE:

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						FILL: light grey, loose, fine grained, homogeneous SAND, brick, tile, cloth, gravel inclusions (0.0-0.5m)			no odour/staining
			0.5									
			1.0									
			1.5									
				1.90					SAND, yellow, medium grained, medium density			no odour/staining
			2.0									
				2.40					TEST PIT DISCONTINUED @ 2.40 m			
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F01e RL2

REPORT OF TEST PIT: UST2

CLIENT:	VicUrban	POSITION:	SHEET: 1 OF 1
PROJECT:	Fmr Clayton West Primary School	SURFACE RL: m DATUM: AHD	MACHINE:
LOCATION:	Clayton West	PIT DEPTH: 2.40 m	CONTRACTOR:
JOB NO:	097613052	BUCKET TYPE:	LOGGED: TFS DATE: 3/3/09
			CHECKED: CW DATE: 19/3/09

Excavation					Sampling		Field Material Description				
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USC Symbol	SOIL / ROCK MATERIAL DESCRIPTION	MOISTURE	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0.0						FILL - SAND, light grey, fine grained, homogeneous; brick, tile, gravel inclusions (0.0-0.5m)			no odour/staining
			0.5									
			1.0									
			1.5									
				1.80					SAND, yellow, medium grained, medium density			no odour/staining
			2.0									
				2.40					TEST PIT DISCONTINUED @ 2.40 m			
			2.5									
			3.0									

This report of test pit must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F01e
RL2

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT REPORTS

Golder Associates

DRILLING/EXCAVATION METHOD

AS*	Auger Screwing	RD	Rotary blade or drag bit	HQ	Diamond Core - 63 mm
AD*	Auger Drilling	RT	Rotary Tricone bit	NMLC	Diamond Core - 52 mm
*V	V-Bit	RAB	Rotary Air Blast	NQ	Diamond Core - 47 mm
*T	TC-Bit, e.g. ADT	RC	Reverse Circulation	BH	Tractor Mounted Backhoe
HA	Hand Auger	PT	Push Tube	EX	Tracked Hydraulic Excavator
DTC	Diatube Coring	CT	Cable Tool Rig	EE	Existing Excavation
WB	Washbore or Bailer	JET	Jetting	HAND	Excavated by Hand Methods

PENETRATION/EXCAVATION RESISTANCE

L **Low resistance.** Rapid penetration possible with little effort from the equipment used.

M **Medium resistance.** Excavation/possible at an acceptable rate with moderate effort from the equipment used.

H **High resistance** to penetration/excavation. Further penetration is possible at a slow rate and requires significant effort from the equipment.

R **Refusal or Practical Refusal.** No further progress possible without the risk of damage or unacceptable wear to the digging implement or machine.

These assessments are subjective and are dependent on many factors including the equipment power, weight, condition of excavation or drilling tools, and the experience of the operator.

WATER

Water level at date shown

Water inflow

Partial water loss

Complete water loss

GROUNDWATER NOT OBSERVED — The observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave in of the borehole/test pit.

GROUNDWATER NOT ENCOUNTERED — The borehole/test pit was dry soon after excavation. However, groundwater could be present in less permeable strata. Inflow may have been observed had the borehole/test pit been left open for a longer period.

SAMPLING AND TESTING

SPT	Standard Penetration Test to AS1289.6.3.1-1993
4,7,11 N=18	4,7,11 = Blows per 150mm. N = Blows per 300mm penetration following 150mm seating
30/80mm	Where practical refusal occurs, the blows and penetration for that interval are reported
RW	Penetration occurred under the rod weight only
HW	Penetration occurred under the hammer and rod weight only
HB	Hammer double bouncing on anvil
DS	Disturbed sample
BDS	Bulk disturbed sample
G	Gas Sample
W	Water Sample
FP	Field permeability test over section noted
FV	Field vane shear test expressed as uncorrected shear strength (s_v = peak value, s_r = residual value)
PID	Photoionisation Detector reading in ppm
PM	Pressuremeter test over section noted
PP	Pocket penetrometer test expressed as instrument reading in kPa
U63	Thin walled tube sample - number indicates nominal sample diameter in millimetres

Ranking of Visually Observable Contamination and Odour (for specific soil contamination assessment projects)

R = 0	No visible evidence of contamination	R = A	No non-natural odours identified
R = 1	Slight evidence of visible contamination	R = B	Slight non-natural odours identified
R = 2	Visible contamination	R = C	Moderate non-natural odours identified
R = 3	Significant visible contamination	R = D	Strong non-natural odours identified

ROCK CORE RECOVERY

TCR = Total Core Recovery (%)

$$= \frac{\text{Length of core recovered}}{\text{Length of core run}} \times 100$$

SCR = Solid Core Recovery (%)

$$= \frac{\sum \text{Length of cylindrical core recovered}}{\text{Length of core run}} \times 100$$

RQD = Rock Quality Designation (%)

$$= \frac{\sum \text{Axial lengths of core} > 100\ mm}{\text{Length of core run}} \times 100$$

METHOD OF SOIL DESCRIPTION USED ON BOREHOLE AND TEST PIT REPORTS


FILL


GRAVEL (GP or GW)


SAND (SP or SW)


SILT (ML or MH)


CLAY (CL, CI or CH)


ORGANIC SOILS (OL or OH or Pt)


COBBLES or BOULDERS

Combinations of these basic symbols may be used to indicate mixed materials such as sandy clay.

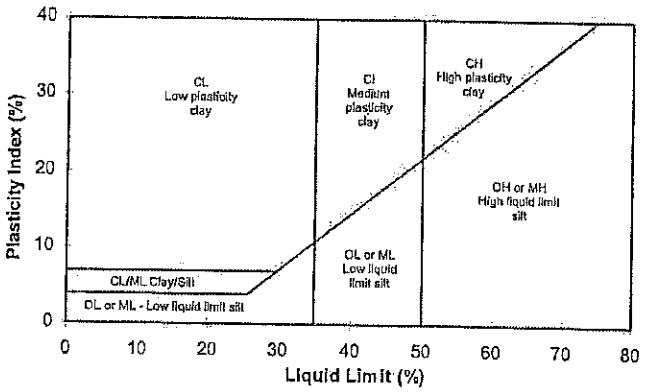
CLASSIFICATION AND INFERRED STRATIGRAPHY

Soil and Rock is classified and described in Reports of Boreholes and Test Pits using the preferred method given in AS1726 – 1993, Appendix A. The material properties are assessed in the field by visual/tactile methods.

Particle Size

Major Division	Sub Division	Particle Size
BOULDERS		> 200 mm
COBBLES		63 to 200 mm
GRAVEL	Coarse	20 to 63 mm
	Medium	6.0 to 20 mm
	Fine	2.0 to 6.0 mm
SAND	Coarse	0.6 to 2.0 mm
	Medium	0.2 to 0.6 mm
	Fine	0.075 to 0.2 mm
SILT		0.002 to 0.075 mm
CLAY		< 0.002 mm

Plasticity Properties



MOISTURE CONDITION

AS1726 - 1993

Symbol	Term	Description
D	Dry	Sands and gravels are free flowing. Clays & Silts may be brittle or friable and powdery.
M	Moist	Soils are darker than in the dry condition & may feel cool. Sands and gravels tend to cohere.
W	Wet	Soils exude free water. Sands and gravels tend to cohere.

CONSISTENCY AND DENSITY

Symbol	Term	Undrained Shear Strength
VS	Very Soft	0 to 12 kPa
S	Soft	12 to 25 kPa
F	Firm	25 to 50 kPa
St	Stiff	50 to 100 kPa
VSt	Very Stiff	100 to 200 kPa
H	Hard	Above 200 kPa

AS1726 - 1993

Symbol	Term	Density Index %	SPT "N" #
VL	Very Loose	Less than 15	0 to 4
L	Loose	15 to 35	4 to 10
MD	Medium Dense	35 to 65	10 to 30
D	Dense	65 to 85	30 to 50
VD	Very Dense	Above 85	Above 50

In the absence of test results, consistency and density may be assessed from correlations with the observed behaviour of the material.

SPT correlations are not stated in AS1726 – 1993, and may be subject to corrections for overburden pressure and equipment type.

APPENDIX E

Analysis Results Tables

Golder Associates

Former Clayton West Primary School

Vic.Urban, Former Clayton West Primary School

				Halogenated Benzenes															Halogenated Phenols									Herbicides	Inorganics											
				1,2,3,4-Tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,3-Trichlorobenzene	1,2,4,5-Tetrachlorobenzene	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3,5-Trichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Chlorotoluene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	2,3,4,5-Tetrachlorophenol	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,6-Dichlorophenol	4-Chlorophenol	Pentachlorophenol	Dinoseb	Arsenic	Cadmium	Chromium (hexavalent)	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc
				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	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.05	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	10	5	0.2	1	5	5	0.05	5	5	5	5	5	5
NEPM EILs (Interim Urban)																													20	3	1	100	600	1		60				200
NEPM HIL A																													100	20	100	1000	300	15		600				7000
VIC 448.3 Table 2 (Fill Material)																													20	3	1	100	300	1	40	60	10	10	50	200
Field_ID	Location_Code	Sampled_Date_Time	SDG																																					
BH1	BH1	3/03/2009	09-07696																																					
BH2	BH2	3/03/2009	09-07696														<0.05																							
BH3	BH3	3/03/2009	09-07696														<0.05																							
BH4	BH4	3/03/2009	09-07696														<0.05																							
BH5	BH5	3/03/2009	09-07696														<0.05																							
BH6	BH6	3/03/2009	09-07696														<0.05																							
TP1	TP1	3/03/2009	09-07696	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.05	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<10	<5	<0.2	<1	<5	<5	<0.05	<5	<5	<5	<2	<5	8
TP2	TP2	3/03/2009	09-07696	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.05	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<10	<5	<0.2	<1	11	7	<0.05	<5	8	<5	<2	<5	22

Comments

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

#2 ESDAT Combined. Some Analytes are missing from this Combined Compound.

#3 ESDAT Combined with Non-Detect Multiplier of 0.5

#4 ESDAT Combined.

Golder Associates
Former Clayton West Primary School

				MAH								
				1,2,4-Trimethylbenzene	Benzene	Ethylbenzene	Isopropylbenzene	Styrene	Toluene	Total BTEX (QLD EPA 1998 draft)	MAH (Sum of Total) (Vic EPA 448.3)	Xylenes (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5			0.5
NEPM EILs (Interim Urban); NEPM HIL A; VIC IWRG Table 2 (Fill Material)					1						7	
Field_ID	Location_Code	Sampled_Date_Time	SDG									
BH1	BH1	[illegible]	09-07685									
BH2	BH2	[illegible]	09-07686									
BH3	BH3	[illegible]	09-07086									
BH4	BH4	[illegible]	09-07080									
BH5	BH5	[illegible]	09-07686									
BH6	BH6	[illegible]	09-07816									
TP1	TP1	[illegible]	09-07690	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	TP2	[illegible]	09-07090	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	Organochlorine Pesticides											
Field_ID	4,4-DDE	a-BHC	Aldrin	Aldrin & Dieldrin (Sum of total)	b-BHC	cis-Chlordane	trans-Chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD (Sum of total)	Dieldrin
	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	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05		0.05
Guidelines				11							200	
BH1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH3	0.08	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.05	0.135	[illegible]
BH4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	Organochlorine Pesticides												
Field_ID	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC	Heptachlor	Heptachlor & Heptachlor epoxide (Sum of total)	Hexachlorobenzene	Methoxychlor	Organochlorine Pesticides (Vic EPA 448.3)	Other Organochlorine Pesticides (Vic EPA 448.3)
	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	0.25	0.15	0.05	0.05	0.05	0.02	0.05	0.05		0.25	0.05		
Guidelines								10				7	
BH1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.50	[illegible]
BH4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BH6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Comments
#1 ESDAT Combined with Non-Detect Multiplier of 0.5 Some Analytes
#2 ESDAT Combined - Some Analytes are missing from the Combined
#3 ESDAT Combined with Non-Detect Multiplier of 0.5
#4 ESDAT Combined

Field_ID	Location_Code	Sampled_Date_Time	SDG
BH1	BH1	3/03/2009	09-07695
BH2	BH2	3/03/2009	09-07696
BH3	BH3	3/03/2009	09-07694
BH4	BH4	3/03/2009	09-07696
BH5	BH5	3/03/2009	09-07696
BH6	BH6	3/03/2009	09-07696
TP1	TP1	3/03/2009	09-07696
TP2	TP2	3/03/2009	09-07696

PAH

SOIL	2-Chloronaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAH (Sum of total)	Phenanthrene	Pyrene
	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	mg/kg	mg/kg
	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
NEPM EILs (Interim Urban)																		
NEPM HIL A						1										20		
VIC 448.3 Table 2 (Fill Material)						1										20		
BH1																		
BH2																		
BH3																		
BH4																		
BH5																		
BH6																		
TP1	<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
TP2	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.8	<0.1	0.3

Phenolics

SOIL	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Nitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexylphenol	4-Chloro-3-methylphenol	4-Nitrophenol	Cresols (Sum of total)	Phenol	Halogenated Phenols (Sum of total)	Non-Halogenated Phenols (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	0.2	30	0.2	10	30	0.2	0.2	0.6	0.2	0.2	30
NEPM EILs (Interim Urban)											
NEPM HIL A									8500		
VIC 448.3 Table 2 (Fill Material)										1	60
BH1											
BH2											
BH3											
BH4											
BH5											
BH6											
TP1	<0.2	<30	<0.2	<10	<30	<0.2	<0.2	<0.6	<0.2	<0.2	<30
TP2	<0.2	<30	<0.2	<10	<30	<0.2	<0.2	<0.6	<0.2	<0.2	<30

Polychlorinated Biphenyls / **SVOCs**

SOIL	Arochlor 1016	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1221	PCB (Sum of total)	Benzal Chloride	Benzotrichloride	Hexachlorocyclopentadiene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM EILs (Interim Urban)											
NEPM HIL A								10			
VIC 448.3 Table 2 (Fill Material)								2			
BH1											
BH2											
BH3											
BH4											
BH5											
BH6											
TP1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Comments
#1 ESDAT Combined with Non-Detect Multiplier of 0.5. Some Analytes
#2 ESDAT Combined. Some Analytes are missing from this Combined
#3 ESDAT Combined with Non-Detect Multiplier of 0.5
#4 ESDAT Combined.

Golder Associates
Former Clayton West Primary School

Field_ID	Location_Code	Sampled_Date_Time	SDG	TPH C 6 - C 9 Fraction (mg/kg)	TPH C10 - C14 Fraction (mg/kg)	TPH C15 - C28 Fraction (mg/kg)	TPH C29-C36 Fraction (mg/kg)	TPH+C10 - C36 (Sum of total) (mg/kg)
ECL				20	20	50	50	
NEPM EILs (Interim Urban)								
NEPM HIL A								
Vic 448.1 Table 2 (Fill Material)				100				1000
BH1	BH1	3/03/2009	[illegible]					
BH2	BH2	3/03/2009	[illegible]					
BH3	BH3	3/03/2009	[illegible]					
BH4	BH4	3/03/2009	[illegible]					
BH5	BH5	3/03/2009	[illegible]					
BH6	BH6	3/03/2009	[illegible]					
TP1	TP1	3/03/2009	[illegible]	<20	<20	<50	[illegible]	<100#1
TP2	TP2	3/03/2009	[illegible]	<20	<20	[illegible]	[illegible]	[illegible]#2

Volatile Organic Compounds

Field_ID	1,1,1,2-Tetrachloroethane (mg/kg)	1,1,1-Trichloroethane (mg/kg)	1,1,2,2-Tetrachloroethane (mg/kg)	1,1,2-Trichloroethane (mg/kg)	1,1-Dichloroethane (mg/kg)	1,1-Dichloroethene (mg/kg)	1,1-Dichloropropene (mg/kg)	1,2,3-Trichloropropane (mg/kg)	1,2-Dibromo-3-chloropropane (mg/kg)	1,2-Dibromoethane (mg/kg)	1,2-Dichloroethane (mg/kg)	1,2-Dichloropropane (mg/kg)
ECL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM EILs (Interim Urban)												
NEPM HIL A												
Vic 448.1 Table 2 (Fill Material)												
BH1												
BH2												
BH3												
BH4												
BH5												
BH6												
TP1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Field_ID	1,3-Dichloropropane (mg/kg)	2,2-Dichloropropane (mg/kg)	Benzyl chloride (mg/kg)	Bromochloromethane (mg/kg)	Bromodichloromethane (mg/kg)	Bromoform (mg/kg)	Carbon tetrachloride (mg/kg)	Chlorinated Hydrocarbons (Vic EPA 448.2) (mg/kg)	Chlorodibromomethane (mg/kg)	Chloroform (mg/kg)	cis-1,2-Dichloroethene (mg/kg)	cis-1,3-Dichloropropene (mg/kg)
ECL	0.5	0.5	0.3	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5
NEPM EILs (Interim Urban)												
NEPM HIL A												
Vic 448.1 Table 2 (Fill Material)								1				
BH1												
BH2												
BH3												
BH4												
BH5												
BH6												
TP1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Field_ID	Dibromomethane (mg/kg)	Dichloromethane (mg/kg)	Hexachlorobutadiene (mg/kg)	Hexachloroethane (mg/kg)	Other Chlorinated Hydrocarbons (Vic EPA 448.2) (mg/kg)	Trichloroethylene (mg/kg)	Tetrachloroethane (mg/kg)	trans-1,2-dichloroethene (mg/kg)	trans-1,3-dichloropropene (mg/kg)	Trichlorofluoromethane (mg/kg)	Vinyl chloride (mg/kg)	Quality Param: Cyanide (total) (mg/kg)	Fluoride (mg/kg)
ECL	0.5	1	0.1	0.1		0.5	0.5	0.5	0.5	2	1	5	100
NEPM EILs (Interim Urban)													
NEPM HIL A												500	
Vic 448.1 Table 2 (Fill Material)												50	450
BH1													
BH2													
BH3													
BH4													
BH5													
BH6													
TP1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Comments
#1 ESDAT Combined with Non-Detect Multiplier of 0.5 . Some Analytes
#2 ESDAT Combined . Some Analytes are missing from this Combined
#3 ESDAT Combined with Non-Detect Multiplier of 0.5
#4 ESDAT Combined

APPENDIX F

Laboratory Analysis Certificates and Chain of Custody Forms

Client: Golder Associates Pty Ltd

Address: PO Box 6079
HAWTHORN WEST VIC 3122

Attention: Travis Shreeve

Page 1 of 19

Certificate of Analysis
Batch No: 09-07696
Final Report

Report Number: 88616

Ecowise Australia Pty Ltd
Caribbean Business Park
22 Dalmore Drive
Scoresby VIC 3179
Tel: 03 8756 8000
Fax: 03 9763 1862

Date Issued: 10-Mar-2009

Date Sampled: 03-Mar-2009

Date Received: 04-Mar-2009

PO No: Not Available

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

The sample(s) referred to in this report were analysed by the following method(s):

Analysis	Method	Laboratory	Analysis	Method	Laboratory	Analysis	Method	Laboratory
CHC	WSL 8210 B (HCCP not NATA)	Melbourne	Cyanide	APHA 4120 B	Melbourne	Tot Fluoride	NEPM 404	Melbourne
HVOL	WSL 3810A	Melbourne	MAH	WSL 3810A	Melbourne	MS Total Metals	WSL 032	Melbourne
OCP	WSL 8080B	Melbourne	PAH	WSL 8100B	Melbourne	PCB	WSL 8080B	Melbourne
Phenols(Halo)	CM8040D	Melbourne	Phenols(NonHalo)	CM8040D	Melbourne	Total Cr 6+	EPA 3060A (not NATA)	Melbourne
TPH	CM030	Melbourne						

Principal Contact for this Report:

Samantha Smith
Client Manager

NATA No. 992

This document is issued in accordance with NATA's accreditation requirements.

Accredited for compliance with ISO/IEC 17025

The result's in this report were authorised by:

Name	Title
Allan Bel	Analyst
Dennis Carty	Senior Chemist
Hao Zhang	Principal Organic Chemist
Kosta Christopoulos	Chemist/Analyst
Michael Clahsen	Principal Inorganic Chemist
Stuart Paarman	Technical Officer - Chem

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	1739165	1739166	1739167	1739168	1739169	1739170
					Client Sample ID	BH1	BH2	BH3	BH4	BH5	BH6
					Sample Date	03/03/09	03/03/09	03/03/09	03/03/09	03/03/09	03/03/09
Analysis	Analyte	CAS #	LOR								
OCP	BHC (alpha isomer)	319-84-6	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	a-Endosulphan	959-98-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Aldrin	309-00-2	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	BHC (beta isomer)	319-85-7	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	b-Endosulphan	33213-65-9	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	cis-Chlordane	5103-71-9	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	trans-Chlordane	5103-74-2	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	BHC (delta isomer)	319-86-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	DDD	72-54-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	DDE	72-55-9	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	DDT	50-29-3	<0.05	mg/kg		<0.05	<0.05	0.08	<0.05	<0.05	<0.05
OCP	Dieldrin	60-57-1	<0.05	mg/kg		<0.05	<0.05	0.08	<0.05	<0.05	<0.05
OCP	Endosulfan Sulfate	1031-07-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Endrin	72-20-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Endrin Aldehyde	7421-93-4	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Endrin Ketone	53494-70-5	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Hexachlorobenzene	118-74-1	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Heptachlor Epoxide	1024-57-3	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Heptachlor	76-44-8	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	BHC (gamma isomer) [Lindane]	58-89-9	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
OCP	Methoxychlor	72-43-5	<0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

LOR = Limit of reporting. When a reported LOR is higher than the standard LOR, this may be due to high moisture content, insufficient sample or matrix interference.
CAS Number = Chemistry Abstract Services Number. The analytical procedures in this report (including in house methods) are developed from internationally recognised procedures such as those published by USEPA, APHA and NEPM.

					Sample No.	1739171	1739172	1739173
					Client Sample ID	TP1	TP2	QC1
					Sample Date	03/03/09	03/03/09	03/03/09
Analysis	Analyte	CAS #	LOR					
CHC	1,2,3,4-Tetrachlorobenzene	634-66-2	<0.1	mg/kg		<0.1	<0.1	
CHC	1,2,3,5-Tetrachlorbenzene	634-90-2	<0.1	mg/kg		<0.1	<0.1	
CHC	1,2,3-Trichlorobenzene	87-61-6	<0.1	mg/kg		<0.1	<0.1	
CHC	1,2,4,5-Tetrachlorobenzene	95-94-3	<0.1	mg/kg		<0.1	<0.1	
CHC	1,2,4-Trichlorobenzene	120-82-1	<0.1	mg/kg		<0.1	<0.1	
CHC	1,2-Dichlorobenzene	95-50-1	<0.1	mg/kg		<0.1	<0.1	
CHC	1,3,5-Trichlorobenzene	108-70-3	<0.1	mg/kg		<0.1	<0.1	
CHC	1,3-Dichlorobenzene	541-73-1	<0.1	mg/kg		<0.1	<0.1	
CHC	1,4-Dichlorobenzene	106-46-7	<0.1	mg/kg		<0.1	<0.1	
CHC	2-Chloronaphthalene	91-58-7	<0.1	mg/kg		<0.1	<0.1	
CHC	Benzal Chloride	98-87-3	<0.1	mg/kg		<0.1	<0.1	
CHC	Benzotrichloride	98-07-7	<0.1	mg/kg		<0.1	<0.1	
CHC	Benzylchloride	100-44-7	<0.1	mg/kg		<0.1	<0.1	
CHC	Hexachloroethane	67-72-1	<0.1	mg/kg		<0.1	<0.1	
CHC	Hexachlorobutadiene	87-68-3	<0.1	mg/kg		<0.1	<0.1	
CHC	Hexachlorocyclopentadiene	77-47-4	<0.1	mg/kg		<0.1	<0.1	
CHC	Pentachlorobenzene	608-93-5	<0.1	mg/kg		<0.1	<0.1	
Analysis	Analyte	CAS #	LOR					
HVOL	1,1,1,2-Tetrachloroethane	630-20-6	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,1,2,2-Tetrachloroethane	79-34-5	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,1- Dichloroethane	75-34-3	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,1-Dichloroethane	75-35-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,1-Dichloropropene	563-58-6	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2,3-Trichloropropane	96-18-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dibromo-3-Chloropropane	96-12-8	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dichloroethene [cis]	540-59-0(cis)	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dichloroethene [trans]	540-59-0(trans)	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dichloroethane	107-06-2	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dichloropropane	78-87-5	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,3-Dichloropropane	142-28-9	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,3-Dichloropropane [cis]	10061-01-5	<0.5	mg/kg		<0.5	<0.5	

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Sample No.	1739171	1739172	1739173
					Client Sample ID	TP1	TP2	QC1
					Sample Date	03/03/09	03/03/09	03/03/09
HVOL	1,3-Dichloropropene [trans]	10061-02-6	<0.5	mg/kg		<0.5	<0.5	
HVOL	2,2-Dichloropropane	594-20-7	<0.5	mg/kg		<0.5	<0.5	
HVOL	2-Chlorotoluene	95-49-8	<0.5	mg/kg		<0.5	<0.5	
HVOL	4-Chlorotoluene	106-43-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	Bromochloromethane	74-97-5	<0.5	mg/kg		<0.5	<0.5	
HVOL	Bromodichloromethane	75-27-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	Bromobenzene	108-86-1	<0.5	mg/kg		<0.5	<0.5	
HVOL	Bromoform (Tribromomethane)	75-25-2	<0.5	mg/kg		<0.5	<0.5	
HVOL	Carbon Tetrachloride	56-23-5	<0.5	mg/kg		<0.5	<0.5	
HVOL	Chloroform (Trichloromethane)	67-66-3	<0.5	mg/kg		<0.5	<0.5	
HVOL	Chlorobenzene	108-90-7	<0.5	mg/kg		<0.5	<0.5	
HVOL	Dibromochloromethane	124-48-1	<0.5	mg/kg		<0.5	<0.5	
HVOL	Dibromomethane	74-95-3	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,2-Dibromoethane	106-93-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	Dichloromethane	75-09-2	<1	mg/kg		<1	<1	
HVOL	Trichlorofluoromethane (CFC11)	75-69-4	<2	mg/kg		<2	<2	
HVOL	Tetrachloroethene	127-18-4	<0.5	mg/kg		<0.5	<0.5	
HVOL	Vinyl Chloride (Monomer)	75-01-4	<1	mg/kg		<1	<1	
HVOL	1,1,1-Trichloroethane	71-55-6	<0.5	mg/kg		<0.5	<0.5	
HVOL	1,1,2-Trichloroethane	79-00-5	<0.5	mg/kg		<0.5	<0.5	
HVOL	Trichloroethene	79-01-6	<0.5	mg/kg		<0.5	<0.5	
Analysis	Analyte	CAS #	LOR					
MAH	Benzene	71-43-2	<0.5	mg/kg		<0.5	<0.5	
MAH	Toluene	108-88-3	<0.5	mg/kg		<0.5	<0.5	
MAH	Ethyl Benzene	100-41-4	<0.5	mg/kg		<0.5	<0.5	
MAH	Xylenes	1330-20-7	<0.5	mg/kg		<0.5	<0.5	
MAH	Styrene	100-42-5	<0.5	mg/kg		<0.5	<0.5	
MAH	Cumene	98-82-8	<0.5	mg/kg		<0.5	<0.5	
MAH	1,2,4-Trimethylbenzene	95-63-6	<0.5	mg/kg		<0.5	<0.5	
Analysis	Analyte	CAS #	LOR					
OCP	BHC (alpha isomer)	319-84-6	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	a-Endosulphan	959-98-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Aldrin	309-00-2	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	BHC (beta isomer)	319-85-7	<0.05	mg/kg		<0.05	<0.05	<0.05

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Batch No: 09-07696

Date Issued: 10-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88618

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

					Sample No.	1739171	1739172	1739173
					Client Sample ID	TP1	TP2	QC1
					Sample Date	03/03/09	03/03/09	03/03/09
OCP	b-Endosulphan	33213-65-9	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	cis-Chlordane	5103-71-9	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	trans-Chlordane	5103-74-2	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	BHC (delta isomer)	319-86-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	DDD	72-54-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	DDE	72-55-9	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	DDT	50-29-3	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Dieldrin	60-57-1	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Endosulfan Sulfate	1031-07-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Endrin	72-20-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Endrin Aldehyde	7421-93-4	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Endrin Ketone	53494-70-5	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Hexachlorobenzene	118-74-1	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Heptachlor Epoxide	1024-57-3	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Heptachlor	76-44-8	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	BHC (gamma isomer) [Lindane]	58-89-9	<0.05	mg/kg		<0.05	<0.05	<0.05
OCP	Methoxychlor	72-43-5	<0.05	mg/kg		<0.05	<0.05	<0.05
Analysis	Analyte	CAS #	LOR					
PAH	Acenaphthene	83-32-9	<0.1	mg/kg		<0.1	<0.1	
PAH	Acenaphthylene	208-96-8	<0.1	mg/kg		<0.1	<0.1	
PAH	Anthracene	120-12-7	<0.1	mg/kg		<0.1	<0.1	
PAH	Benz(a)anthracene	56-55-3	<0.1	mg/kg		<0.1	0.1	
PAH	Benzo(a)pyrene	50-32-8	<0.1	mg/kg		<0.1	0.1	
PAH	Benzo(b)fluoranthene	205-99-2	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(g,h,i)perylene	191-24-2	<0.1	mg/kg		<0.1	<0.1	
PAH	Benzo(k)fluoranthene	207-08-9	<0.1	mg/kg		<0.1	<0.1	
PAH	Chrysene	218-01-9	<0.1	mg/kg		<0.1	0.1	
PAH	Dibenz(a,h)anthracene	53-70-3	<0.1	mg/kg		<0.1	<0.1	
PAH	Fluoranthene	206-44-0	<0.1	mg/kg		<0.1	0.2	
PAH	Fluorene	86-73-7	<0.1	mg/kg		<0.1	<0.1	
PAH	Indeno(1,2,3-cd)pyrene	193-39-5	<0.1	mg/kg		<0.1	<0.1	
PAH	Naphthalene	91-20-3	<0.1	mg/kg		<0.1	<0.1	
PAH	Phenanthrene	85-01-8	<0.1	mg/kg		<0.1	<0.1	
PAH	Pyrene	129-00-0	<0.1	mg/kg		<0.1	0.3	

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Sample No.	1739171	1739172	1739173
					Client Sample ID	TP1	TP2	QC1
					Sample Date	03/03/09	03/03/09	03/03/09
PAH	Total PAH	TOTALPAH	<0.1	mg/kg		<0.1	0.8	
Analysis	Analyte	CAS #	LOR					
PCB	Aroclor 1016	12674-11-2	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1221	11104-28-2	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1232	11141-16-5	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1242	53469-21-9	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1248	12672-29-6	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1254	11097-69-1	<0.1	mg/kg		<0.1	<0.1	
PCB	Aroclor 1260	11096-82-5	<0.1	mg/kg		<0.1	<0.1	
PCB	Total PCB	1336-36-3	<0.1	mg/kg		<0.1	<0.1	
Analysis	Analyte	CAS #	LOR					
Phenols(Halo)	4-Chloro-3-Methylphenol	59-50-7	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2-Chlorophenol	95-57-8	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,4-Dichlorophenol	120-83-2	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,6-Dichlorophenol	87-65-0	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	Pentachlorophenol	87-86-5	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,3,4,5-Tetrachlorophenol	4901-51-3	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,3,4,6-Tetrachlorophenol	58-90-2	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,3,5,6-Tetrachlorophenol	935-95-5	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,4,5-Trichlorophenol	95-95-4	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	2,4,6-Trichlorophenol	88-06-2	<0.2	mg/kg		<0.2	<0.2	
Phenols(Halo)	Total Phenols (Halogenated)	64743-03-9(Hal	<0.2	mg/kg		<0.2	<0.2	
Analysis	Analyte	CAS #	LOR					
Phenols(NonHalo)	Phenol	108-95-2	<0.2	mg/kg		<0.2	<0.2	
Phenols(NonHalo)	Total Cresols	1319-77-3	<0.6	mg/kg		<0.6	<0.6	
Phenols(NonHalo)	2,4-Dimethylphenol	105-67-9	<0.2	mg/kg		<0.2	<0.2	
Phenols(NonHalo)	2,4-Dinitrophenol	51-28-5	<30	mg/kg		<30	<30	
Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	534-52-1	<10	mg/kg		<10	<10	
Phenols(NonHalo)	2-Nitrophenol	88-75-5	<0.2	mg/kg		<0.2	<0.2	
Phenols(NonHalo)	4-Nitrophenol	100-02-7	<0.2	mg/kg		<0.2	<0.2	
Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	131-89-5	<30	mg/kg		<30	<30	
Phenols(NonHalo)	Dinoseb	88-85-7	<10	mg/kg		<10	<10	
Phenols(NonHalo)	Total Phenols (non Halogenated)	64743-03-9(Non	<30	mg/kg		<30	<30	
Analysis	Analyte	CAS #	LOR					

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Batch No: 09-07696

Date Issued: 10-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88616

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

					Sample No.	1739171	1739172	1739173
					Client Sample ID	TP1	TP2	QC1
					Sample Date	03/03/09	03/03/09	03/03/09
Tot Fluoride	Total Fluoride, as F	16984-48-8	<100	mg/kg		<100	<100	
Cyanide	Cyanide, as CN	57-12-5	<5	mg/kg		<5	<5	
Total Cr 6+	Hexavalent Chromium (Total) Soil	18540-29-9	<1	mg/kg		<1	<1	
Analysis	Analyte	CAS #	LOR					
MS Total Metals	Arsenic	7440-38-2	<5	mg/kg		<5	<5	
MS Total Metals	Cadmium	7440-43-9	<0.2	mg/kg		<0.2	<0.2	
MS Total Metals	Copper	7440-50-8	<5	mg/kg		<5	11	
MS Total Metals	Lead	7439-92-1	<5	mg/kg		<5	7	
MS Total Metals	Mercury	7439-97-6	<0.05	mg/kg		<0.05	<0.05	
MS Total Metals	Molybdenum	7439-98-7	<5	mg/kg		<5	<5	
MS Total Metals	Nickel	7440-02-0	<5	mg/kg		<5	8	
MS Total Metals	Selenium	7782-49-2	<5	mg/kg		<5	<5	
MS Total Metals	Silver	7440-22-4	<5	mg/kg		<5	<5	
MS Total Metals	Tin	7440-31-5	<5	mg/kg		<5	<5	
MS Total Metals	Zinc	7440-66-6	<5	mg/kg		8	32	
Analysis	Analyte	CAS #	LOR					
TPH	Petroleum Hydrocarbons (C6-C9)	TPHC6_C9	<20	mg/kg		<20	<20	
TPH	Petroleum Hydrocarbons (C10-C14)	TPHC10_C14	<20	mg/kg		<20	<20	
TPH	Petroleum Hydrocarbons (C15-C28)	TPHC15_C28	<50	mg/kg		<50	58	
TPH	Petroleum Hydrocarbons (C29-C36)	TPHC29_C36	<50	mg/kg		<50	<50	

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

QUALITY CONTROL - BLANKS

QC Blanks are an 'analyte free' matrix in which all applicable reagents have been added in the same proportion as in standard samples and are an internal monitor for laboratory contamination.

Lab Sample ID	Client Sample ID	Analysis	Analyte		Value
1741711	QC - Blank	Cyanide	Cyanide, as CN	mg/kg	<5
1743633	QC - Blank	Tot Fluoride	Total Fluoride, as F	mg/kg	<100
Lab Sample ID	Client Sample ID	Analysis	Analyte		
1744256	QC - Blank	MS Total Metals	Arsenic	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Cadmium	mg/kg	<0.2
1744256	QC - Blank	MS Total Metals	Copper	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Lead	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Mercury	mg/kg	<0.05
1744256	QC - Blank	MS Total Metals	Molybdenum	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Nickel	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Selenium	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Silver	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Tin	mg/kg	<5
1744256	QC - Blank	MS Total Metals	Zinc	mg/kg	<5
Lab Sample ID	Client Sample ID	Analysis	Analyte		
1739833	QC - Blank	MAH	Benzene	mg/kg	<0.5
1739833	QC - Blank	MAH	Toluene	mg/kg	<0.5
1739833	QC - Blank	MAH	Ethyl Benzene	mg/kg	<0.5
1739833	QC - Blank	MAH	Xylenes	mg/kg	<0.5
1739833	QC - Blank	MAH	Styrene	mg/kg	<0.5
1739833	QC - Blank	MAH	Cumene	mg/kg	<0.5
1739833	QC - Blank	MAH	1,2,4-Trimethylbenzene	mg/kg	<0.5
1742165	QC - Blank	MAH	Benzene	mg/kg	<0.5
1742165	QC - Blank	MAH	Toluene	mg/kg	<0.5
1742165	QC - Blank	MAH	Ethyl Benzene	mg/kg	<0.5
1742165	QC - Blank	MAH	Xylenes	mg/kg	<0.5
1742165	QC - Blank	MAH	Styrene	mg/kg	<0.5
1742165	QC - Blank	MAH	Cumene	mg/kg	<0.5
1742165	QC - Blank	MAH	1,2,4-Trimethylbenzene	mg/kg	<0.5
Lab Sample ID	Client Sample ID	Analysis	Analyte		

Batch No: 09-07696

Data Issued: 10-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88616

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

					Value
1742312	QC - Blank	TPH	Petroleum Hydrocarbons (C6-C9)	mg/kg	<20
1742312	QC - Blank	TPH	Petroleum Hydrocarbons (C10-C14)	mg/kg	<20
1742312	QC - Blank	TPH	Petroleum Hydrocarbons (C15-C28)	mg/kg	<50
1742312	QC - Blank	TPH	Petroleum Hydrocarbons (C29-C36)	mg/kg	<50
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742134	QC - Blank	PAH	Acenaphthene	mg/kg	<0.1
1742134	QC - Blank	PAH	Acenaphthylene	mg/kg	<0.1
1742134	QC - Blank	PAH	Anthracene	mg/kg	<0.1
1742134	QC - Blank	PAH	Benz(a)anthracene	mg/kg	<0.1
1742134	QC - Blank	PAH	Benzo(a)pyrene	mg/kg	<0.1
1742134	QC - Blank	PAH	Benzo(b)fluoranthene	mg/kg	<0.1
1742134	QC - Blank	PAH	Benzo(g,h,i)perylene	mg/kg	<0.1
1742134	QC - Blank	PAH	Benzo(k)fluoranthene	mg/kg	<0.1
1742134	QC - Blank	PAH	Chrysene	mg/kg	<0.1
1742134	QC - Blank	PAH	Dibenz(a,h)anthracene	mg/kg	<0.1
1742134	QC - Blank	PAH	Fluoranthene	mg/kg	<0.1
1742134	QC - Blank	PAH	Fluorene	mg/kg	<0.1
1742134	QC - Blank	PAH	Indeno(1,2,3-cd)pyrene	mg/kg	<0.1
1742134	QC - Blank	PAH	Naphthalene	mg/kg	<0.1
1742134	QC - Blank	PAH	Phenanthrene	mg/kg	<0.1
1742134	QC - Blank	PAH	Pyrene	mg/kg	<0.1
1742134	QC - Blank	PAH	Total PAH	mg/kg	<0.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742108	QC - Blank	OCP	BHC (alpha isomer)	mg/kg	<0.05
1742108	QC - Blank	OCP	a-Endosulphan	mg/kg	<0.05
1742108	QC - Blank	OCP	Aldrin	mg/kg	<0.05
1742108	QC - Blank	OCP	BHC (beta isomer)	mg/kg	<0.05
1742108	QC - Blank	OCP	b-Endosulphan	mg/kg	<0.05
1742108	QC - Blank	OCP	cis-Chlordane	mg/kg	<0.05
1742108	QC - Blank	OCP	trans-Chlordane	mg/kg	<0.05
1742108	QC - Blank	OCP	BHC (delta isomer)	mg/kg	<0.05
1742108	QC - Blank	OCP	DDD	mg/kg	<0.05
1742108	QC - Blank	OCP	DDE	mg/kg	<0.05
1742108	QC - Blank	OCP	DDT	mg/kg	<0.05
1742108	QC - Blank	OCP	Dieldrin	mg/kg	<0.05
1742108	QC - Blank	OCP	Endosulfan Sulfate	mg/kg	<0.05

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Value
1742108	QC - Blank	OCP	Endrin	mg/kg	<0.05
1742108	QC - Blank	OCP	Endrin Aldehyde	mg/kg	<0.05
1742108	QC - Blank	OCP	Endrin Ketone	mg/kg	<0.05
1742108	QC - Blank	OCP	Hexachlorobenzene	mg/kg	<0.05
1742108	QC - Blank	OCP	Heptachlor Epoxide	mg/kg	<0.05
1742108	QC - Blank	OCP	Heptachlor	mg/kg	<0.05
1742108	QC - Blank	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05
1742108	QC - Blank	OCP	Methoxychlor	mg/kg	<0.05
1742138	QC - Blank	OCP	BHC (alpha isomer)	mg/kg	<0.05
1742138	QC - Blank	OCP	a-Endosulphan	mg/kg	<0.05
1742138	QC - Blank	OCP	Aldrin	mg/kg	<0.05
1742138	QC - Blank	OCP	BHC (beta isomer)	mg/kg	<0.05
1742138	QC - Blank	OCP	b-Endosulphan	mg/kg	<0.05
1742138	QC - Blank	OCP	cis-Chlordane	mg/kg	<0.05
1742138	QC - Blank	OCP	trans-Chlordane	mg/kg	<0.05
1742138	QC - Blank	OCP	BHC (delta isomer)	mg/kg	<0.05
1742138	QC - Blank	OCP	DDD	mg/kg	<0.05
1742138	QC - Blank	OCP	DDE	mg/kg	<0.05
1742138	QC - Blank	OCP	DDT	mg/kg	<0.05
1742138	QC - Blank	OCP	Dieldrin	mg/kg	<0.05
1742138	QC - Blank	OCP	Endosulfan Sulfate	mg/kg	<0.05
1742138	QC - Blank	OCP	Endrin	mg/kg	<0.05
1742138	QC - Blank	OCP	Endrin Aldehyde	mg/kg	<0.05
1742138	QC - Blank	OCP	Endrin Ketone	mg/kg	<0.05
1742138	QC - Blank	OCP	Hexachlorobenzene	mg/kg	<0.05
1742138	QC - Blank	OCP	Heptachlor Epoxide	mg/kg	<0.05
1742138	QC - Blank	OCP	Heptachlor	mg/kg	<0.05
1742138	QC - Blank	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05
1742138	QC - Blank	OCP	Methoxychlor	mg/kg	<0.05
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742143	QC - Blank	PCB	Aroclor 1016	mg/kg	<0.1
1742143	QC - Blank	PCB	Aroclor 1221	mg/kg	<0.1
1742143	QC - Blank	PCB	Aroclor 1232	mg/kg	<0.1
1742143	QC - Blank	PCB	Aroclor 1242	mg/kg	<0.1
1742143	QC - Blank	PCB	Aroclor 1248	mg/kg	<0.1
1742143	QC - Blank	PCB	Aroclor 1254	mg/kg	<0.1

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Value
1742143	QC - Blank	PCB	Aroclor 1260	mg/kg	<0.1
1742143	QC - Blank	PCB	Total PCB	mg/kg	<0.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742097	QC - Blank	CHC	1,2,3,4-Tetrachlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,2,3,5-Tetrachlorbenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,2,3-Trichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,2,4,5-Tetrachlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,2,4-Trichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,2-Dichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,3,5-Trichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,3-Dichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	1,4-Dichlorobenzene	mg/kg	<0.1
1742097	QC - Blank	CHC	2-Chloronaphthalene	mg/kg	<0.1
1742097	QC - Blank	CHC	Benzal Chloride	mg/kg	<0.1
1742097	QC - Blank	CHC	Benzotrichloride	mg/kg	<0.1
1742097	QC - Blank	CHC	Benzylchloride	mg/kg	<0.1
1742097	QC - Blank	CHC	Hexachloroethane	mg/kg	<0.1
1742097	QC - Blank	CHC	Hexachlorobutadiene	mg/kg	<0.1
1742097	QC - Blank	CHC	Hexachlorocyclopentadiene	mg/kg	<0.1
1742097	QC - Blank	CHC	Pentachlorobenzene	mg/kg	<0.1
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742148	QC - Blank	Phenols(Halo)	4-Chloro-3-Methylphenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2-Chlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,4-Dichlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,6-Dichlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	Pentachlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,3,4,5-Tetrachlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,3,4,6-Tetrachlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,3,5,6-Tetrachlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,4,5-Trichlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	2,4,6-Trichlorophenol	mg/kg	<0.2
1742148	QC - Blank	Phenols(Halo)	Total Phenols (Halogenated)	mg/kg	<0.2
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**		
1742147	QC - Blank	Phenols(NonHalo)	Phenol	mg/kg	<0.2
1742147	QC - Blank	Phenols(NonHalo)	Total Cresols	mg/kg	<0.6
1742147	QC - Blank	Phenols(NonHalo)	2,4-Dimethylphenol	mg/kg	<0.2

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Value
1742147	QC - Blank	Phenols(NonHalo)	2,4-Dinitrophenol	mg/kg	<30
1742147	QC - Blank	Phenols(NonHalo)	2-Methyl-4,6-Dinitrophenol	mg/kg	<10
1742147	QC - Blank	Phenols(NonHalo)	2-Nitrophenol	mg/kg	<0.2
1742147	QC - Blank	Phenols(NonHalo)	4-Nitrophenol	mg/kg	<0.2
1742147	QC - Blank	Phenols(NonHalo)	2-Cyclohexyl-4,6-Dinitrophenol	mg/kg	<30
1742147	QC - Blank	Phenols(NonHalo)	Dinoseb	mg/kg	<10
1742147	QC - Blank	Phenols(NonHalo)	Total Phenols (non Halogenated)	mg/kg	<30
Lab Sample ID	Client Sample ID	Analysis	Analyte		
1739828	QC - Blank	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,1- Dichloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,1-Dichloroethene	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,1-Dichloropropene	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dibromo-3-Chloropropane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dichloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dichloropropane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,3-Dichloropropane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5
1739828	QC - Blank	HVOL	2,2-Dichloropropane	mg/kg	<0.5
1739828	QC - Blank	HVOL	2-Chlorotoluene	mg/kg	<0.5
1739828	QC - Blank	HVOL	4-Chlorotoluene	mg/kg	<0.5
1739828	QC - Blank	HVOL	Bromochloromethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	Bromodichloromethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	Bromobenzene	mg/kg	<0.5
1739828	QC - Blank	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5
1739828	QC - Blank	HVOL	Carbon Tetrachloride	mg/kg	<0.5
1739828	QC - Blank	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5
1739828	QC - Blank	HVOL	Chlorobenzene	mg/kg	<0.5
1739828	QC - Blank	HVOL	Dibromochloromethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	Dibromomethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,2-Dibromoethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	Dichloromethane	mg/kg	<1

Client: Golder Associates Pty Ltd

Client Program Ref: 097613852

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Value
1739828	QC - Blank	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2
1739828	QC - Blank	HVOL	Tetrachloroethene	mg/kg	<0.5
1739828	QC - Blank	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1
1739828	QC - Blank	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5
1739828	QC - Blank	HVOL	Trichloroethene	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1- Dichloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1-Dichloroethene	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1-Dichloropropene	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dibromo-3-Chloropropane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dichloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dichloropropane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,3-Dichloropropane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5
1742164	QC - Blank	HVOL	2,2-Dichloropropane	mg/kg	<0.5
1742164	QC - Blank	HVOL	2-Chlorotoluene	mg/kg	<0.5
1742164	QC - Blank	HVOL	4-Chlorotoluene	mg/kg	<0.5
1742164	QC - Blank	HVOL	Bromochloromethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	Bromodichloromethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	Bromobenzene	mg/kg	<0.5
1742164	QC - Blank	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5
1742164	QC - Blank	HVOL	Carbon Tetrachloride	mg/kg	<0.5
1742164	QC - Blank	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5
1742164	QC - Blank	HVOL	Chlorobenzene	mg/kg	<0.5
1742164	QC - Blank	HVOL	Dibromochloromethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	Dibromomethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,2-Dibromoethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	Dichloromethane	mg/kg	<1
1742164	QC - Blank	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2
1742164	QC - Blank	HVOL	Tetrachloroethene	mg/kg	<0.5

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Value
1742164	QC - Blank	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1
1742164	QC - Blank	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5
1742164	QC - Blank	HVOL	Trichloroethene	mg/kg	<0.5

QUALITY CONTROL - DUPLICATES

QC Data for duplicates is calculated on raw 'unrounded' values. Laboratory duplicates are randomly selected samples tested by the laboratory to maintain method precision and provide information on sample homogeniety.
RPD = Relative Percentage Difference for duplicate determinations. RPD's that fall outside the general acceptance criteria will be attributed to non-homogeneity of samples or results of low magnitudes.

Lab Sample ID	Client Sample ID	Analysis	Analyte		Sample Value	Duplicate Value	% RPD
1739855	TP2	Total Cr 6+	Hexavalent Chromium (Total) Soil	mg/kg	<1	<1	0
1741725	NCP	Cyanide	Cyanide, as CN	mg/kg	2600	2600	1.2
1744215	TP1	Tot Fluoride	Total Fluoride, as F	mg/kg	<100	<100	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
1744259	NCP	MS Total Metals	Cadmium	mg/kg	<0.2	<0.2	0
1744259	NCP	MS Total Metals	Copper	mg/kg	40	50	23.0
1744259	NCP	MS Total Metals	Lead	mg/kg	65	70	6.1
1744259	NCP	MS Total Metals	Mercury	mg/kg	0.12	0.13	5.9
1744259	NCP	MS Total Metals	Molybdenum	mg/kg	<5	<5	0
1744259	NCP	MS Total Metals	Nickel	mg/kg	84	85	1.5
1744259	NCP	MS Total Metals	Selenium	mg/kg	<5	<5	0
1744259	NCP	MS Total Metals	Silver	mg/kg	<5	<5	0
1744259	NCP	MS Total Metals	Zinc	mg/kg	95	110	13.5
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
1739831	NCP	MAH	Benzene	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	Toluene	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	Ethyl Benzene	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	Xylenes	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	Styrene	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	Cumene	mg/kg	<0.5	<0.5	0
1739831	NCP	MAH	1,2,4-Trimethylbenzene	mg/kg	<0.5	<0.5	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
1742311	NCP	TPH	Petroleum Hydrocarbons (C6-C9)	mg/kg	3200	3100	1.2

Batch No: 09-07696

Date Issued: 18-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88615

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

					Sample Value	Duplicate Value	% RPD
1742311	NCP	TPH	Petroleum Hydrocarbons (C10-C14)	mg/kg	22000	22000	0.5
1742311	NCP	TPH	Petroleum Hydrocarbons (C15-C28)	mg/kg	47000	49000	4.3
1742311	NCP	TPH	Petroleum Hydrocarbons (C29-C36)	mg/kg	7000	7000	0.0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
1742106	BH3	OCP	BHC (alpha isomer)	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	a-Endosulphan	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Aldrin	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	BHC (beta isomer)	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	b-Endosulphan	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	cis-Chlordane	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	trans-Chlordane	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	BHC (delta isomer)	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	DDD	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	DDE	mg/kg	0.08	0.08	0.0
1742106	BH3	OCP	DDT	mg/kg	0.08	0.08	0.0
1742106	BH3	OCP	Dieldrin	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Endosulfan Sulfate	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Endrin	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Endrin Aldehyde	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Endrin Ketone	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Hexachlorobenzene	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Heptachlor Epoxide	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Heptachlor	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05	<0.05	0
1742106	BH3	OCP	Methoxychlor	mg/kg	<0.05	<0.05	0
Lab Sample ID	**Client Sample ID**	**Analysis**	**Analyte**				
1739826	NCP	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,1- Dichloroethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,1-Dichloroethene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,1-Dichloropropene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2-Dibromo-3-Chloropropane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2-Dichloroethane	mg/kg	<0.5	<0.5	0

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Sample Value	Duplicate Value	% RPD
1739826	NCP	HVOL	1,2-Dichloropropane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,3-Dichloropropane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	2,2-Dichlocopropane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	2-Chlorotoluene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	4-Chlorotoluene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Bromochloromethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Bromodichloromethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Bromobenzene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Carbon Tetrachloride	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Chlorobenzene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Dibromochloromethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Dibromomethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,2-Dibromoethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Dichloromethane	mg/kg	<1	<1	0
1739826	NCP	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2	<2	0
1739826	NCP	HVOL	Tetrachloroethene	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1	<1	0
1739826	NCP	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5	<0.5	0
1739826	NCP	HVOL	Trichloroethene	mg/kg	<0.5	<0.5	0

QUALITY CONTROL - SPIKES

QC Data for spikes is calculated on raw 'unrounded' values. Laboratory spikes are randomly selected samples in which the analytes in question have been artificially introduced and recovered via standard analysis and are used to provide information on potential matrix effects on analyte recoveries.
Spike recoveries that fall outside the general acceptance criteria will be attributed to sample matrix interference or results of high magnitudes.
NCP: Non-Customer Parent (sample quality is representative of the analytical batch but the sample that was QC tested belongs to a customer not pertaining to the report.)

Batch No: 09-07696

Date Issued: 10-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88616

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

Lab Sample ID	Client Sample ID	Analysis	Analyte		Sample Value	Expected Value	% Recovery
1741688	NCP	Total Cr 6+	Hexavalent Chromium (Total) Soil	mg/kg	<1	80	100
1741736	NCP	Cyanide	Cyanide, as CN	mg/kg	<5	20	94.7
1744214	TP1	Tot Fluoride	Total Fluoride, as F	mg/kg	<100	229	87.4
Lab Sample ID	Client Sample ID	Analysis	Analyte				
1744260	NCP	MS Total Metals	Arsenic	mg/kg	21	120	110
1744260	NCP	MS Total Metals	Cadmium	mg/kg	<0.2	100	83.4
1744260	NCP	MS Total Metals	Copper	mg/kg	40	140	111
1744260	NCP	MS Total Metals	Lead	mg/kg	65	160	111
1744260	NCP	MS Total Metals	Mercury	mg/kg	0.12	1.1	93.3
1744260	NCP	MS Total Metals	Molybdenum	mg/kg	<5	100	107
1744260	NCP	MS Total Metals	Nickel	mg/kg	84	180	109
1744260	NCP	MS Total Metals	Selenium	mg/kg	<5	100	103
1744260	NCP	MS Total Metals	Tin	mg/kg	6	110	84.7
1744260	NCP	MS Total Metals	Zinc	mg/kg	95	190	108
Lab Sample ID	Client Sample ID	Analysis	Analyte				
1739830	NCP	MAH	Benzene	mg/kg	<0.5	4.4	106
1739830	NCP	MAH	Toluene	mg/kg	<0.5	4.4	85.2
1739830	NCP	MAH	Ethyl Benzene	mg/kg	<0.5	4.4	84.7
1739830	NCP	MAH	Xylenes	mg/kg	<0.5	13	84.8
1739830	NCP	MAH	Styrene	mg/kg	<0.5	4.4	81.8
1739830	NCP	MAH	Cumene	mg/kg	<0.5	4.4	84.9
1739830	NCP	MAH	1,2,4-Trimethylbenzene	mg/kg	<0.5	4.4	82.2
Lab Sample ID	Client Sample ID	Analysis	Analyte				
1742309	NCP	TPH	Petroleum Hydrocarbons (C15-C28)	mg/kg	<50	320	112
Lab Sample ID	Client Sample ID	Analysis	Analyte				
1742107	BH3	OCP	BHC (alpha isomer)	mg/kg	<0.05	1.3	96.0
1742107	BH3	OCP	a-Endosulphan	mg/kg	<0.05	1.3	110
1742107	BH3	OCP	Aldrin	mg/kg	<0.05	1.3	104
1742107	BH3	OCP	BHC (beta isomer)	mg/kg	<0.05	1.3	104
1742107	BH3	OCP	b-Endosulphan	mg/kg	<0.05	1.3	110
1742107	BH3	OCP	cis-Chlordane	mg/kg	<0.05	1.3	94.0
1742107	BH3	OCP	trans-Chlordane	mg/kg	<0.05	1.3	96.0
1742107	BH3	OCP	BHC (delta isomer)	mg/kg	<0.05	1.3	108
1742107	BH3	OCP	DDD	mg/kg	<0.05	1.3	104
1742107	BH3	OCP	DDE	mg/kg	0.08	1.3	98.0

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Client: Golder Associates Pty Ltd

Client Program Ref: 097613052

Batch No: 09-07696

Report Number: 88616

Ecowise Program Ref: GOLDER

Date Issued: 10-Mar-2009

Ecowise Environmental

					Sample Value	Expected Value	% Recovery
1742107	BH3	OCP	Dieldrin	mg/kg	<0.05	1.3	96.0
1742107	BH3	OCP	Endosulfan Sulfate	mg/kg	<0.05	1.3	98.0
1742107	BH3	OCP	Endrin Aldehyde	mg/kg	<0.05	1.3	96.0
1742107	BH3	OCP	Endrin Ketone	mg/kg	<0.05	1.3	116
1742107	BH3	OCP	Hexachlorobenzene	mg/kg	<0.05	1.3	100
1742107	BH3	OCP	Heptachlor Epoxide	mg/kg	<0.05	1.3	108
1742107	BH3	OCP	BHC (gamma isomer) [Lindane]	mg/kg	<0.05	1.3	94.0
Lab Sample ID	Client Sample ID	Analysis	Analyte				
1739825	NCP	HVOL	1,1,1,2-Tetrachloroethane	mg/kg	<0.5	4.4	83.3
1739825	NCP	HVOL	1,1,2,2-Tetrachloroethane	mg/kg	<0.5	4.4	72.5
1739825	NCP	HVOL	1,1- Dichloroethane	mg/kg	<0.5	4.4	105
1739825	NCP	HVOL	1,1-Dichloroethene	mg/kg	<0.5	4.4	104
1739825	NCP	HVOL	1,1-Dichloropropene	mg/kg	<0.5	4.4	107
1739825	NCP	HVOL	1,2,3-Trichloropropane	mg/kg	<0.5	4.4	72.5
1739825	NCP	HVOL	1,2-Dichloroethene [cis]	mg/kg	<0.5	4.4	105
1739825	NCP	HVOL	1,2-Dichloroethene [trans]	mg/kg	<0.5	4.4	106
1739825	NCP	HVOL	1,2-Dichloroethane	mg/kg	<0.5	4.4	104
1739825	NCP	HVOL	1,2-Dichloropropane	mg/kg	<0.5	4.4	105
1739825	NCP	HVOL	1,3-Dichloropropane	mg/kg	<0.5	4.4	76.8
1739825	NCP	HVOL	1,3-Dichloropropene [cis]	mg/kg	<0.5	4.4	80.0
1739825	NCP	HVOL	1,3-Dichloropropene [trans]	mg/kg	<0.5	4.4	78.4
1739825	NCP	HVOL	2,2-Dichloropropane	mg/kg	<0.5	4.4	116
1739825	NCP	HVOL	2-Chlorotoluene	mg/kg	<0.5	4.4	83.3
1739825	NCP	HVOL	4-Chlorotoluene	mg/kg	<0.5	4.4	83.1
1739825	NCP	HVOL	Bromochloromethane	mg/kg	<0.5	4.4	103
1739825	NCP	HVOL	Bromodichloromethane	mg/kg	<0.5	4.4	103
1739825	NCP	HVOL	Bromobenzene	mg/kg	<0.5	4.4	81.4
1739825	NCP	HVOL	Bromoform (Tribromomethane)	mg/kg	<0.5	4.4	70.0
1739825	NCP	HVOL	Carbon Tetrachloride	mg/kg	<0.5	4.4	106
1739825	NCP	HVOL	Chloroform (Trichloromethane)	mg/kg	<0.5	4.4	108
1739825	NCP	HVOL	Chlorobenzene	mg/kg	<0.5	4.4	83.5
1739825	NCP	HVOL	Dibromochloromethane	mg/kg	<0.5	4.4	77.1
1739825	NCP	HVOL	Dibromomethane	mg/kg	<0.5	4.4	102
1739825	NCP	HVOL	1,2-Dibromoethane	mg/kg	<0.5	4.4	76.1
1739825	NCP	HVOL	Dichloromethane	mg/kg	<1	4.4	106
1739825	NCP	HVOL	Trichlorofluoromethane (CFC11)	mg/kg	<2	4.4	98.7

Samples tested as received. A blank space indicates no test performed. Soil results expressed in mg/kg dry weight unless specified otherwise

Batch No: 09-07696

Date Issued: 10-Mar-2009

Client: Golder Associates Pty Ltd

Report Number: 88616

Client Program Ref: 097613052

Ecowise Program Ref: GOLDER

Ecowise Environmental

					Sample Value	Expected Value	% Recovery
1739825	NCP	HVOL	Tetrachloroethene	mg/kg	<0.5	4.4	83.1
1739825	NCP	HVOL	Vinyl Chloride (Monomer)	mg/kg	<1	4.4	82.1
1739825	NCP	HVOL	1,1,1-Trichloroethane	mg/kg	<0.5	4.4	108
1739825	NCP	HVOL	1,1,2-Trichloroethane	mg/kg	<0.5	4.4	78.4
1739825	NCP	HVOL	Trichloroethene	mg/kg	<0.5	4.4	106

Golder Associates

09-07696

CHAIN OF CUSTODY

№ 5706

GOLDER ASSOCIATES PTY LTD
LEVEL3, 50 BURWOOD RD,
HAWTHORN VIC 3122
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number: 097613052
Job Location: Former Clayton South Primary School
Laboratory Issued To: ECOWISE.
Purchase Order No.: GA MELB
Sampled By (Golder): T.F.Shroeve.
Golder Job Contact: " 0402 562 089.
Golder Contact Email: tshroeve@golder.com.au

* OBSERVATIONS	SAMPLE DATE	SAMPLE ID TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. OF CONTAINERS	pH	Metals (As, Cd, Cr (total), Cu, Hg, Ni, Pb, Zn)	Total Petroleum Hydrocarbons (TPH)	Benzene, Toluene, Ethyl benzene, Xylenes (BTEX)	Polycyclic Aromatic Hydrocarbons (PAH) (Standard 16)	Organochlorine Pesticides (OCP)	Organophosphorus Pesticides (OPP)	Polychlorinated Biphenyls (PCB)	EPA Victoria Publication 448.3 Table 2 Screen (no ASLP testing)	EPA Victoria Publication 448.3 Table 3 Screen (incl. ASLP testing)
–	3/3/09	BH1	Soil	0.1	1						X				
–	↓	BH2	↓	0.1	↓						X				
–	↓	BH3	↓	0.1	↓						X				
–	↓	BH4	↓	0.1	↓						X				
–	↓	BH5	↓	0.1	↓						X				
–	↓	BH6	↓	0.1	↓						X				
–	↓	TP1	↓	0.1	↓						X				
–	↓	TP2	↓	2.0	↓									X	
–	↓	QC1	↓	2.0 / 0.1	↓						X			X	

Special Instructions:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☑ 5 Working Days (standard) ☐ Other

Relinquished by: [signature] Date: 3/3/09
Organisation: Golder Associates Time: 4:00

SAMPLE RECEIPT
Received by: [signature] Date: 4.3.9
Organisation: ECOWISE Time: 3:20

DELIVERED BY: COURIER/LAB ☑ GOLDER ☐

SAMPLE STATUS: ☐ Security Sealed ☑ Chilled ☐ Frozen ☐ Ambient

Relinquished by: .... Date: ....
Organisation: Golder Associates Time: ....

ANALYTICAL SCHEDULE
Received by: .... Date: ....
Organisation: .... Time: ....

RECEIVED BY: FAX ☑ HAND ☐

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE BY RETURN FAX TO : (03) 8862 3501

Observations to Assist Analysis and OH&S
C - Expected to be Highly Contaminated
N - NAPL Sample
HS - Expected High Salinity
HOC - Expected High Total Organic Carbon
S - Sheen
O - Odourous

Original (white) - Laboratory
Duplicate (yellow) - Project File
Triplicate (pink) - COC Book

Checked By: ________ Date: ________

Identifibre Pty. Ltd.
Asbestos & Synthetic Mineral Fibre Management Services
Brickley House, 469 King Street, West Melbourne 3003
Phone: (03) 9328 2254 Fax: (03) 9328 2612
Email: contact@identifibre.com.au

Report Date: 24 March, 2009

Test Date: 24 March, 2009

Report Number: 10463-1-bsa

Client: Golder Associates Pty Ltd

Address: Level 3
50 Burwood Road
Hawthorn
Victoria 3122

Attention: Travis Shreeve

Date Received: 23 March, 2009

Received From: Travis Shreeve

Sampled From: As received

Type of Test: Bulk sample analysis was performed by Polarised Light Microscopy supplemented with Dispersion Staining Techniques, in accordance with Identifibre Method No. 2.

Identifibre Number	Sample Description/Size	Sample Details	Analysis Result
Z31988	Soil 80 x 60 x 50mm	"AS 1"	No asbestos fibres detected Organic fibres detected
Z31989	Soil 80 x 50 x 40mm	"AS 2"	No asbestos fibres detected Synthetic mineral fibres detected Organic fibres detected
Z31990	Soil 70 x 60 x 50mm	"AS 3"	No asbestos fibres detected Organic fibres detected
Z31991	Soil 65 x 40 x 40 x mm	"AS 4"	No asbestos fibres detected Organic fibres detected

Matthew Owen
Approved Identifier
Identifibre Pty. Ltd.

Matthew Owen
Approved Signatory
Identifibre Pty. Ltd.

NATA

WORLD RECOGNISED
ACCREDITATION
NATA ACCREDITED LABORATORY
NUMBER 15132

Golder Associates

CHAIN OF CUSTODY

№ 5707

GOLDER ASSOCIATES PTY LTD
LEVEL3, 58 BURWOOD RD,
HAWTHORN VIC 3122
Tel: (03) 8862 3500
Fax: (03) 8862 3501

Golder Job Number: 097613052

Job Location: Former Charlton St Primary School

Laboratory Issued To: ALS

Purchase Order No.: GA MELB

Sampled By (Golder): Travis Shreeve

Golder Job Contact: 0402582059

Golder Contact Email: tshreeve@golder.com.au

* OBSERVATIONS	SAMPLE DATE	SAMPLE ID TAAXXX/MQNN	SAMPLE TYPE	SAMPLE DEPTH (m)	No. OF CONTAINERS	pH	Metals (As, Cd, Cr (total), Cu, Hg, Ni, Pb, Zn)	Total Petroleum Hydrocarbons (TPH)	Benzene, Toluene, Ethyl benzene, Xylenes (BTEX)	Polycyclic Aromatic Hydrocarbons (PAH) (Standard 16)	Organochlorine Pesticides (OCP)	Organophosphorus Pesticides (OPP)	Polychlorinated Biphenyls (PCB)	EPA Victoria Publication 448.3 Table 2 Screen (no ASLP testing)	EPA Victoria Publication 448.3 Table 3 Screen (incl. ASLP testing)
—	3/3/09	QC2	Soil	0.1	1						X				

Received 3/3/09 No. 37 ... as per email 5-6

Environmental Division
Melbourne
Work Order EM0901972
Telephone : +61-3-8549 9600

RL 6/3/09

Special Instructions:

TURN AROUND TIME REQUIRED

☐ 1 Working Day ☐ 2 Working Days ☐ 3 Working Days ☐ 4 Working Days ☑ 5 Working Days (standard) ☐ Other DW 6/3/09.

SAMPLE RECEIPT

Relinquished by: ...... Date: 3/3/09
Organisation: Golder Associates Time: 4:00 pm

Received by: ...... Date: ......
Organisation: ...... Time: ......

ANALYTICAL SCHEDULE

Relinquished by: ...... Date: ......
Organisation: Golder Associates Time: ......

Received by: ...... Date: ......
Organisation: ...... Time: ......

RECEIVING LABORATORY TO CONFIRM RECEIPT OF ANALYTICAL SCHEDULE BY RETURN FAX TO : (03) 8862 3501

DELIVERED BY: COURIER/LAB ☑ GOLDER ☐

RECEIVED BY: FAX ☑ HAND ☐

SAMPLE STATUS: ☐ Security Sealed ☑ Chilled ☐ Frozen ☐ Ambient

Observations to Assist Analysis and OH&S
C - Expected to be Highly Contaminated
N - NAPL Sample
HS - Expected High Salinity
HOC - Expected High Total Organic Carbon
S - Sheen
O - Odourous

Original (white) - Laboratory
Duplicate (yellow) - Project File
Triplicate (pink) - COC Book

Checked By ______ Date ______

Forms FC 12b R. 8/11/01

Ranil Weerakkody

From: Shreeve, Travis [tshreeve@golder.com.au]
Sent: Tuesday, 3 March 2009 4:37 PM
To: Sarah Hodgson
Cc: Samples Melbourne
Attachments: c0c 2 als.pdf

Sarah,

Further to our discussion, please find attached the coc for soil sample QC2.

Kind regards,

Travis Shreeve (B App Sci (Env Sci)(Hons) gd OH&S) | Environmental Scientist | Golder Associates Pty Ltd
Level 3, 50 Burwood Road, Hawthorn, Victoria 3122, Australia (PO Box 6079, Hawthorn West VIC 3122)
T: +61 3 8862 3500 | D: +61 3 8862 3553 | F: +61 3 8862 3501 | M: +61 402 582 059 | E: tshreeve@golder.com.au | www.golder.com

Winner of eight BRW Client Choice Awards 2008 2007 2006 ***Work Safe, Home Safe***

Rosalinda Laria

From: Rosalinda Laria
Sent: Friday, 6 March 2009 4:38 PM
To: 'Shreeve, Travis'
Subject: Job: 097613052 (EM0901972)

Hi Travis,

I am emailing to request a Purchase Order number for Sample QC2 on CoC: 5707, for Job: 097613052 – Former Clayton South Primary School. Thank you.

Kind Regards,

Rosalinda Laria
Administration
ALS Laboratory Group
Environmental Division
Melbourne, Australia
Phone: +61 3 8549 9600
Fax: +61 3 8549 9601
www.alsglobal.com

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: EM0901972	Page	: 1 of 5
Amendment	: 1		
Client	: GOLDER ASSOCIATES	Laboratory	: Environmental Division Melbourne
Contact	: MR TRAVIS SHREEVE	Contact	: Steven McGrath
Address	: P O BOX 6079 HAWTHORN WEST VIC, AUSTRALIA 3122	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tshreeve@golder.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 8862 3500	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 8862 3501	Facsimile	: +61-3-8549 9601
Project	: 097613052	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 26100	Date Samples Received	: 03-MAR-2009
C-O-C number	: 5707	Issue Date	: 16-MAR-2009
Sampler	: TS		
Site	: Former Clayton Sth Primary Sch	No. of samples received	: 1
Quote number	: EN/002/05	No. of samples analysed	: 1

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

WORLD RECOGNISED ACCREDITATION

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
Xingbin Lin	Instrument Chemist	Organics

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 insuffient 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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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

* **This report has been amended and re-released to allow the Purchase Order number to be added to the report. All analysis results are as per the previous report. 16/03/09**

Analytical Results

Sub-Matrix: SOIL

Compound	CAS Number	LOR	Unit	Client sample ID: QC2 / Client sampling date / time: 03-MAR-2009 15:00 / EM0901972-001
EA055: Moisture Content				
^ Moisture Content (dried @ 103°C)		1.0	%	15.1
EP068A: Organochlorine Pesticides (OC)				
alpha-BHC	319-84-6	0.05	mg/kg	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2
EP068S: Organochlorine Pesticide Surrogate				
Dibromo-DDE	21655-73-2	0.1	%	80.3
EP068T: Organophosphorus Pesticide Surrogate				
DEF	78-48-8	0.1	%	69.4

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140

Identifibre Pty. Ltd. A.C.N. 059 114 400
Asbestos & Synthetic Mineral Fibre Management Services
Brickley House, 469 King Street, West Melbourne 3003
Phone: (03) 9328 2254 Fax: (03) 9328 2612
Email: contact@identifibre.com.au

Report Date: 10 March, 2009
Test Date: 10 March, 2009
Report Number: 10413-1-bsa
Client: Golder Associates Pty Ltd
Address: Level 3, Burwood Road, Hawthorn, Victoria 3122
Attention: Mr. Travis Shreeve
Date Received: 10 March, 2009
Received From: Mr. Travis Shreeve
Sampled From: As received
Type of Test: Bulk sample analysis was performed by Polarised Light Microscopy supplemented with Dispersion Staining Techniques, in accordance with Identifibre Method No. 2.

Identifibre Number	Sample Description/Size	Sample Details	Analysis Result
Z31826	Cement sheet 60 x 20 x 5 mm	"C.S.1"	Chrysotile (white asbestos) detected Amosite (brown asbestos) detected Crocidolite (blue asbestos) detected
Z31827	Cement sheet 30 x 20 x 5 mm	"C.S.2"	Chrysotile (white asbestos) detected Crocidolite (blue asbestos) detected

Matthew Owen
Approved Identifier
Identifibre Pty. Ltd.

Ken Phillips
Approved Signatory
Identifibre Pty. Ltd.

NATA
WORLD RECOGNISED ACCREDITATION
NATA ACCREDITED LABORATORY NUMBER 15132.

APPENDIX G

Quality Assurance and Quality Control

1.1 Quality Assurance Objectives

The overall assessment of the Golder Associates quality assurance program for the soil and groundwater sampling has been made in terms of completeness. The completeness is equal to the percentage of valid quality assurance and quality control results. Golder Associates considers that a completeness target of 95% is appropriate.

The quality assurance and quality control results for soil that meet the acceptance criteria include the following:

- All field duplicates recording a Relative Percentage Differences (RPDs) less than 50%;
- All primary laboratory internal duplicates recording RPDs less than 30%;
- All primary laboratory spikes for organics falling in the range of 70% to 130%;
- All primary laboratory spikes for in-organics falling in the range of 85% to 115%;
- All primary laboratory internal blanks below reporting limits; and
- An overall completeness of greater than 95% to be achieved.

1.2 Results

Results for primary and secondary duplicates are presented in Table F3, Appendix F at the rear of this report. The following quality assurance measures were undertaken:

- One primary duplicates and one secondary duplicate were collected during the assessment and a total of eight primary samples analysed. This equates to an analysis frequency of 12.5% which complies with the specified collection rate of 5%.
- No rinsate blanks were taken in total during the field works as soil was directly sampled into the containers using disposable nitrile gloves.
- In addition to Golder Associates quality assurance procedures, the primary laboratory conducted its own internal quality procedures to verify their results. A percentage of the samples analysed were tested against measurable standards to check that laboratory methods were working within acceptable limits. Spike samples, internal duplicates and method blanks were all used in the laboratory testing programs to support reported results. Details of these results appear in the certified results supplied by the individual laboratories.

Table 9: Summary of Soil QA/QC Results

QC Sample Type	Number of Results NOT Meeting Data Quality Objectives	Total Number of Results (Individual Analytes)	Percentage Meeting Data Quality Objectives
Primary Duplicates	0	21	100%
Secondary Duplicates	0	21	100%
Internal Duplicates	0	79	100%
Internal Spikes	0	71	100%
Method Blanks	0	214	100%
Overall Completeness	0	406	100%

A summary of the overall results for the soil QA/QC program is provided in Table **Error! Reference source not found.** and discussed below:

- Of the 21 primary duplicate analytes, 0 returned RPDs greater than 50%, representing a conformance level of 100%.
- Of the 21 secondary duplicate analytes, 0 returned RPDs greater than 50%, representing a conformance level of 100%.
- A review of the RPDs for the Internal Duplicate tests indicates that none of the tests conducted produced results above the desired 30% RPD conformance limit. This represents compliance of 100% and provides a good level of confidence in the accuracy of the primary laboratory data.
- A review of the 71 Internal Spike results indicates that one test provided a recovery not within 70-130% for organics, representing a conformance level of 100%. This provides a good level of confidence in the overall accuracy of primary laboratory data.
- A review of the Method Blank tests indicates that all laboratory internal blanks were below laboratory reporting limits. This represents compliance of 100% and provides a good level of confidence in the accuracy of the primary laboratory data.

1.3 QA/QC Summary

The completeness of 100% is above the overall completeness objective of 95%. Based on this, it is considered that the overall data quality generated during the assessment of soils by Golder Associates is of sufficient quality upon which to base decisions for this assessment.

APPENDIX H

Limitations

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At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

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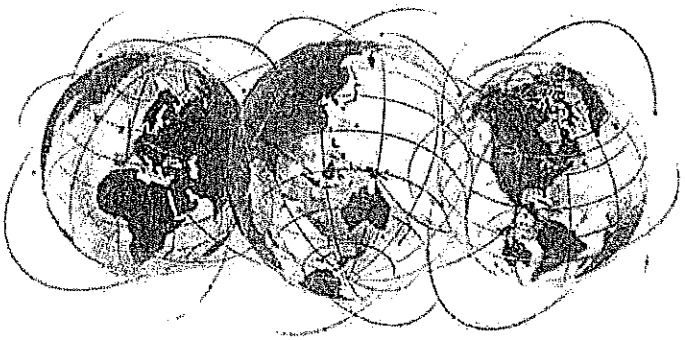

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6 December 2011

D0003:MJN
10879 Clayton West PS Doc Review

Adam Bradley
Department of Treasury and Finance
1 Treasury Place
Melbourne VIC 3000

Dear Adam,

Clayton West Primary School Desktop Document Review

Prensa Pty Ltd (Prensa) was engaged to undertake a desktop document review of reports provided by the Department of Treasury and Finance (DTF), on the behalf of Department of Education and Early Childhood Development (DEECD), relating to environmental works undertaken at the former Clayton West Primary School, Oakleigh South (the Site).

1. Introduction

DEECD propose to divest the former Clayton West Primary School property. The Site is located at Alvina Street, South Oakleigh and the total area of the Site is approximately 20,600 m^2 (2.06 ha). It is understood that the school buildings were demolished in 2008 and that the Site has since remained vacant with vegetation around the perimeter.

2. Background

It is understood that the DEECD requested a Phase 1 Environmental Site Assessment (PESA) and a Phase 2 Environmental Site Assessment (ESA) be undertaken at the Site. The PESA was undertaken by Atma Environmental (Atma) in 2008 and is referenced as *Phase 1 Environmental Site Assessment: Former Clayton West Primary School, South Oakleigh, Victoria,* 12th February 2008. The subsequent ESA was undertaken by Atma and is referenced as *Phase 2 Environmental Site Assessment: Former Clayton West Primary School, South Oakleigh, Victoria,* 15th October 2008.

DTF, on the behalf of DEECD, requested Prensa to undertake a desktop document review to evaluate the suitability of the two aforementioned assessments undertaken at the Site to assist DEECD in divesting and potentially rezoning the Site to a sensitive land use. The document review was conducted with reference to the following documents:

- Ministerial Direction No.1 Potentially Contaminated Land (September 2009); and
- Department of Sustainability and Environment (DSE) Publication – Potentially Contaminated Land – General Practice Note (June 2005).

3. Objective

The objective of the desktop document review is to evaluate the suitability of assessments undertaken at Clayton West Primary School in assisting DEECD with divesting and potentially rezoning the Site.

4. Reports Review

4.1 Atma PESA Report

The PESA undertaken by Atma identified that the school buildings were constructed prior to 1963. Prior to the development of the Clayton West Primary School the Site was used for agricultural purposes, with the aerial photographs indicating that the northern section of the Site was used for cultivation. A quarry was identified adjacent to the south west of the Site, the aerial photographs indicated that the quarry had been developed into a recreational park by 1984. Based on the Atma site inspection, it was identified that a limited amount of fill may have been used for the landscaping of the children's play area on the eastern boundary of the Site.

The PESA identified two (2) underground storage tanks (USTs) at the Site, which serviced boiler rooms adjacent to the USTs. The capacity of the USTs could not be determined at the time of the PESA.

Based on the findings of the PESA Atma recommended that an ESA be undertaken at the Site, which involved the establishment of 31 gridded locations to assess the potential for contamination to be present on site relating to the importation of fill. Atma also recommended the removal and validation of the USTs, along with the removal of any associated contamination. A groundwater investigation was recommended due the presence of the two USTs and the potentially shallow groundwater.

4.2 Atma ESA Report

The Atma Phase 2 ESA comprised the collection of ninety (90) soil samples from thirty (30) gridded soil sampling locations and the collection six (6) soil samples from two (2) targeted soil sampling locations adjacent to the USTs. The assessment also involved the removal of the USTs and collection of validation samples from the walls and base of the UST pits.

The soil sampling identified fill in numerous locations, comprising silty sand with gravel and brick fragments in some locations. The natural soil comprised silty sand and sand.

The gridded soil samples were analysed for a combination of the following:

- Two (2) EPA screens:
  - Mono-cyclic aromatic hydrocarbons (MAH);
  - Total recoverable hydrocarbons (TRH);
  - Polycyclic aromatic hydrocarbons (PAH);
  - Polychlorinated biphenyls (PCB);
  - Organochlorine pesticides (OCP);
  - Chlorinated hydrocarbons (CHC); and
  - Phenolic compounds.
- Fifteen (15) samples analysed for metals; and
- Eight (8) samples analysed for PAH.

The targeted soil samples collected from adjacent to the USTs were analysed for TRH.

The soil samples collected from the walls of the UST excavation were analysed for TRH and benzene, toluene, ethylbenzene and toluene (BTEX). The samples collected from the base of the UST were analysed for TRH, BTEX, PAH and phenols.

The analytical results for the gridded and targeted samples were compared to the adopted ecological investigation levels (EILs) and the adopted National Environmental Protection Measure (NEPM) health investigation levels (HILs) for low density residential (HIL A) land use. The gridded and targeted soil samples analysed reported contaminant concentrations less than the adopted EILs and HIL A.

The analytical results for the validation samples were compared to EPA Publication 448.3, *Classification of Wastes*. The contaminant concentrations for the validation samples collected from the UST pits were less than the maximum allowable concentrations for Fill Material and were therefore classified as Fill Material.

Based on the analytical results from the Atma assessments, Atma concluded that *'the site does not contain contaminant levels potentially harmful to human health'.*

A groundwater investigation was considered unnecessary by Atma as the results indicated low to non-detectable levels of contaminants and no other potential groundwater contamination sources were identified on site.

5. Findings

The site history review was undertaken by Atma in general accordance with Australian Standard 4482.1, *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: non-volatile and semi-volatile compounds*, 2005. The site history identified that the Site was historically used for agriculture prior to being developed into Clayton West Primary School.

Table 1 in the DSE General Practice Note separates specific land uses and activities into high, medium and low potential for contamination to occur. The PESA undertaken by Atma identified two (2) USTs associated with boilers and that fill may have been imported onto the Site for the landscaping of children's play areas. Table 1 of the Practice Note lists the presence of USTs with no evidence of leaks as having a medium potential for contamination to occur. The Atma assessment reported that the validation and stockpile samples did not have an odour or staining, the photo-ionisation detector (PID) readings were low and the TRH concentrations were less than the laboratory's limit of reporting (LOR). Table 1 also lists the importation of fill as having a medium potential for contamination to occur.

Table 2 of the Practice Note outlines the required level of assessment for sites being developed for a sensitive land use (i.e. residential). For a site being developed for a sensitive land use with a medium potential for contamination to be present, a site assessment from a suitably qualified environmental professional is required if insufficient information is available to determine if an environmental audit is appropriate.

It is considered that the site history in the Atma Phase 1 ESA identified the previous land uses at the Site and provided sufficient information to develop an appropriate sampling and analytical schedule for the Phase 2 ESA. The gridded sampling density and analysis undertaken as part of the Phase 2 ESA was considered appropriate based on the past uses and area of the Site.

The Phase 2 ESA undertaken by Atma involved soil sampling in a grid across the Site, two targeted boreholes adjacent to the USTs and the validation of the UST pits. The density of sampling locations is consistent with the minimum sampling density outlined in Australian Standard 4482.1-2005 for a site 2.06 ha in area. This sampling density provides a contaminant hotspot detection radius of 15.2 m. The analytical schedule was consistent with the primary contaminants of concern identified in the Atma Phase 1 ESA. The analytical results of the gridded and targeted soil samples reported contaminant concentrations less than the adopted EILs and 'A' HILs for a low density residential land use.

The analytical results for the validation works were compared to EPA Publication 448.3. This publication relates only to the classification of soil for off-site disposal and does not provide investigation levels for environmental or human health risks. The analytical results should have been compared to the NSW EPA (1994) *Guidelines for Assessing Service Station Sites*, which was the industry standard document at the time of the assessment. The current standard document for the comparison of analytical results is the Canadian Council of Ministers of the Environment (CCME) (2001) *Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*. The analytical results provided with the Atma Phase 2 ESA were less than the laboratory limits of reporting (LOR), which provides an indication that the areas surrounding the UST are unlikely to have been impacted.

The information relating to the validation works undertaken during the UST removal works indicated that validation samples were collected from the base and walls of the excavations. The position of the validation samples on the walls of the excavations is not clear in the information provided by Atma. However, based on the field observations (i.e. low photo-ionisation detection (PID) readings, lack of odour and staining), the laboratory results of the stockpiled tank packing sands and validation samples, it appears that the walls of the excavations are unlikely to have been significantly impacted.

Therefore, based on the results of both the UST validation and the gridded and targeted soil sampling, the Site is not 'potentially contaminated land' as defined in the DSE Planning Guidance Note. It would be considered unlikely to pose a potential health risk to future users of the Site in the event it is rezoned to a more sensitive land use and therefore it is unlikely to require an environmental audit (subject to local council approval).

Asbestos removal works were undertaken at the Site prior to the demolition of the school buildings as outlined in the Enviro Protect report Final Clearance Certificate – Asbestos Removal, 4th August 2008 (ref: 19852). The asbestos removal works were undertaken by AWARE from the 16th June to the 8th July 2008 and the asbestos air monitoring works were undertaken by Enviro Protect. Enviro Protect state that the visual inspection following the asbestos removal works confirmed the visible asbestos materials had been removed from the areas outlined in the Enviro Potect report.

prensa

Should you have any questions or queries regarding the report, please do not hesitate to contact Steve Bos or myself on 9508 0100.

Yours sincerely,

Marcus Neve

Environmental Consultant

Prensa Pty Ltd

Statement of Limitations

This document has been prepared in response to specific instructions from the Department of Treasury and Finance to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

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The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of the Department of Treasury and Finance and Prensa recognises that that the Department of Treasury and Finance will consider their specific needs and the business risks involved. Prensa does not accept any liability for losses incurred as a result of the Department of Treasury and Finance not accepting the recommendations made within this report.

Atma *Environmental*

ABN 37 080 478 922

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT: Former Clayton West P.S., Alvina Street, Oakleigh South, Victoria.

Prepared for:

Department of Education and
Early Childhood Development
2 Treasury Place
EAST MELBOURNE, VIC 3002

Project Ref. 509 Clayton West PS
Date: 12 February 2008

Member: Australian Contaminated Land Consultants Association

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Report Finalisation & Distribution

PROJECT REFERENCE: #509 Clayton West ESA

REPORT TITLE: Phase 1 Environmental Site Assessment: Former Clayton West PS, Alvina Street, Oakleigh South, Victoria.

DATE: 12th February 2008

PROTECT MANAGER:

Flynn Clarke, Environmental Consultant

REVIEWED/APPROVED BY:

Glenn Berry, Principal

DOCUMENT STATUS:

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EXECUTIVE SUMMARY

The subject property (known as Clayton West Primary-School) has undergone a Phase 1 Environmental Site Assessment (ESA) including a site history review and site reconnaissance visit the objective being to identify past uses that could potentially contribute to site contamination.

Locally, the underlying geology consists of Brighton Sands which may be of high permeability. The site consists of a 2.06 ha lot, containing three primary school buildings (built ~1960s), two sheds, asphalt playing courts and an oval on the southern portion of the site. The site history review suggests the site had been used for agricultural purposes prior to the establishment of the primary school or was recently cleared land. The northern portion of the site may have been used as a market garden, presenting a medium level of contamination risk, however, this is not confirmed. From at least 1963 to the current day the site has been occupied by the primary school. Two underground fuel tanks are identified at the site which do present a higher risk of site contamination.

Areas of potential environmental concern noted after the site reconnaissance include two underground fuel storage tanks. Some limited amounts of fill material in the vicinity of the children playground should be screened as part of the site testing.

Sufficient and appropriate sampling consistent with the Australian Standard should be completed for the site as proposed. Given the results of the Phase 1 site assessment, a soil investigation would need to include grid-based sampling at 31 locations with at least one of these in the playground area mentioned.

UST removal and validation to ensure all contamination has been removed along with a groundwater investigation to ascertain if leakage has occurred is recommended.

1 INTRODUCTION

'The Site' located at Alvina Street, Oakleigh South, Victoria is a relatively smaller disused Primary School comprising of three school buildings, two sheds, children's play area and an oval. The school, situated in a residential area, operated between ~1960 and December 2006.

2 OBJECTIVES AND SCOPE OF ASSESSMENT

2.1 Assessment Objective

This assessment is for the purpose of due diligence. The objective of this report was therefore to collect and assess historical data and other records of its previous use, to conduct a site inspection to determine the potential of any soil and groundwater contamination to be present at the site, the nature of the contaminants (if any), and the possible locations of contamination, and to document the findings.

2.2 Scope

The investigation was commissioned by Deanne Leaver of the Department of Education and Early Childhood Development on the 10th of December 2007 and was undertaken in general accordance with our proposal dated 09/11/2007 (ref. Q07433). The scope of work comprised of:

- Documentation of the site history information gathered including review of aerial photos, standard records review, all other desktop information.
- Site reconnaissance visit by a qualified environmental specialist;
- Provision of recommendations for further actions if required.
- Preparation of Phase 1 Environmental Site Assessment (ESA) report including all historical data.

3 SITE AND REGIONAL SETTING

3.1 Regional Setting

The location of the site is shown on Figure 1. Details relating to the general features around the site and general land uses are listed below:

- The site is approximately 16 km southeast of Melbourne City centre in the City of

Monash.

- The site is zoned *'Public Use Zone Education.*
- The adjacent properties to the north, east and south are zoned *'Residential 1 Zone'*, while to the west the adjacent land (a former quarry) is zoned *'Special Use Zone 2'*, and is subject to an environmental audit overlay. There is no Environmental Audit Overlay over the site.
- Currents uses adjacent to the site include residential and a plant nursery to the north. A former quarry borders the southwest side, but is disused.
- The Melway location reference is 78-K1.
- Regionally, drainage is thought to be towards the south to south-west.

3.2 Site Characteristics and Improvements

Figure 2 shows the main site features. A summary is provided below of characteristics observed during the site reconnaissance:

- The site under investigation is legally identified by the land title vol: 8271/fol: 535 having a square area of 2.06 ha (approximately 137 m x 148 m).
- The northern portion of the site contains school buildings, while the southern portion of the site contains an oval and an asphalt basketball court. A children's play area is located on the eastern boundary of the site.
- The site is bordered by wooden fence to the north, east and south.
- A limited amount of fill material associated with landscaping the childrens play area was identified.
- The site is relatively flat with a small western to south-western facing aspect.
- There are no ditches, ponds or other water bodies present.
- Site surfacing includes cement/bitumen hardstand around buildings and grass.

Photographs of the site taken during the site reconnaissance visit are located in Appendix A.

3.3 Topography

The site is slightly sloping to the west to south-west. The site is located at approximately 66 m above sea level. Locally, topography is undulating low hills. The overall vertical relief of the site from the highest (NE corner) to lowest (SW corner) point is approximately 2-3 m.

3.4 Surface Water Receptors

Inspection of the site did not reveal the presence of any springs or seeps. Based on surrounding topography, the anticipated direction of groundwater flow is to the south to

south-west. The nearest surface water receptor appears to be wetlands at Karkarook Park several km to the southwest.

3.5 Local and Regional Geology

According to the Geological Survey of Victoria, Melbourne map sheet (1:250,000 scale), the property in South Oakleigh is located on Brighton Group (Tertiary Pliocene): non-marine sands, sandy clay, silt and gravel; locally altered to quartzite and porcellanite also marine sand, shelly silty sand, ferruginous sand. No major faults were shown to exist across the site. See Figure 3 for details.

3.6 Regional Hydrogeology and Groundwater Bore Database Search

With reference to the *Victorian Groundwater Beneficial Use Map Series South Western Victoria Water Table Aquifers* (Dept of Conservation and Natural Resources, 1995) it was determined that the local groundwater is expected to fall into '**Segment B**', as defined by the *State Environment Protection Policy (Groundwater of Victoria).* The anticipated concentration of Total Dissolved Solids (TDS) would be between 1,001 and 3,500 mg/L for this segment. Under Segment 'B' the following beneficial uses of groundwater are protected:

- Maintenance of Ecosystems;
- Potable mineral water supply;
- Agriculture, parks and gardens;
- Stock water;
- Industry;
- Primary Contact Recreation;
- Buildings and Structures.

A search of the Department of Sustainability and Environment (DSE) Groundwater Database found no listed groundwater bores to be located within a 2 km radius of the site.

The estimated depth to groundwater is considered to be approximately 6-12 m below ground level. Signage on the inside of the southwest fence line nearest a former quarry warns of quicksand beyond.

This may signify groundwater at a relatively shallow depth in the vicinity of the site.

4 RECORDS REVIEW

4.1 Prior Environmental / Other Reports

No previous environmental, geotechnical or other reports for the site under investigation were made available to Atma Environmental as part of this assessment.

4.2 Standard Environmental Record Sources

In conducting an environmental site assessment, numerous standard record sources were reviewed in connection with the property, to help identify recognised environmental conditions in connection with the property. To help assess the likelihood of problems from migrating contaminants or hazardous substances, some records reviewed not only pertain to the property under investigation, but also to properties within a minimum search distance. A minimum search distance of 1 km was used when reviewing these standard environmental record sources.

The following sources were checked in conducting this site assessment:

List of Issued Certificates and Statements of Environmental Audit (Victoria EPA, 16th November 2007).

Four Certificates of Environmental Audit were found within one kilometre of the site. The closest is located 200 m away to the north-east of the site on the corner of Coombs and Scotsburn Avenues (29/03/2000). Two of the certificates were located 500 m to the south on Coonil Street (4/11/1998 and 20/05/98). The remaining certificate was issues for 1213 Centre Road, 600 m to the south-east of the site (14/03/2000).

The number of Certificates (vs. Statements) of Environmental Audit suggests that site contamination arising from typical land uses in the area is not serious.

List of Treatment and Disposal Facilities for Prescribed Wastes (Victoria EPA Website, current).

No prescribed waste or disposal facility was found to be within 1 km of the site.

EPA Contaminated Sites Register Search (LandData website, current).

A LandData search on the EPA Register of Priority Sites was negative. There are no sites subject to EPA Clean Up Notices in close proximity to the site being assessed. The extract from the EPA Register of Contaminated Sites is provided in Appendix B.

Department of Sustainability and Environmental Website, Knox Planning Scheme (9th January 2008)

The above reference was checked to determine the current zoning of the site under assessment and to determine if the land is affected by environmental overlays.

According to the Monash Planning Scheme, the site is zoned *'Public Use Zone Education'*. There are no environmental or heritage overlays affecting the land. However it must be noted that the adjacent land to the west (former quarry) is subject to an environmental audit overlay. Aside from the adjacent land to the west (*'Special Use Zone 2'*) all of the surrounding area is zoned *'Residential Zone 1'*.

Energy Safe Victoria – Cathodic Protection Systems Search.

Underground fuel tanks may be protected against corrosion by cathodic protection systems and registered with Energy Safe Victoria. A search of the Cathodic Protection Systems Database failed to identify any cathodic protection systems that were registered at Clayton West Primary School, Alvina Street, Oakleigh South, Victoria (see Appendix C).

WorkSafe Dangerous Goods Database Search.

WorkSafe maintains records of premises storing or using significant quantities of hazardous substances. WorkSafe Victoria has no record of Dangerous Goods Storage and Handling for the site under investigation (see Appendix D).

Historical Water (Melbourne Metropolitan Board of Works) Plans Search.

The Melbourne and Metropolitan Board of Works (MMBW), *"Municipalities of Mulgrave & Oakleigh."* map was viewed for the site. No online MMBW Detail Plan was available for the site.

4.3 Review of Other Historical Information Sources

Land Titles

Atma Environmental conducted a review of the current and historical parent land titles to identify past owners of the land. A copy of the current land title can be viewed in Appendix E.

Current: The current property title reference is Lot 1 on Plan of Title 232531K (derived from vol. 8271 fol. 535; Proprietor: The Minister of the Crown Administering the Education Acts since 1960).

Historical: Prior to the current registered owner the site was derived from the larger parent title Vol. 4447 fol. 226 held by Fanny Heylbut, *Married Women* (1921). This parent land title

was subsequently purchased by James Riley, *farmer* (1921), followed shortly by Catherine Annie Machan, *Married Women* (1922) and later by Ada Rose, *Married Women* (1937). The parent title (Vol. 3981 fol. 129: 1916) was in turn derived from the larger parent after several swift title changes (1913 and 1914) from title vol. 2424 fol. 664, created in 1892 in name of Charles Edward Ernest Linphelby, *Esquire.*

There were no previous land owners indicated of an industrial nature that present a risk of contamination. This does not necessarily preclude past industrial uses of the site.

Melway Edition 1 (1966) Historic Map.

Review of a historic Melway (Edition 1, 1966) map shows Clayton West State School occupying the current site (Appendix F). Two locations of environmental concern were found to be within 1 kilometre of the site. The Oakleigh Council depot is located about 300 metres to the north-east; and the Oakleigh Municipal Abattoirs is located about 900 metres to the north.

Aerial Photographs

As part of the site history review, aerial photographs for 1951, 1963, 1984 and a recent image were reviewed.

Table 1. Summary of Aerial Photograph Site Observations

DATE	SITE HISTORY OBSERVATIONS	FIG	REFERENCE
1951	Onsite: The site appears to consist of two large paddocks (north/south division). The north paddock appears to have been used for cropping purposes or is recently cleared (note long striations in the soil). The southern paddock is clear grass with some trees. Offsite. A long narrow building/structure is located on the eastern boundary, possibly of agricultural use. A similar long building is located north of the site. Land use NW and west is undeveloped with trees. Land to the south is market garden plots. A quarry pit is located SW/adjacent of the site. The surrounding land use is predominantly agriculture with scattered dwellings across the landscape.	4	Aerial photo – Melbourne and Metropolitan Project No. 2, Run 21, Photo 165; 1:12,000; B/W.
	Onsite: The current site outline is now distinct. The site is now occupied by the main school building and two sheds but not the two additional classroom buildings (in the mid-northern section of the site). School appears to still be under construction with soil disturbance in the vicinity of it. There is no oval.		Aerial photo – Melbourne (1963) Project, Run 20, Photo 142; 1:9,600; B/W.

1963	Offsite: Significant change has also occurred offsite. The existing surrounding farmland has been mostly replaced with residential properties. Immediately north of the site large long structures can be seen which may be the remnants of a past agricultural or commercial (nursery?) enterprise. The quarry adjacent to the south-east corner of the site has been expanded closer to the site and appears to have open water on top.	4	
1984	Onsite: An oval has appeared in the southern portion of the site. Two additional classroom buildings can bee seen on the north-west corner. Little other change has occurred. Offsite: Land off the SE corner (part of the site c. 1966 Melway) is now residential as are properties to the west across Alvina. Little change has occurred offsite. The property immediately to the north appears to have further developed as commercial or industrial premises since the previous photo. The adjacent quarry is now disused.	5	Aerial photo – Standard Mapsheet Photography, Run 12, Photo 77; 1:10,000; B/W.
Recent	Onsite: Little change has occurred on site with the exception of what appears to be construction of the playground in the SE corner of the site and expansion of the parking lot. Offsite: Little change has occurred offsite	5	Google Earth Image (2007)

The air photo review identifies that the site was either agricultural or recently cleared land prior to ~1960s with the northern portion of the property possibly used for a market garden (this is not definitive). The air photo review also confirms that the site has been occupied by Clayton West Primary School since at least 1963. The air photo review did not identify any other non-school uses of the site although some commercial uses directly adjacent to the site are clear.

5 SITE RECONNAISSANCE

Glenn Berry and Flynn Clarke of Atma Environmental conducted a site visit and walk through of the property on 10th January 2008. The entire site was inspected during the site visit to ensure all areas were appropriately covered prior to comment (see Figure 2 for site details). Photos taken during the site reconnaissance are presented in Appendix A.

Hazardous Substances in Connection with Identified Uses

No hazardous substances used in conjunction with the current or former site uses were identified on the site during site reconnaissance.

Storage Tanks

Two underground fuel storage tanks were found on site. Both tanks are positioned in two separate small alcoves on the northern side of the main building. Both tanks service boiler rooms situated adjacent to them and the capacity of the tanks are unknown (see Photograph 9 and 10 in Appendix A). Attempts to gauge the contents were not successful as dip sticks for the tanks were missing, however caps were removable.

Underground tanks on adjacent properties were not identified, however, these were only inspected from within the school grounds.

Solid Waste

Minor amounts of solid waste were identified at a few locations. The waste consisted mainly of building material debris (see Photograph 1 in Appendix A). No other solid waste was present on the site at the time of the site visit and no adjacent waste landfill sites were noted during the site visit. However a former quarry is situated adjacent to the south–western boundary of the site.

Fill Material

During the site visit limited amounts of fill was noted. The main location of fill present on site is though to be in the south eastern portion of the site where a playground area has been built up (see Photographs 5 in Appendix A). Minor amounts of fill associated with landscaping the area was also identified (mainly gravel). The fill material as noted appeared to be free of extraneous inclusions or potentially contaminating substances.

Other Observations

- The overlying aspect of the site is sloping moderately north-east to south-west.
- Two storage sheds are located on the western boundary of the site. Both sheds contain innocuous items and are not a cause of environmental concern (see Photographs 4 in Appendix A).
- Disturbance to the asphalt on the basketball court may be evidence of previous sampling (see Photographs 6 in Appendix A).
- There were no unnatural odours associated with the site or the soil at the time of the site visit.
- Vegetation on the site did not appear to be affected.
- There is a ~1 m high retaining wall with the adjacent property located to the south of the footpath connecting the site with the road to the east. Other adjoining properties appear to be on level with the site.

Interviews

No interviews with persons having knowledge of the site history were conducted during the course of the investigation. Atma Environmental was accompanied by a regional representative of the Department, but he had no additional information on the site.

6 SOIL CONTAMINATION POTENTIAL

6.1 Past, Current and Proposed Use of the Property

Aerial photo records suggest that up to the 1960s the site was used for agricultural purposes. During this period the title of the property was privately owned. The aerial photo review suggests the northern section of the site may have earlier been used as a market garden. In 1960 the property was bought by the Crown and the current primary school was built shortly after that. The site has been used as a primary school up until the present day.

The proposed future use of the site is to rezone the land to residential so it can be offered for public sale.

6.2 Potentially Contaminating Uses

Any commercial, mining, industrial or agricultural activity has the potential to leave some site contamination. However, some activities intrinsically give rise to contamination more frequently than others. The Department of Sustainability and Environment General Practice Note "*Potential Contaminating Land Uses*" (June 2005) lists specific high-risk and medium-risk contamination industries and land uses that may result in contamination.

Table 2. Potential Contaminants and Possible Sources.

POTENTIAL CONTAMINANTS	POSSIBLE SOURCE	RISK
Various	Fill (imported) used for landscaping playground, etc	Low
TRHs, MAHs, PAHs, Pb	Leakage from two USTs identified.	High
Pesticides, hydrocarbons, heavy metals	Market Garden (inconclusive)	Medium

A comparison of the documented site history and observations of the current site condition to the medium and high-risk uses identified by DSE (2005) indicates that matching high-risk use include "Underground storage tanks" and one suspect/potential matching medium-risk

use: "Market Gardens". The use as a market garden can not be confirmed. "Filling (imported soil)" is listed as a medium-risk use, however, in this instance the fill appears to be limited to landscape sand or aggregate, posing a low risk of contamination.

6.3 Groundwater

Potential sources of groundwater contamination for this site include:

- Onsite point source contamination present from the two USTs situated on site.
- Other commercial/industrial land uses up gradient of the site.

There are no nearby service stations and there are no further point sources of groundwater contamination identified. Taking into consideration the depth of groundwater (likely 6-12 m), the sandy nature of the local geology and the two tanks, there is some risk on the site amenity due to possible groundwater contamination.

7 CONCLUSION AND RECOMMENDATIONS

Prior to development of the primary school on site in the 1960s aerial photos suggest prior property land use on site was limited to agricultural purposes. An aerial photo from the early 1950s suggests the northern portion of the property may have been used as a market garden prior to 1951. The historical review did not identify any other uses of the site.

Reconnaissance of the site identified a limited amount of fill material onsite associated with landscaping of the area and formation of the children's play area on the western boundary. Two USTs were also identified which supply fuel to two boiler rooms in the main school building. There are no overt areas of immediate environmental concern found onsite such as spills or unusual soil staining or outcropped waste material.

A structured approach to investigation of the site would next involve a Phase 2 investigation (soil sampling) as previously proposed. The 31 grid-based locations as proposed in compliance with the Australian Standard AS4482.1 are considered sufficient in order to appropriately test the site for contamination provided at least one of these coincides with fill material used for playground construction.

Removal and validation of the underground fuel tank is also recommended along with removal of any associated contamination in accordance with EPA Guideline #888 *Guidelines on the Design, Installation and Management Requirements for Underground Petroleum Storage Systems (UPSS).*

Given the proposed sensitive land use, presence of two USTs, potentially shallow/sensitive groundwater, and proximity of an up-gradient commercial property; an investigation of groundwater to ascertain its condition is also recommended.

8 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The report consists of the scope of work outlined previously. This report describes the work undertaken and has been compiled for the use of the Department of Education and Early Childhood Development only. Its conclusions are only valid for the purpose for which it was requested.

It is valid only when it is in original form, and any person or company other than the Department of Education and Early Childhood Development who rely on the report without specific reference to and permission from Atma Environmental Pty Ltd does so at their own risk.

While every care has been taken in the compilation of this report, to the extent that its conclusions are based on the analysis of the data made available by your organisation or by a third party, no responsibility or liability is accepted for consequences arising from either errors or omissions in that data, or from factors or data which were not made available to Atma Environmental Pty Ltd or which Atma Environmental Pty Ltd could not ascertain by reasonable inquiry in the ordinary course of its investigation.

Environmental site assessments document property conditions at the time they are conducted. These conditions may change over time. The site assessment has not specifically considered above ground issues such as lead-based paint and asbestos containing building products.

9 REFERENCES

Australian Standard AS 4482.1 - 2005, "*Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*", 2005.

Department of Natural Resources and Environment "*Victorian Groundwater Beneficial Use Map Series, South Western Victoria Water Table Aquifers*", 1995.

Department of Sustainability and Environment "*Potentially Contaminated Land*", General Practice Note, June 2005.

Department of Sustainability and Environment, "*EPA Contaminated Sites Register*", http://www.land.vic.gov.au

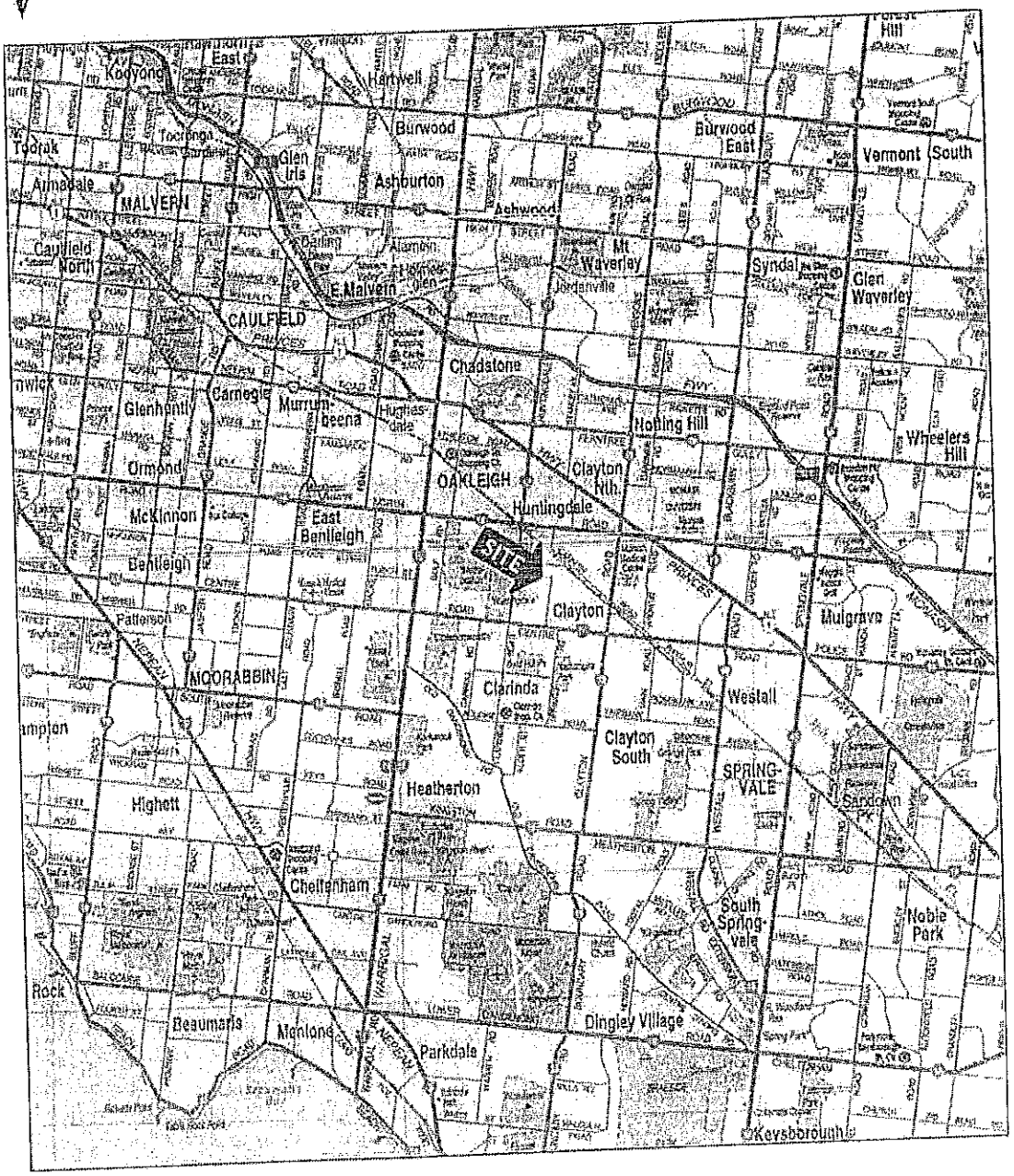
Geological Survey of Victoria, "*Melbourne Map Sheet*", 1:250,000 scale, Government Printer 1971.

National Environment Protection Council (NEPC), "*National Environment Protection (Assessment of Site Contamination) Measure*", 1999 [ISBN 0-642-32312-7].

Victorian Environmental Protection Authority, "*State Environmental Protection Policy (Groundwaters of Victoria)*", EPA Victoria Publication 288, October 1997.

Victorian Environmental Protection Authority. *"List of Treatment and Disposal Facilities for Prescribed Wastes"*, http://www.epa.vic.gov.au

Victorian Environmental Protection Authority. *"List of Issued Certificates and Statements of Environmental Audit"*, EPA Victoria, 16th November 2007.



Atma *Environmental*

Client: Department of Education and Early Childhood Development

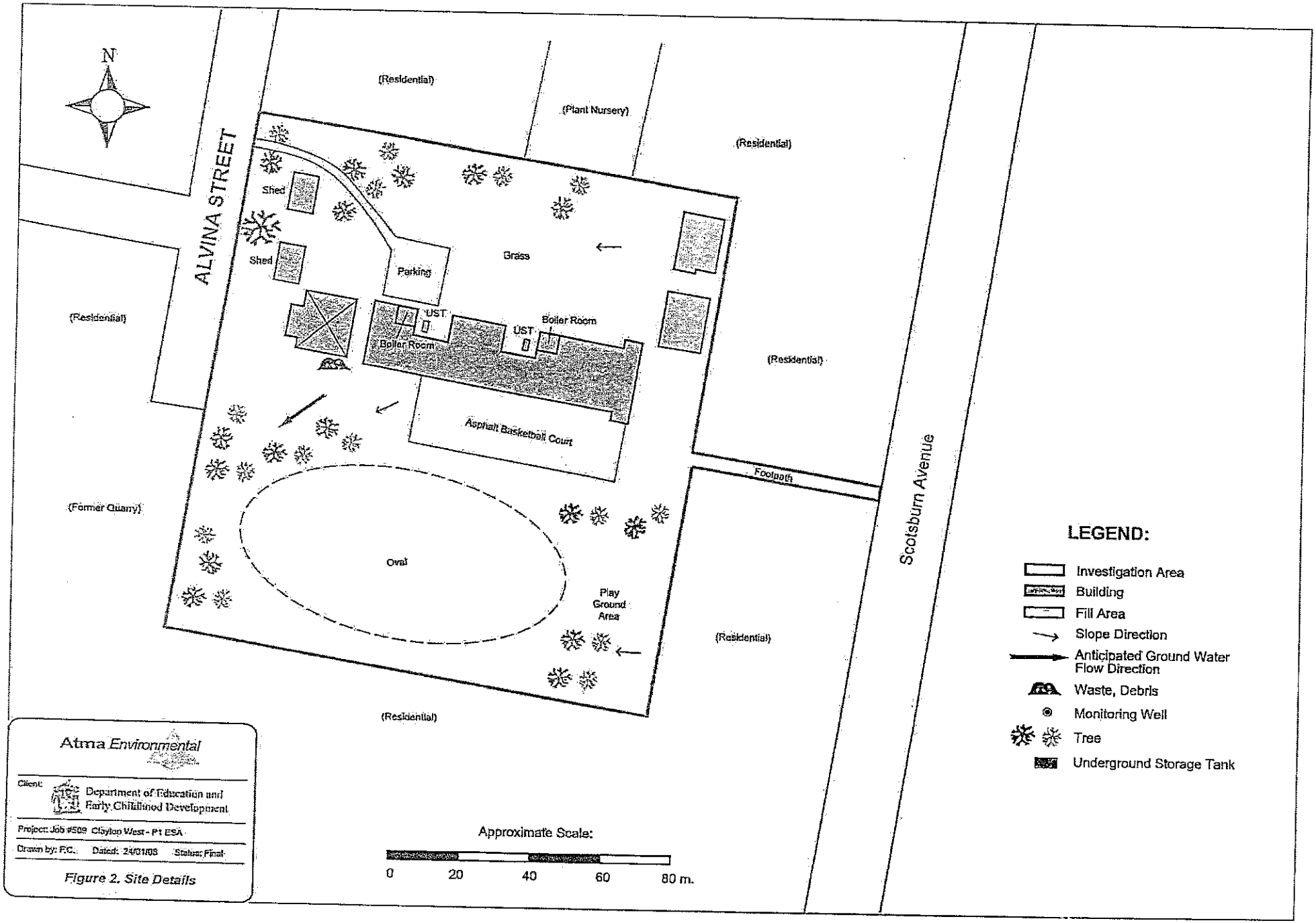
Project: Job #509 Clayton West - Phase 1 ESA

Drawn by: F.C. Dated: 24/01/08 Status: Final

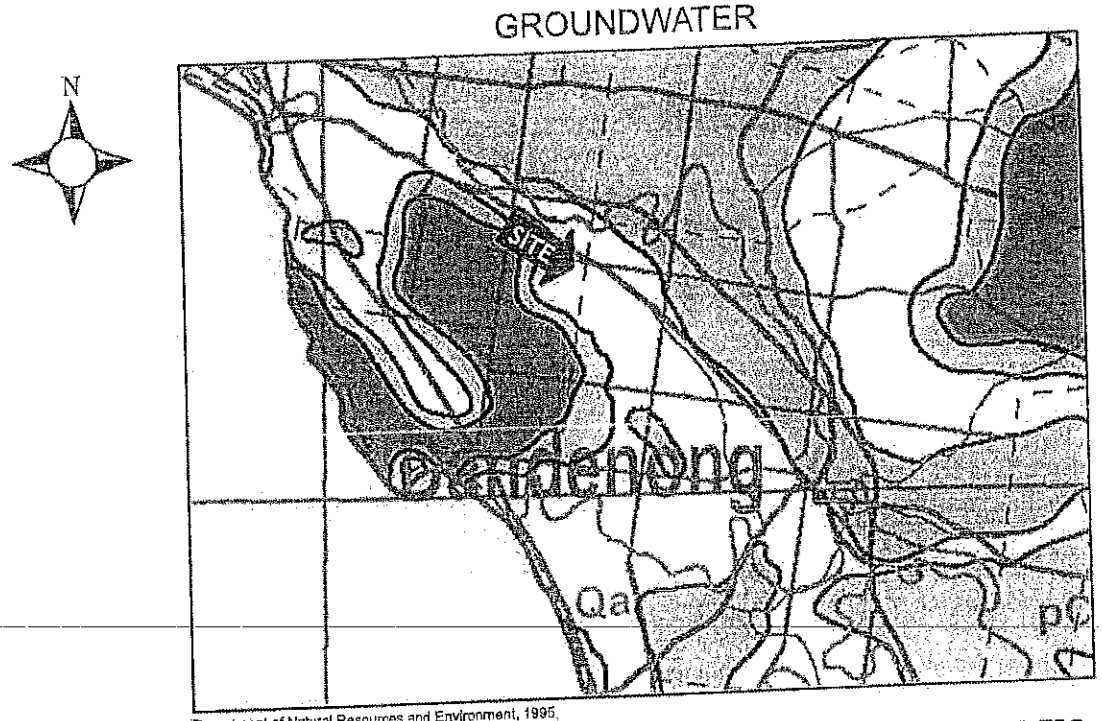
Figure 1. Site Location

Approximate Scale:

0 500 m 1 km 2 km


N
ALVINA STREET
(Residential)
(Plant Nursery)
(Residential)
Shed
Shed
Parking
Grass
(Residential)
UST
Boiler Room
Boiler Room
UST
(Residential)
Asphalt Basketball Court
Footpath
(Former Quarry)
Scotsburn Avenue
Oval
Play Ground Area
(Residential)
(Residential)
LEGEND:
Investigation Area
Building
Fill Area
Slope Direction
Anticipated Ground Water Flow Direction
Waste, Debris
Monitoring Well
Tree
Underground Storage Tank
Approximate Scale:
0
20
40
60
80 m.
Atma Environmental
Client:
Department of Education and Early Childhood Development
Project: Job #509 Clayton West - P1 ESA
Drawn by: F.C. Dated: 24/01/05 Status: Final
Figure 2. Site Details

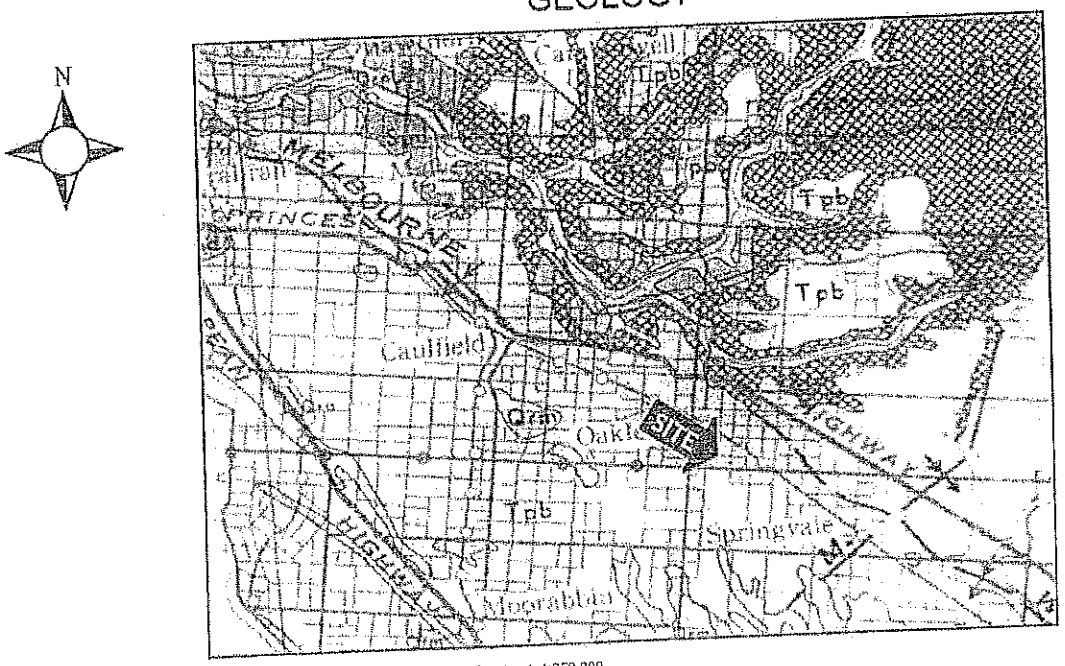
GROUNDWATER



Department of Natural Resources and Environment, 1995.

Segment 'A1' - 0 - 500 mg/L TDS
Segment 'A2' - 501 - 1000 mg/L TDS
Segment 'B' - 1001 - 3500 mg/L TDS
Segment 'C' - 3501 - 13,000 mg/L TDS

GEOLOGY



Geological Survey of Victoria, Melbourne Mapsheet, 1:250,000

Qrc — Fan deposites, fault aprons, high level alluvium
Tpb — Non-marine sand, sandy clay, silt, gravel
Sud — Bedded sandstone, minor interbedded mudstone and shale
Sd — Massive mudstone, interbedded with thin sandstone

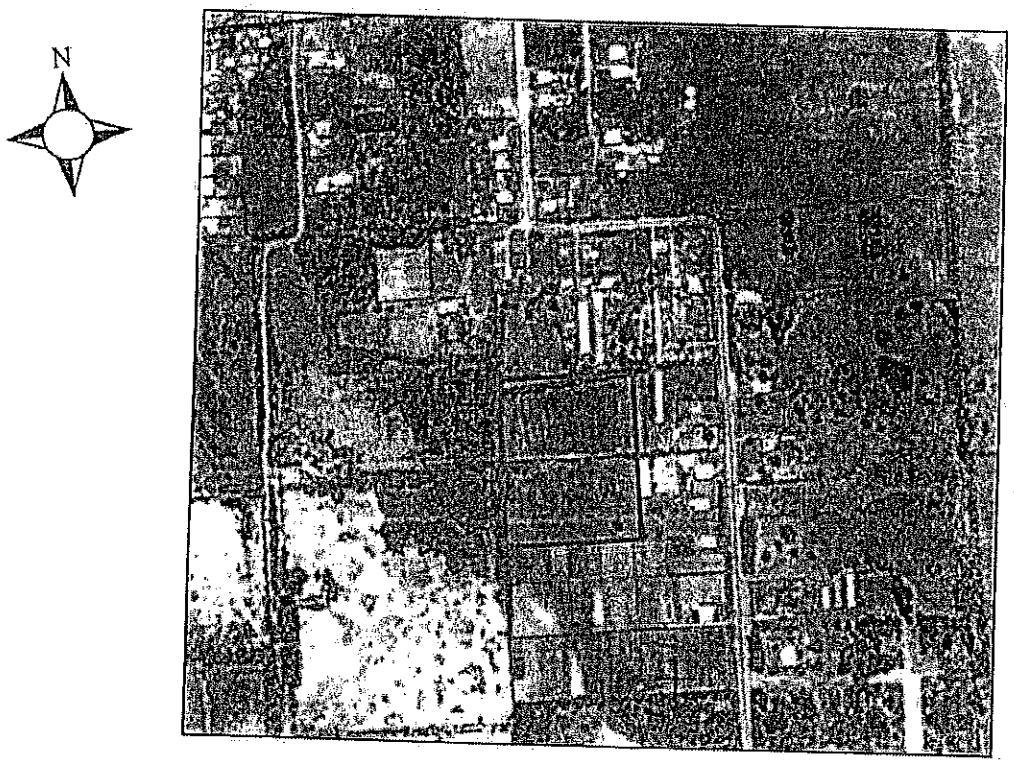
Atma *Environmental*

Client: Department of Education and Early Childhood Development

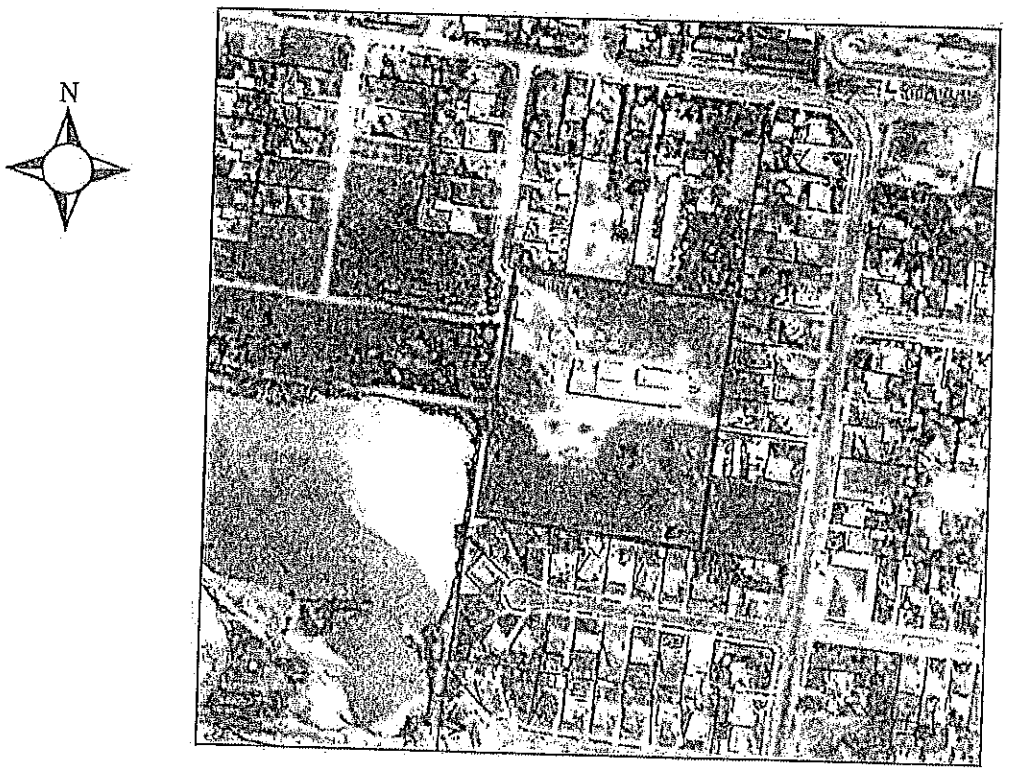
Project: Job #509 Clayton West - Phase 1 ESA

Drawn by: F.C. Dated: 27/12/07 Status: Final

Figure 3. Groundwater and Geology



1951



1963

Site Boundary

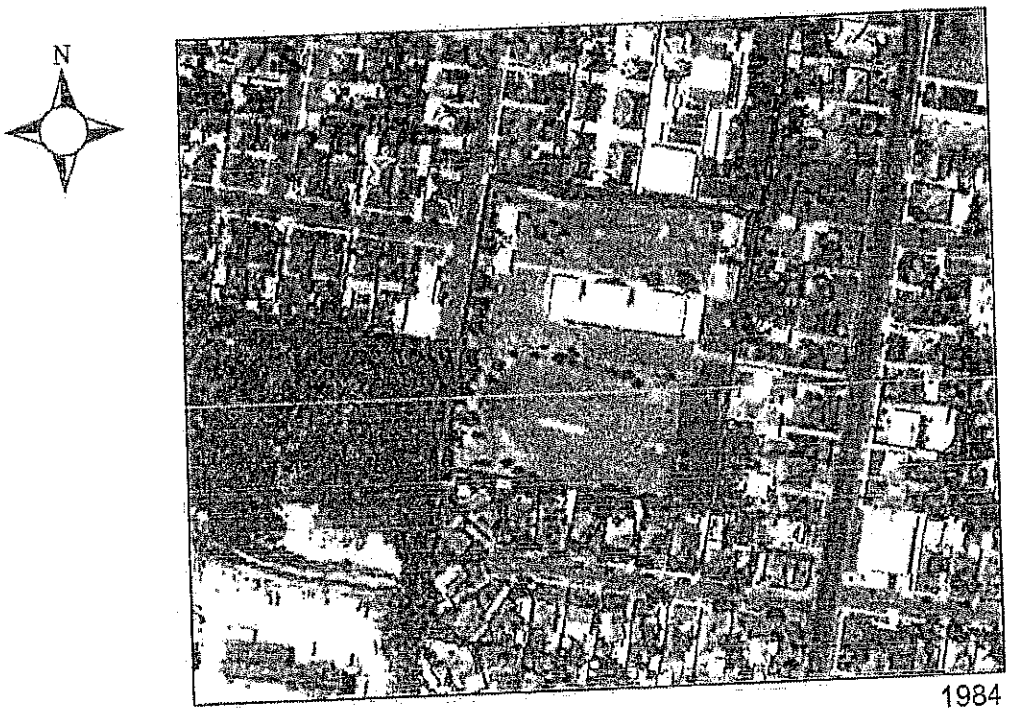
Atma *Environmental*

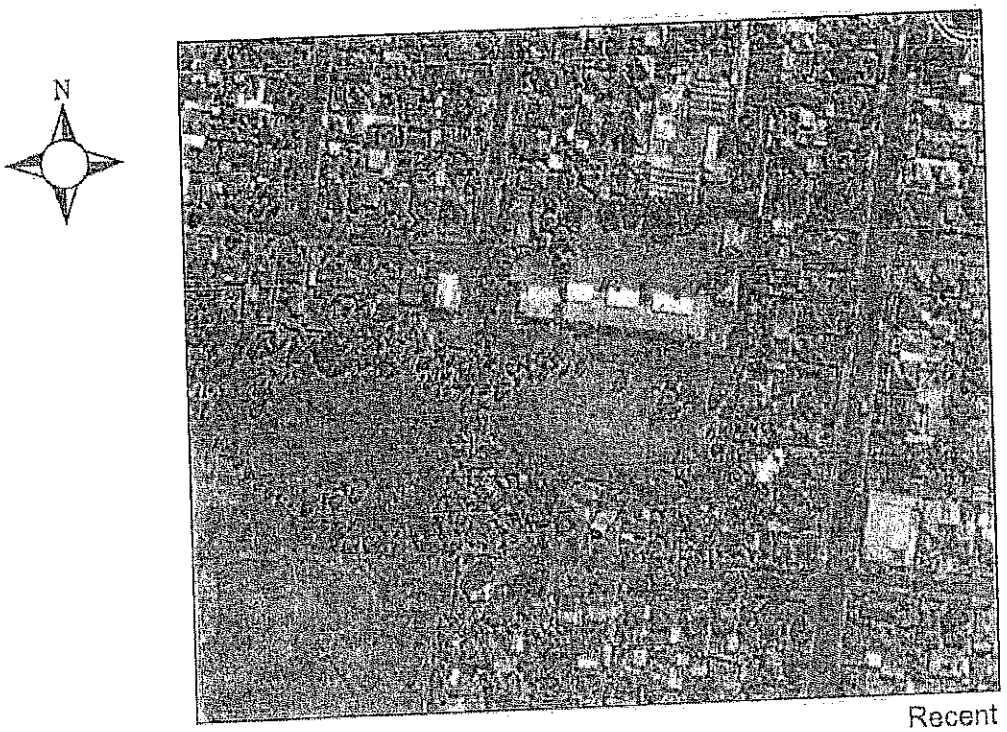
Client: Department of Education and Early Childhood Development

Project: Job #508 Clayton West - Phase 1 ESA

Drawn by: F.C. Dated: 28/12/07 Status: Final

Figure 4. Aerial Photographs 1951 and 1963





Site Boundary

Atma *Environmental*

Client: Department of Education and Early Childhood Development

Project: Job # 609 Clayton West - Phase 1 ESA

Drawn by: F.C. Dated: 28/12/07 Status: Final

Figure 5. Aerial Photographs 1984 and Recent

APPENDIX A

Site Photographs

Photo 1. Looking east along southern side of main school building. Note solid waste in foreground.

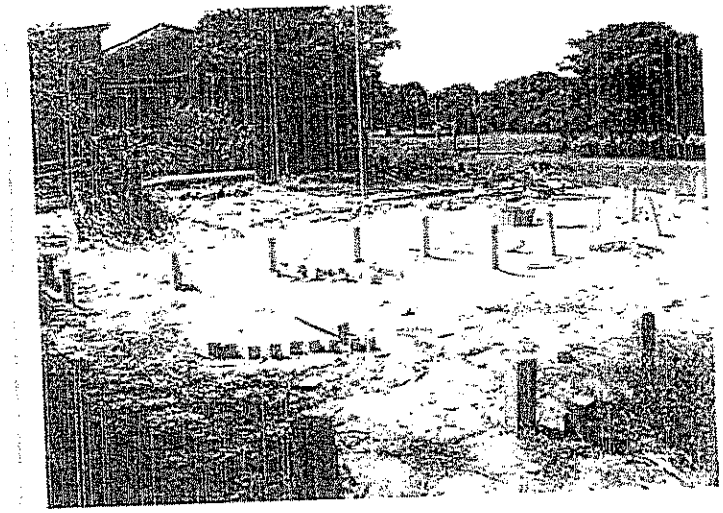


Photo 2. View of demolished school building (western wing).

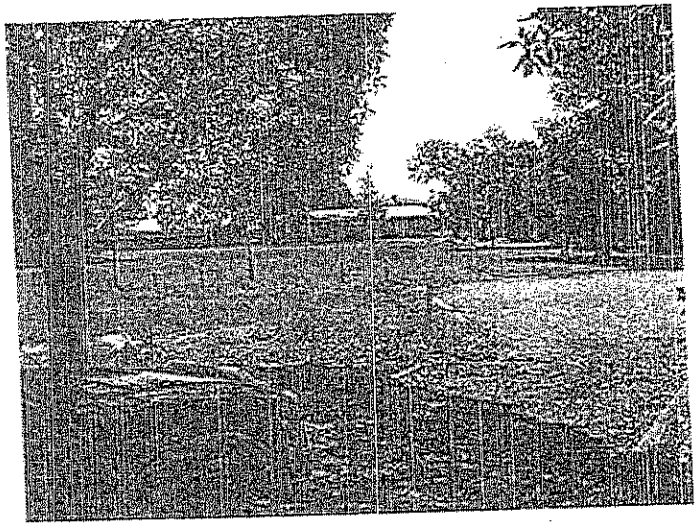


Photo 3. View looking east, northern portion of site.

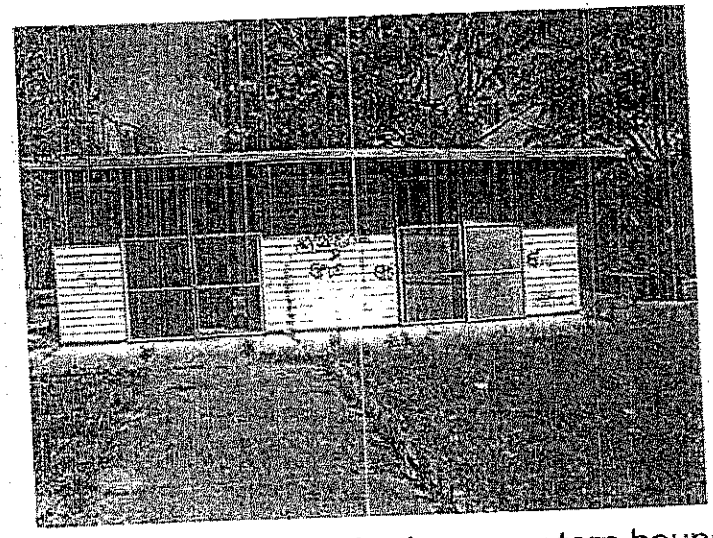


Photo 4. Storage sheds on western boundary of site.

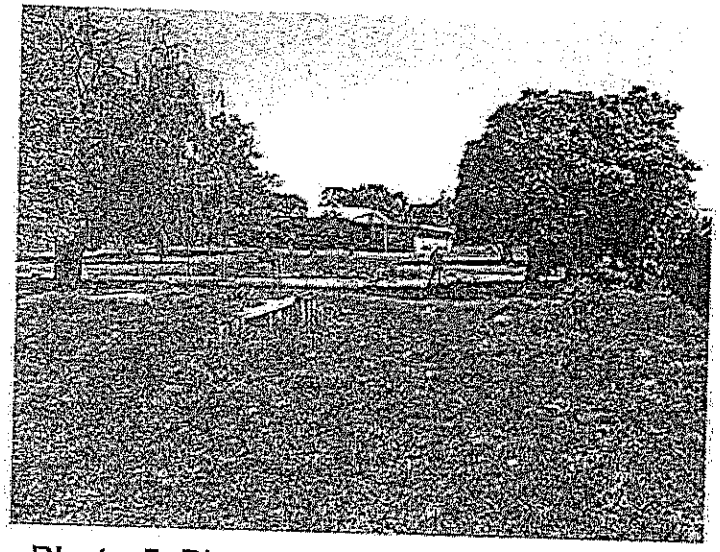


Photo 5. Play area on western boundary. Suspected site of fill material.

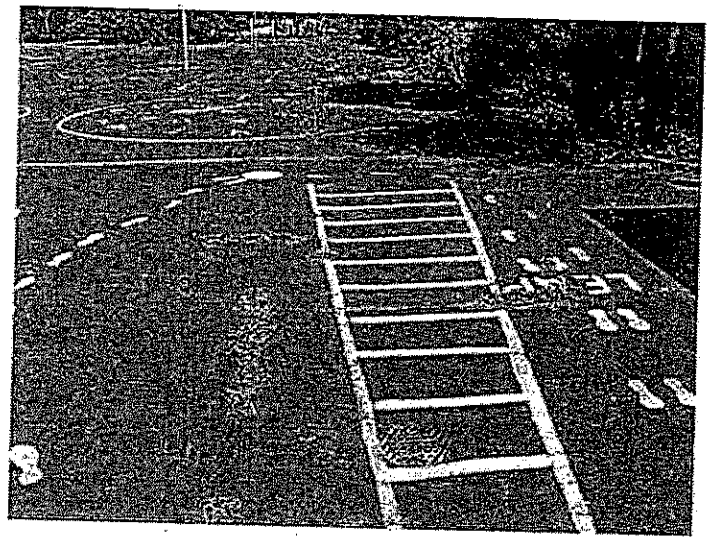


Photo 6. Possible evidence of previous sampling. Asphalt basketball court.

Photo 7. Oval looking north.

Photo 8. Oval looking south-west.

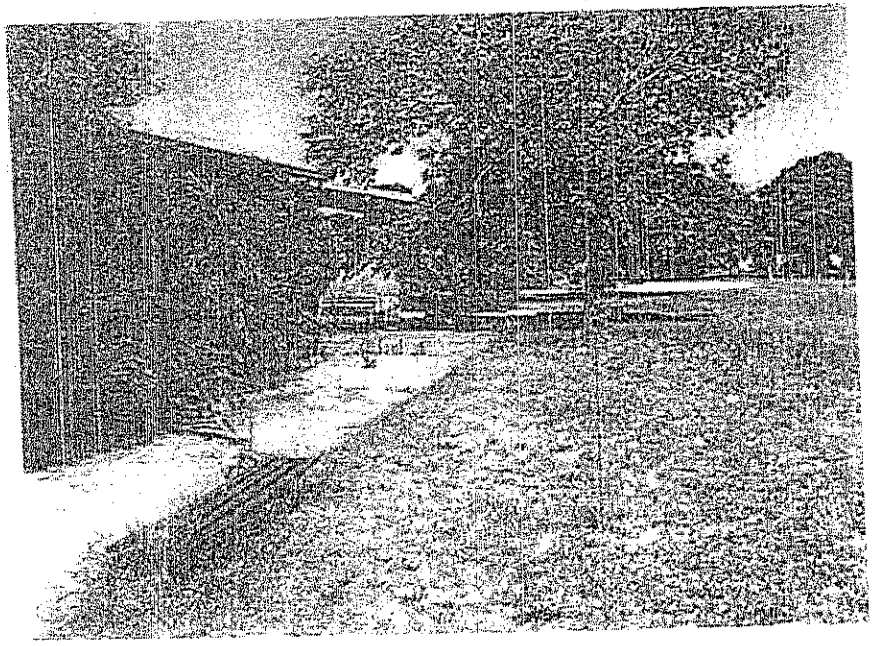


Photo 9. Norhern side of main school building. USTs are located in alcoves on this side of the building.

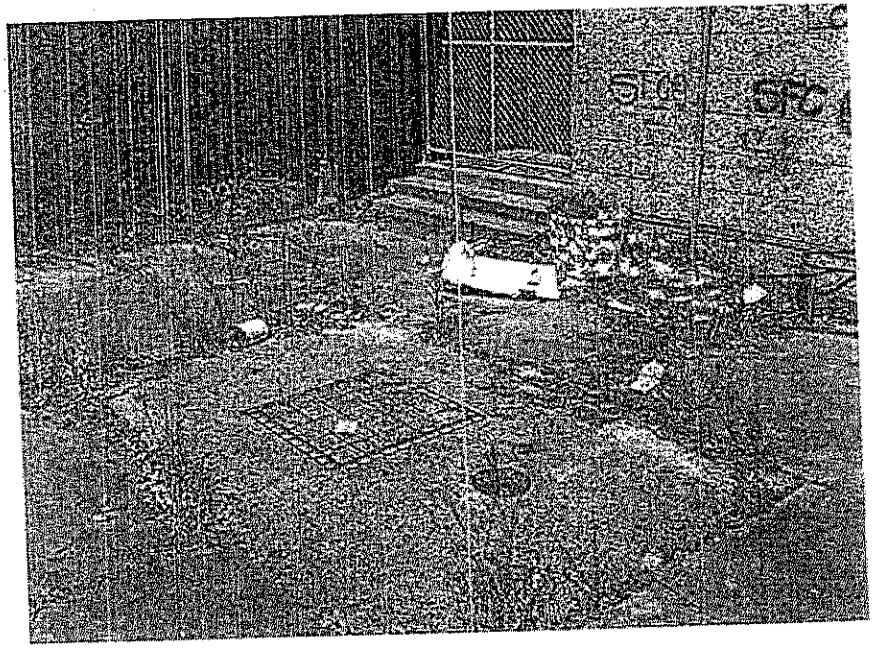


Photo 10. View of UST fill point. Located in alcove on the northen side of the main building.

APPENDIX B

EPA Priority Sites Search

Extract of EPA Priority Site Register

EPA VICTORIA

PROPERTY INQUIRY DETAILS:

STREET ADDRESS: 21A SCOTSBURN AVENUE
SUBURB: OAKLEIGH SOUTH
MUNICIPALITY: CITY OF MONASH
MAP REFERENCES: Melways 33rd Edition, Street Directory, Map 78 Reference K1
Melways 33rd Edition, Street Directory, Map 78 Reference K2

DATE OF SEARCH: 24th December 2007

PRIORITY SITES REGISTER REPORT:

A search of the Priority Sites Register for the above map references, corresponding to the address given above, has indicated that this site is not listed on, and is not in the vicinity of a site listed on the Priority Sites Register at the above date.

IMPORTANT INFORMATION ABOUT THE PRIORITY SITES REGISTER:

You should be aware that the Priority Sites Register lists only those sites for which EPA has requirements for active management of land and groundwater contamination. Appropriate clean up and management of these sites is an EPA priority, and as such, EPA has issued either a:

Clean Up Notice pursuant to section 62A, or a
Pollution Abatement Notice pursuant to section 31A or 31B

of the Environment Protection Act 1970 on the occupier of the site to require active management of these sites.

The Priority Sites Register does not list all sites known to be contaminated in Victoria. A site should not be presumed to be free of contamination just because it does not appear on the Priority Sites Register.

Persons intending to enter into property transactions should be aware that many properties may have been contaminated by past land uses and EPA may not be aware of the presence of contamination. EPA has published information advising of potential contaminating land uses. Municipal planning authorities hold information about previous land uses, and it is advisable that such sources of information also be consulted.

For sites listed on the Priority Sites Register, a copy of the relevant Notice, detailing the reasons for issue of the Notice, and management requirements, is available on request from EPA for $8 per Notice.

For more information relating to the Priority Sites Register, refer to EPA contaminated site information bulletin: Priority Sites Register & Contaminated Land Audit Site Listing (EPA Publication 735). For a copy of this publication, copies of relevant Notices, or for more information relating to sites listed on the Priority Sites Register, please contact EPA as given below:

EPA Information Centre
Herald & Weekly Times Tower
40 City Road, Southbank 3006
Tel: (03)9695 2700 Fax:(03)9695 2710

[Extract of Priority Sites Register] # 7673157 - 7673157151454 '<no reference>'

APPENDIX C

Cathodic Protection Search

energysafe VICTORIA

21 December, 2007

TO: Flynn Clarke
Auna Environmental

Fax: 9429 5911
Ph: 9429 6955

SEARCH FOR CATHODIC PROTECTION SYSTEMS

With reference to your fax of 20/12/2007, a search of the CP database has failed to identify any cathodic protection systems that have been registered at the following locations:

- Monash Secondary College, Duerdin Street, Notting Hill.
- Clayton West Primary School, Alvina Street, Oakleigh South.

Yours sincerely

Glenn Carrig
MANAGER ELECTROLYSIS MITIGATION

Energy Safe Victoria
ABN [illegible]
[illegible]
[illegible]
[illegible] Victoria [illegible]
Phone (03) [illegible]
Fax (03) [illegible]
Web [illegible]

APPENDIX D

WorkCover Dangerous Good Database Search

Licensing Branch
GPO Box 4293, Melbourne 3001
Tel: 1300 852 562
Fax: 1800 060 727
Email: licensing@workcover.vic.gov.au
www.workcover.vic.gov.au

Reference: **H08/00265**

30 January 2008

Tim Robson
Environmental Consultant
Atma Environmental
6/83 Dover Street
Richmond VIC 3121

Dear Mr Robson,

Your Ref: **Dangerous Goods Database Search**

- **Clayton West Primary School, Alvina Street, Oakleigh South**
- **Monash Secondary College, Duerdin Street, Nottinghill / Clayton**

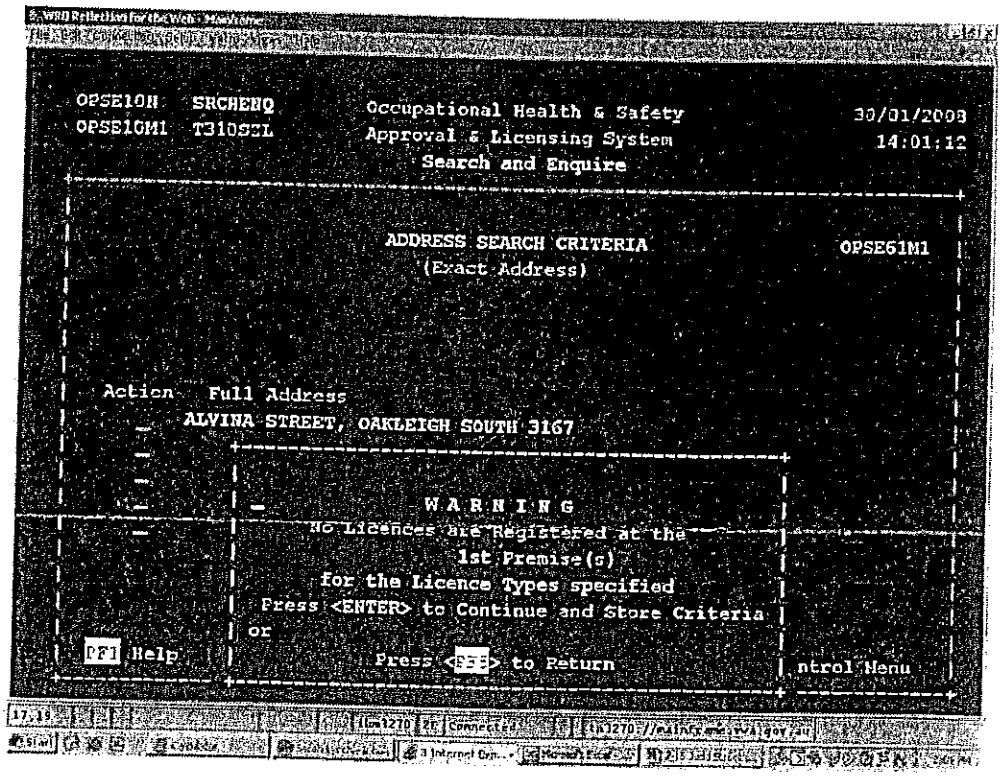
I refer to your Fax received 25 January 2008 and confirm that we have searched our database records for the above address. I advise that WorkSafe Victoria has no records of Dangerous Goods Storage and Handling at the above premises and a printout is attached.

For queries on this matter, please do not hesitate to contact the Licensing Branch on telephone 1300 852 562 or facsimile 1300 060 727.

Yours sincerely

Sarah Lynch
Senior Licensing Officer
WorkSafe Victoria

Encl.
APPROVE screen print
Result: No records


OPSE10N SRCHENQ
OPSE10M1 T310S2L
Occupational Health & Safety
Approval & Licensing System
Search and Enquire
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(Exact Address)
OPSE61M1
Action Full Address
ALVINA STREET, OAKLEIGH SOUTH 3167
W A R N I N G
No Licences are Registered at the
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for the Licence Types specified
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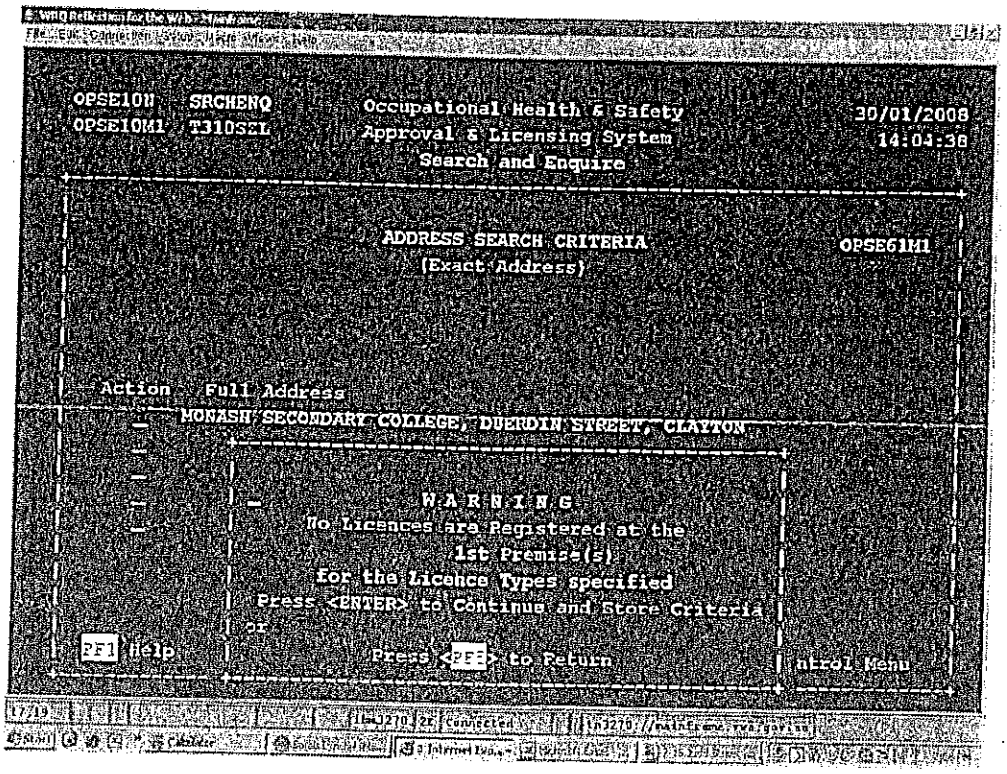
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Approval & Licensing System
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30/01/2008
14:04:38
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(Exact Address)
OPSE61M1
Action Full Address
MONASH SECONDARY COLLEGE, DUERDIN STREET, CLAYTON
W A R N I N G
No Licences are Registered at the
1st Premise(s)
for the Licence Types specified
Press <ENTER> to Continue and Store Criteria
or
Press <PF3> to Return
PF1 Help
ntrol Menu

APPENDIX E

Certificates of Land Title

Department of Sustainability and Environment

REGISTER SEARCH STATEMENT Land Titles Office, Victoria Page 1

Security no : 124024486783K

Volume 08271 Folio 535
Produced 21/12/2007 11:41 am

LAND DESCRIPTION
Lot 1 on Title Plan 232531K (formerly known as part of Crown Allotment 7 Section 2 Parish of Mordialloc).
PARENT TITLE Volume 04447 Folio 226
Created by instrument B021681 26/07/1960

REGISTERED PROPRIETOR
Estate Fee Simple
Sole Proprietor
THE MINISTER OF THE CROWN ADMINISTERING THE EDUCATION ACTS
B021681 26/07/1960

ENCUMBRANCES, CAVEATS AND NOTICES
COVENANT 0980547

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION
SEE TP232531K FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

The following information is provided for customer information only.

Street Address: 21A SCOTSBURN AVENUE OAKLEIGH SOUTH VIC 3167

STATEMENT END

TITLE PLAN	EDITION 1	TP 232531K

Location of Land

Parish: MORDIALLOC
Township:
Section: 2
Crown Allotment: 7 (PT)
Crown Portion:

Last Plan Reference
Derived From: VOL 8271 FOL 535
Depth Limitation: NIL

Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 30/11/1995
VERIFIED: CL

Description of Land / Easement Information

ALL THAT piece of land delineated and coloured red and blue on the map in the margin containing Two acres Two roods and Three perches or thereabouts being part of Crown Allotment 7 Section 2 Parish of Mordialloc together with a right of carriage way over the roads [illegible] Certificate of Title Vol.4442 Fol.225

ENCUMBRANCES REFERRED TO

As to the land coloured blue

THE DRAINAGE AND SEWERAGE EASEMENT reserved by Instrument of Transfer No.B.21681 in the Register Book

E-1 = EASEMENT TO MMBW CREATED BY CIE D233480

COLOUR CODE
BL = BLUE R = RED

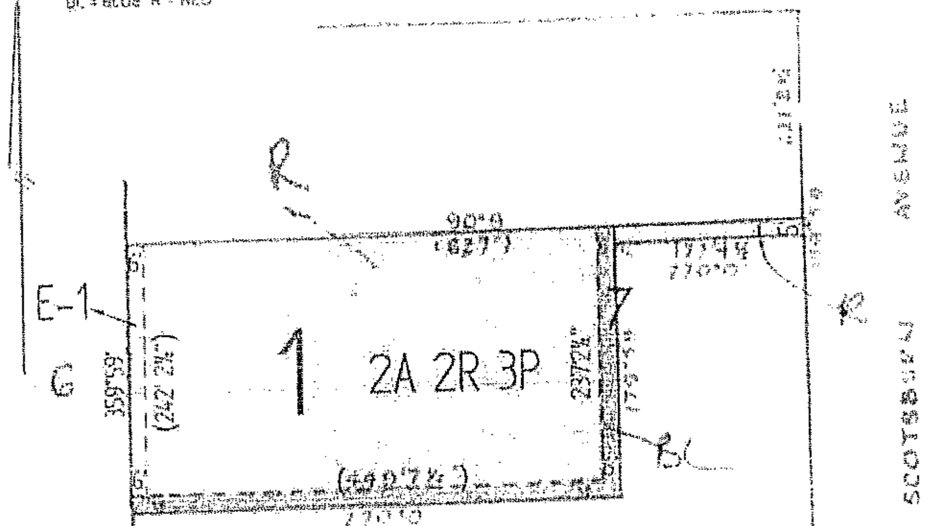


TABLE OF PARCEL IDENTIFIERS
WARNING: Where multiple parcels are referred to or shown on this Title Plan this does not imply separately disposable parcels under Section 8A of the Sale of Land Act 1962
PARCEL 1 = CA 7 (PT)

LENGTHS ARE IN FEET & INCHES | Metres = 0.3048 × Feet; Metres = 0.201168 × Links | Sheet 1 of 1 sheets

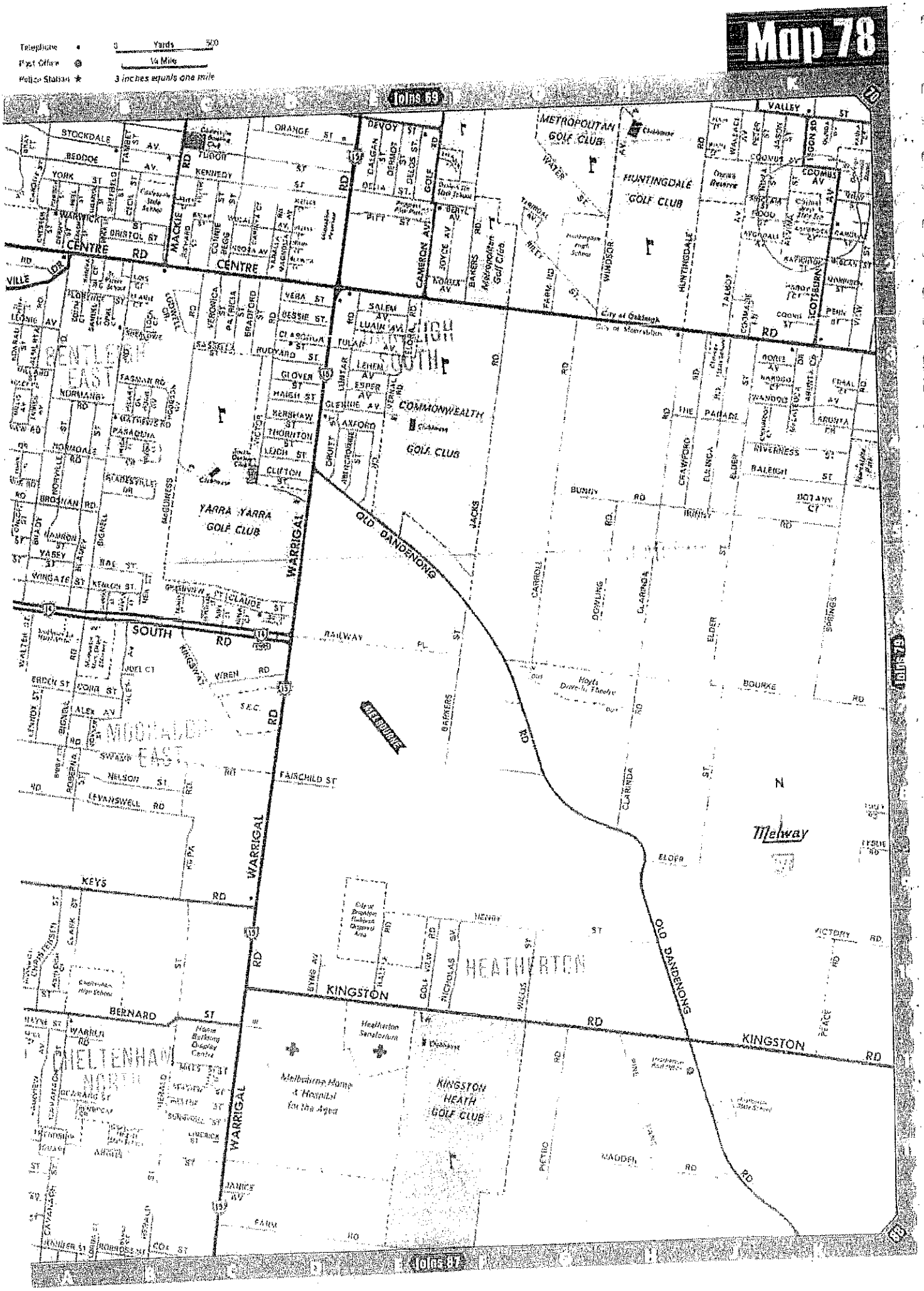
APPENDIX F

Historical Melway - 1966

Map 78

Telephone •
Post Office ⊛
Police Station ★

0 Yards 500
¼ Mile
3 inches equals one mile



Atma *Environmental*

ABN 37 080 479 992

PHASE 2 ENVIRONMENTAL SITE ASSESSMENT: FORMER CLAYTON WEST PRIMARY SCHOOL, ALVINA STREET, OAKLEIGH SOUTH, VICTORIA.

Prepared for:

Department of Education & Early Childhood Development,
2 Treasury Place,
EAST MELBOURNE, VIC 3008.

Project Ref. 589 Clayton West
Date: 15 October 2008

Member Australian Contaminated Land Consultants Association

6 / 83 Dover Street, Richmond, VIC. 3121 Telephone: (03) 9429 6955 Fax: (03) 9429 5911
Mobile: 0412 000 445 Web: www.atmaenvironmental.com

Report Finalisation & Distribution

PROJECT REFERENCE: #589 Clayton

REPORT TITLE: Phase 2 Environmental Site Assessment: Former Clayton West Primary School, Alvina Street, Oakleigh South, Victoria.

DATE: 15th October 2008

PROJECT MANAGER:

Tim Robson, Environmental Consultant

REVIEWED/APPROVED BY:

Glenn Berry, Principal

DOCUMENT STATUS:

Revision No.	Status	Date	Prepared By	Reviewer
0	Final	15/10/2008	TR	GRB

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DISTRIBUTION LIST:

No. of Copies	Document Status	Date	Copy Type (pdf)	Distributed to:
2	Final	15/10/2008	1 x pdf 1 x hard paper	Department of Education (Attn: Deanne Leaver)
1	Final	15/10/2008	1 x pdf	Atma Environmental (File)

Unless indicated, this report has been provided by Atma Environmental Pty Ltd in an electronic format. Atma Environmental Pty Ltd considers the office archival version to be binding. Documents in an electronic format are provided for the convenience of the recipient and we request that they ensure that the integrity of this electronic information is maintained. Storage of this electronic information should at a minimum comply with all legal requirements.

6/103 Dover Street, Richmond, VIC. 3121 Telephone (03) 9429 6955 Fax (03) 9429 5911 Mobile 0412 000 445
Web. www.atmaenvironmental.com

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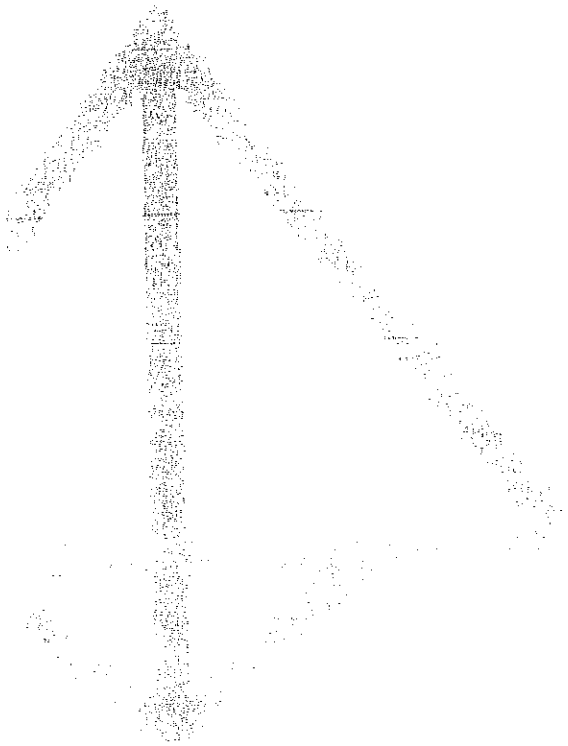


EXECUTIVE SUMMARY

A Phase 2 Environmental Site Assessment (ESA) has been completed at the site located at the former Clayton West Primary School, Victoria for the purpose of determining if contamination above relevant health-based levels for sensitive uses exist at the site on behalf of the Department of Education who is seeking to divest the subject site and rezone the land to *'Residential'*.

The Phase 2 site investigation consisted of sampling 30 grid-based locations and two additional targeted soil sampling locations, at the former boiler rooms, all to a depth of one metre. Small amounts of imported fill material, gravel and tan bark, were found at the site. The soil profile predominately consisted of dark brown silty sand which had evidence of disturbance in most areas above natural grey fine grained sand.

Composite and discrete soil sample analysis included heavy metals, polycyclic aromatic hydrocarbons (PAHs), total recoverable hydrocarbons (TRHs), organochlorine pesticides (OCPs), monocyclic aromatic hydrocarbons (MAHs), semi-volatile chlorinated hydrocarbons (CHCs), polychlorinated biphenyls (PCBs), phenols, pH and sulphate. The adopted HIL assessment criteria used for this investigation were the NEPM 'A' setting for standard residential with access to soil.

Based on the findings of the soil investigation undertaken at the site, it is concluded that:

- No contaminant concentrations exceeding NEPM 'A' setting HILs for residential use were found on the site;
- No contaminant concentrations exceeding NEPM EILs were found at the site; and
- Acidic soil conditions on some areas may affect the growth of some sensitive plant types. Additional geotechnical advice may be desirable.

On the basis of the analytical work carried out, the site does not (within the specified degree of certainty) contain contaminant levels potentially harmful to human health.

A groundwater investigation is not considered warranted at this point in time as results indicate low to non-detectable levels of contaminants of concern and there were no point sources of contamination identified onsite, former underground storage tanks having been removed and validated.

1 INTRODUCTION

Atma Environmental Pty Ltd (Atma Environmental) has performed a Phase 2 Environmental Site Assessment (ESA) on the former and now demolished Clayton West Primary School, located in Alvina Street, Oakleigh South, Victoria.

The investigation was formally commissioned by Deanne Leaver of the Department of Education via email on the 9th of September 2008.

A Phase 1 ESA was completed by Atma Environmental and issued on the 12th February 2008. The Phase 1 ESA indicated that Clayton West Primary School was constructed on the site circa early 1960's. The buildings were demolished in 2008. Prior to the establishment of Clayton West Primary School, the site was used for agricultural purposes.

The Phase 1 ESA recommended the removal and validation of two Underground Storage Tanks (UST's) and the collection and analysis of soil samples from grid-based locations in compliance with the Australian Standard AS4482.1. The two UST's were removed and validated on the 26th of May 2008 and a copy of the associated validation removal letter is reproduced in Appendix A.

2 OBJECTIVES & SCOPE OF ASSESSMENT

2.1 *Assessment Objective*

The purpose of this report is to document the findings of an environmental soil investigation as conducted and documented here. The assessment was carried out for the Department of Education who is seeking to divest the subject site and rezone the land to *'Residential'*.

The objective of the investigation was to ascertain if chemical contamination of soils and/or fill material above a 'residential' health standard exists on the site.

2.2 *Scope of Work*

The scope of work, as outlined in Atma Environmental correspondence (3rd September 2008) comprised the following tasks:

- Soil sampling of 31 grid-based locations in accordance with the standard AS4482.1;
- Composite-based sample analysis program; and
- Reporting on assessment and any requirements for further investigation (if required).

In undertaking the assessment the quoted field work was altered slightly given that 31 locations could not be readily spaced over the site. A five x six sampling pattern (30 no) was established with an additional two locations completed at former boiler rooms (for 32 locations total).

3 BENEFICAL USES & ASSESSMENT CRITERIA

3.1 Land

The *State Environment Protection Policy (Prevention and Management of Contamination of Land)* (*Land SEPP*) outlines Land Use Categories and specifies beneficial uses which must be protected for each of these categories. Table 1 summarises the relevant beneficial uses that must be protected for the proposed rezoning of the site to residential use.

Table 1. Summary of Protected Beneficial Uses of Land (*Land SEPP*)

BENEFICIAL USES TO BE PROTECTED:	POTENTIAL SITE LAND USE:						
	Parks & Reserves	Agriculture	Sensitive Use:		Recreation - Open space	Commer-cial	Industrial
			High Density	Other			
Maintenance of Ecosystems:							
Natural Ecosystems >	✓						
Modified Ecosystems >	✓	✓		✓	✓		
Highly Modified Ecosystems >		✓	✓	✓	✓	✓	✓
Human Health:	✓	✓	✓	✓	✓	✓	✓
Buildings & Structures:	✓	✓	✓	✓		✓	✓
Aesthetics:	✓		✓	✓	✓	✓	
Production of food, flora & fibre:	✓	✓		✓			

Maintenance of Ecosystems

Soil sample results may be compared to Ecological Investigation thresholds found in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* or NEPM (National Environment Protection Council Service Corporation, 1999).

The Ecological Investigation Levels (EILs) are based on thresholds for phytotoxicity and uptake of contaminants that may result in impairment of plant growth or reproduction or

unacceptable residue levels. These criteria may be considered conservative, as EILs are usually set for pristine or modified ecosystems, and not for the highly modified ecosystems that are found on site.

Where the NEPM does not provide an EIL value for a contaminant of interest, NSW EPA 1994 (for BTEX) or Dutch 2000 (for others) criteria are referenced. In the case of Dutch 2000 criteria, their target + intervention criteria/2 are used as the EIL screening criteria.

In this instance the assessment required identification of contaminant concentrations above residential health-based levels (vs ecological) although that has been achieved.

Human Health

Soil sample results are compared to Health Investigation Levels (HILs) also found in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (National Environment Protection Council Service Corporation, 1999). The HILs are based on a toxicological risk assessment approach.

There are four predominant exposure settings that are used when classifying the use or proposed use of a site:

- 'A' Setting HILs for standard residential with garden/accessible soil, childcare centres, preschools and primary schools;
- 'D' Setting HILs for high-density residential;
- 'E' Setting HILs for parks, recreational open space and playing fields, also includes secondary schools; and
- 'F' Setting HILs for commercial/industrial use.

As there are no available thresholds for HILs for Total Recoverable Hydrocarbons (TRHs), NSW EPA 1994 '*Guidelines for Assessing Service Station Sites*' is used unless the sample is further speciated by another analysis for direct comparison with NEPM HILs.

In terms of health-based criteria, **'A' Setting HILs** are considered the most appropriate to the site, as the proposed rezoning is for residential use. The relevant comparative criteria are listed on the analytical summary sheets (Table 2). Where there is neither a NEPM nor NSW EPA criterion available, Dutch 2000 intervention levels may be used in lieu of the 'A' HIL.

Buildings & Structures

The beneficial use is assessed by a review of physical parameters such as pH, sulphate, redox potential, salinity, or any chemical substance or waste that may have a detrimental effect on structural integrity of buildings or any other structures.

Aesthetics

In general, the criteria for aesthetics are that soils should not be displeasing to the human senses (e.g. odorous, visibly impacted) or give cause for alarm or safety.

Production of food, flora or fibre

The production of food, flora, and fibre maybe assessed with reference to EIL criteria as per maintenance of Ecosystems. This beneficial use has not been fully assessed.

Other

Soil sample results may also be compared to Environmental Protection Agency (EPA) Clean Fill criteria, found in the *EPA Publication, 448.3, Classification of Wastes (May 2007).* These criteria apply only where soil is to be transported and disposed of off-site.

The Victorian EPA guidelines state that Clean Fill Material (either not contaminated, highly odorous, or were constituents can be deemed to be from natural origin) can be transported off site with no licence requirements and used as a fill material.

Category C contaminated soil is material which has any contaminant concentration higher than the Clean Fill limit but lower than the Category B limit. This soil must be disposed of by an EPA licensed vehicle to a licensed landfill.

Category B contaminated soil has any contaminant concentration higher than the Category C limit but lower than the Category A limit. This soil must also be transported by an EPA licensed vehicle to a licensed facility.

Category A contaminated soil is any material with contaminant concentrations above the Category B threshold. This soil must be remediated either on or off-site before being disposed of and EPA transport certificates must be used.

Samples have not been fully assessed for off-site disposal purposes.

4 SOIL INVESTIGATION

4.1 Site Investigation Methodology

Appendix B provides Atma Environmental Pty Ltd's procedures for soil sampling, quality assurance and equipment decontamination. These procedures are comparable with those found in the Australian Standard AS4482.1 – 2005, *Guide to the sampling and investigation of*

potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds.

AS4482.1 recommends a minimum number of sampling locations dependant on the area of a site such that circular contamination hotspots of a given size may be detected with a 95% degree of certainty. For this site (2.06 ha.) 31 locations as required by AS4482.1 will detect hotspots of 15.2 m radius. Soil sampling locations (BH1 – BH30) were constructed across the site as per the attached site sampling plan in a regularly spaced fashion with additional locations placed also in areas of environmental interest being the former boiler rooms (see Figure 1 site details for sample locations).

4.2 Soil Sample Collection

Soil sampling was conducted on the 30th of September 2008. 32 soil bores were drilled to 1.0 m using a 4WD mounted solid stem auger. The soil samples were collected directly from the auger using a spatula at nominal 0.1 m, 0.5 m, and 1.0 m depths across the site (see Figure 1 Site Details). The auger lengths were appropriately decontaminated between each borehole.

Soil samples were labelled by the borehole number followed by the relevant depth from where the sample was collected (e.g.: Sample 'BH1/0.1' is from soil bore number one at 0.1 m below ground level). Borehole is abbreviated to BH in the remainder of this report.

New, single use glass containers provided by the laboratory were used in conjunction with latex gloves to avoid contact with contaminated material. All soil samples were preserved on ice during site investigations and during transport to the laboratory.

4.3 Soil Sample Analysis

Subsequent to the completion of field work, soil samples were grouped together for analysis having regard for relevant soil compositing guidelines. In general, this involved grouping only adjacent soil samples from similar sampling depths and soil matrices ("compositing"). For certain analyses, including volatile compounds, discrete samples were tested to avoid possible contaminant losses during the composting process. See Figure 2 for the details of the composite regime.

Because of the dilution effect of compositing samples, comparative criteria require modification by the number of sub-samples (i.e. is divided) to enable comparison with composite test results. Where composite samples exceeded NEPM 'A' HIL (but not EIL) criteria, as modified for the number of composite sub-samples, further analysis of sub-samples is carried out to identify any locations having concentrations greater than the HIL.

prensa

Appendix D: NATA Analytical Results

Borehole Log - GB3

prensa

Sheet: 1 of 1

Client: Department of Treasury and Finance **Job Number:** 13991 **Site Location:** 10 Alvina Street, Oakleigh South **Job Type:** Landfill Gas Investigation **Date:** 14/02/2014 **License Number:** N/A	**Driller:** Star Drilling **Rig:** Geoprobe Drill Rig **Depth of Hole:** 1.9 m **Screened Depth:** 1.0 - 1.9 m **Casing/Screen Diameter:** 50 mm **Top of Casing (m AHD):**	**Standing Water Level:** **Easting:** **Northing:** **Coord. Sys.:** **Drawn By:** SPF **Approved By:** SSB

Comment:
Landfill gas bore

Depth (m)	Well Construction	Method	Graphic Log	Soil Profile	Sample	PID
0.5	GB3 Grout (0.0 - 0.4 m) Bentonite (0.4 - 0.7 m)	Hand auger		NATURAL: SAND (0 - 0.8 m) Dark grey to black, loose, dry, homogeneous.		
1.0	Sand (0.7 - 1.9 m) Screen (1.0 - 1.9 m)	Solid auger		NATURAL: SAND (0.8 -1.5 m) Light grey, loose, dry.		
1.5				NATURAL: SAND (1.5 - 1.9 m) Yellow, dense, slightly moist, coarse grained.		
2.0				End of borehole at 1.9 m at target depth in natural.		

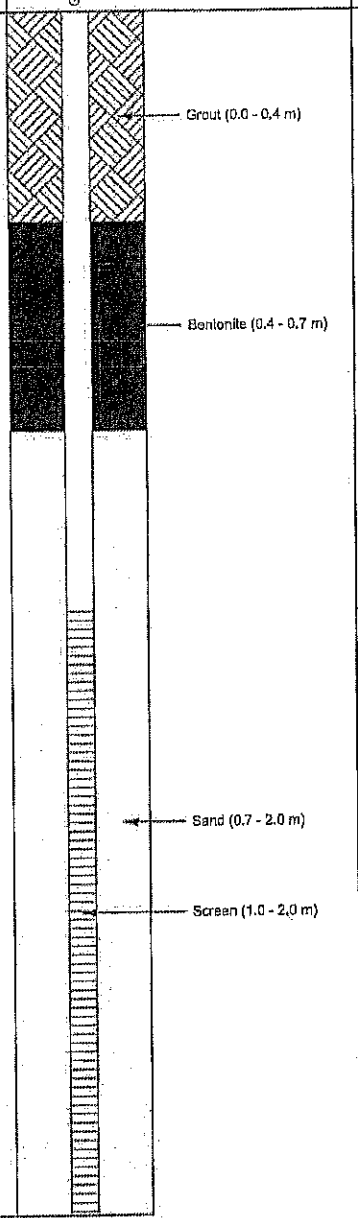
Borehole Log - GB2

prensa

Sheet: 1 of 1

Client: Department of Treasury and Finance **Job Number:** 13991 **Site Location:** 10 Alvina Street, Oakleigh South **Job Type:** Landfill Gas Investigation **Date:** 14/02/2014 **License Number:** N/A	**Driller:** Star Drilling **Rig:** Geoprobe Drill Rig **Depth of Hole:** 2.0 m **Screened Depth:** 1.0 - 2.0 m **Casing/Screen Diameter:** 50 mm **Top of Casing (m AHD):**	**Standing Water Level:** **Easting:** **Northing:** **Coord. Sys.:** **Drawn By:** SPF **Approved By:** SSB

Comment:
Landfill gas bore



Depth (m)	Method	Graphic Log	Description	Sample	PID
0.0	Hand auger		FILL: SAND (0 - 0.3 m) Brown, loose, dry, coarse grained, dark grey silty clay pockets.		
0.3			FILL: SAND (0.3 - 0.5 m) Light grey, loose, dry, brown clay pockets, minor concrete fragments.		
0.5			NATURAL: SAND (0.5 - 0.6 m) Black to dark grey, loose, dry, coarse grained sand.		
0.6			NATURAL: SAND (0.6 -1.3 m) Light grey, loose, dry.		
1.3	Solid auger		NATURAL: SAND (1.3 - 1.6 m) Light brown, loose, dry.		
1.6			NATURAL: SAND (1.6 - 2.0 m) Yellow, dense, slightly moist, coarse grained.		
2.0			End of borehole at 2.0 m at target depth in natural.		

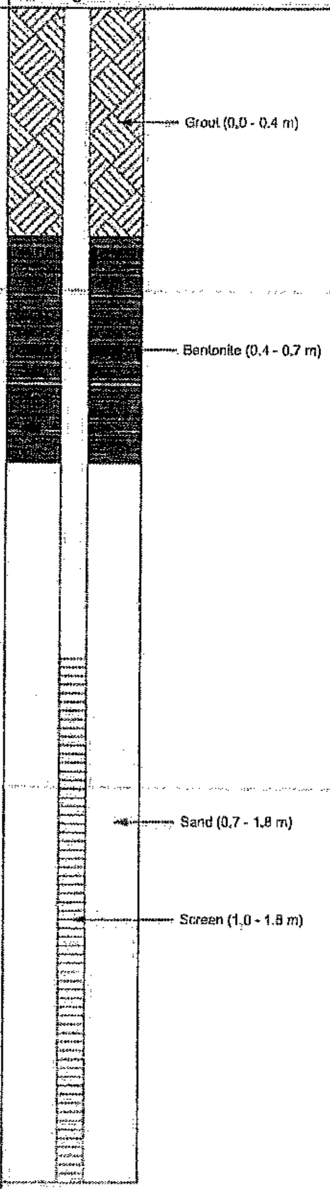
Borehole Log - GB1

Sheet: 1 of 1

prensa

Client: Department of Treasury and Finance	**Driller:** Star Drilling	**Standing Water Level:**
Job Number: 13991	**Rig:** Geoprobe Drill Rig	**Easting:**
Site Location: 10 Alvina Street, Oakleigh South	**Depth of Hole:** 1.8 m	**Northing:**
Job Type: Landfill Gas Investigation	**Screened Depth:** 1.0 - 1.8 m	**Coord. Sys.:**
Date: 14/02/2014	**Casing/Screen Diameter:** 50 mm	**Drawn By:** SPF
License Number: N/A	**Top of Casing (m AHD):**	**Approved By:** SSB

Comment:
Landfill gas bore



Depth (m)	Method	Graphic Log	[illegible]	Sample	PID
0.0 - 0.3	Hand auger		FILL: SAND (0 - 0.3 m) Brown, loose, dry, coarse grained sand, organic matter, dark grey silty clay pockets, angular bluestone gravel fragments.		
0.3 - 0.5	Hand auger		FILL: SAND (0.3 - 0.5 m) Light grey, loose, dry, brown clay pockets.		
0.5 - 0.6	Hand auger		NATURAL: SAND (0.5 - 0.6 m) Dark grey to black, loose, dry, coarse grained, minor quartz fragments.		
0.6 - 1.3	Hand auger		NATURAL: SAND (0.6 - 1.3 m) Light grey, loose, dry, homogeneous.		
1.3 - 1.7	Solid auger		NATURAL: SAND (1.3 - 1.7 m) Light brown, loose, dry.		
1.7 - 1.8	Solid auger		NATURAL: SAND (1.7 - 1.8 m) Yellow, dense, slightly moist, coarse grained.		
			End of borehole at 1.8 m at target depth in natural.		

Depth scale: 0.5, 1.0, 1.5, 2.0

prensa

Appendix C: LFG Construction Borelogs

Email: AprilW@monash.vic.gov.au
Phone: (03) 9518 3774

Fax: (03) 9518 3444
National Relay Service: 1800 555 660

380 Ferntree Gully Road, Notting Hill, VIC 3168
www.monash.vic.gov.au

From: Sarah Fitzpatrick [mailto:sarah.fitzpatrick@prensa.com.au]
Sent: Thursday, 16 January 2014 9:28 AM
To: April Williams
Subject: Information regarding landfill gas sites

Hi April,

I am conducting a landfill gas assessment on behalf of a client, to determine if there is any risk of landfill gas at their sites located near the two former landfills (outlined below). Information provided by the City of Monash, may be included in the report to our client (which would not be a publicly available document), and will also help to form our decision regarding whether there is a risk.

At present, I have minimal information regarding the former landfill sites, and would like to obtain any information regarding the landfills, but in particular I would like to known how long (including the dates) that the landfills operated for, and the type of waste that the landfills may have been filled with.

One landfill is located at Talbot Park, on Centre Road Oakleigh South. It appears that the Talbot Park area at this Site may have been remediated, while the rest of the former quarry, which is located north and north west of the park, appears to have been backfilled and abandoned.

The other site is located at 1041 – 1049 Centre Road, 346 and 348 – 350 Warrigal Road. It has recently been redeveloped into a shopping centre, including a Masters and Woolworths. I understand that this area was rezoned from industrial to business use prior to the redevelopment. The Site was formerly a sand quarry and may have subsequently been used as a landfill. It may have been referred to as the 'Cavanagh Sands' site.

Any information that the City of Monash has regarding landfills at these sites would be appreciated.

Kind Regards,

Sarah Fitzpatrick | HSE Consultant | **Prensa Pty Ltd**
Office: 261-271 Wattletree Rd, Malvern VIC 3144
Postal Address: PO Box 2203, Wattletree Rd LPO, East Malvern VIC 3145
Phone: (03) 9508 0100 **Mobile:** 0401 637 344
Email: sarah.fitzpatrick@prensa.com.au | **Web:** www.prensa.com.au

prensa
property > environment > safety >

Holly Butler

To: Sarah Fitzpatrick
Subject: RE: Information regarding landfill gas sites

From: Sarah Fitzpatrick [mailto:sarah.fitzpatrick@prensa.com.au]
Sent: Wednesday, 29 January 2014 10:49 AM
To: Butler
Subject: FW: Information regarding landfill gas sites

Sarah Fitzpatrick | HSE Consultant | **Prensa Pty Ltd**
Office: 261-271 Wattletree Rd, Malvern VIC 3144
Postal Address: PO Box 2203, Wattletree Rd LPO, East Malvern VIC 3145
Phone: (03) 9508 0100 **Mobile:** 0401 637 344
Email: sarah.fitzpatrick@prensa.com.au | **Web:** www.prensa.com.au

prensa
property > environment > safety >

From: April Williams [mailto:AprilW@monash.vic.gov.au]
Sent: Thursday, 23 January 2014 11:58 AM
To: 'Sarah Fitzpatrick'
Subject: RE: Information regarding landfill gas sites

Hi Sarah,

I have forwarded your questions to the relevant manager and this is his response:

I refer to your request regarding information on Talbot Road and 1041-1049 Centre Road. The Council operated landfill at Talbot Road was filled between 1977 -78 with putrescible waste. This was a small landfill with monitoring undertaken which showed no migration of gas at the boundaries. This was undertaken some 5 years ago. The Centre Road/Warrigal site was operational from 1940 and was filled using clean fill.

In regards to your request for the development proposal for the sites, I have requested this information from our Town Planning department. Some of these files are stored off-site, but when these are retrieved, I will be able to provide you with information from the files.

Thanks,

April Williams
Waste Services Project Officer

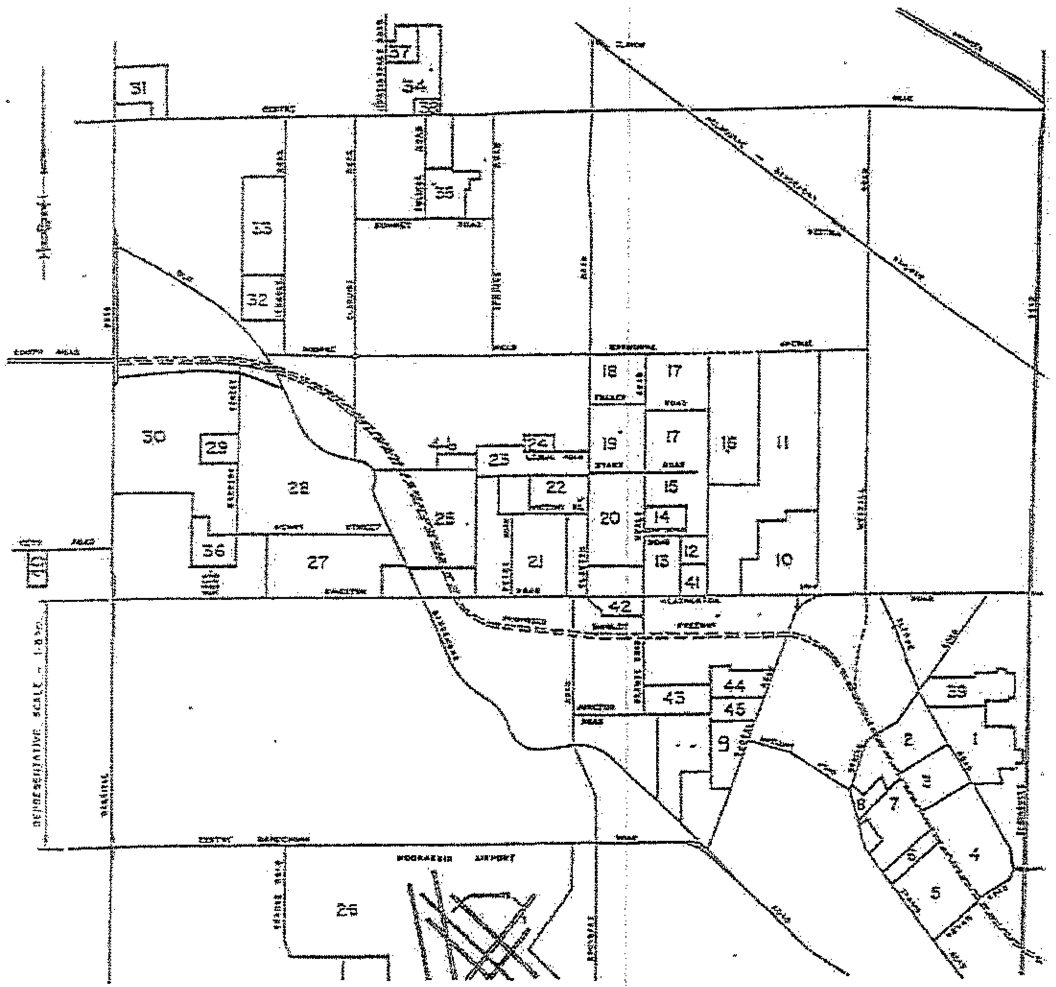
prensa

Appendix B: Council Documents

SOUTH EASTERN REGIONAL WASTE MANAGEMENT GROUP

HEATHERTON - DINGLEY AREA

REFUSE DISPOSAL SITES



NO	OWNER	E	PT	F
1.	CITY OF GREATER DANDENONG (SPRING VALLEY PARK)	F		
2.	CSR/PBM	F		
3.	CSR/PBM			●
4.	MINISTER FOR PLANNING & ENVIRONMENT (EX CITY OF WAVERLEY)			●
5.	EX (CITY OF SPRINGVALE)			●
6.	EX (CITY OF WAVERLEY)			●
7.	EX (CITY OF MORDIALLOC)			●
8.	A.V. DEVELOPMENTS - VIDOTTA SITE (EX CITY OF MALVERN)			●
9.	ERNEST SMITH CONTRACTORS (DIN SAN NURSERY, ETC.)	I		
10.	EX (CITY OF OAKLEIGH)			●
11.	SPRING VALLEY GOLF CLUB			
12.	EX (CITY OF PRAHRAN)			●
13.	AMATEK LTD.		●	
14.	EX (CITY OF OAKLEIGH)			R
15.	CLEANAWAY	I		
16.	PIONEER	P		
17.	PIONEER			●
18.	BAYVIEW QUARRIES	I		
19.	BRAMBLES INDUSTRIES/CLEANAWAY			●
20.	CITY OF BOROONDARA & OTHERS	P		
21.	PIONEER CONCRETE P/L - PIONEER QUARRIES LTD.		●	
22.	[illegible] SAND SUPPLIES P/L	I		
23.	CITY OF KINGSTON		●	

NO	OWNER	E	PT	F
24.	ALLIED SAND P/L (SOLID FILL)	I		
25.	PIONEER CONCRETE P/L		●	
26.	COMMONWEALTH OF AUSTRALIA			R
27.	PIONEER CONCRETE P/L		●	R
28.	HEATHERTON SAND SUPPLIES	I		
29.	CITY OF MOORABBIN	[illegible]		R
30.	MELBOURNE WATER			
31.	CAVANAGH SAND SUPPLIES P/L (SOLID FILL)	[illegible]		
32.	CITY OF KINGSTON		●	
33.	PIONEER		●	
34.	CONSOLIDATED QUARRIES			●
35.	CITY OF OAKLEIGH EX			●
36.	CITY OF BRIGHTON EX			●
37.	CITY OF OAKLEIGH EX			●
38.	CITY OF OAKLEIGH EX			●
39.	CITY OF SPRINGVALE EX			●
40.	CITY OF MOORABBIN EX			●
41.	PROLL/EMERSON		●	
42.	VIDOTTA			●
43.	VIDOTTA			●
44.	ERNEST SMITH CONTRACTORS			●
45.	ERNEST SMITH CONTRACTORS			●
46.	WHELAN KARTAWAY	I		

LEGEND

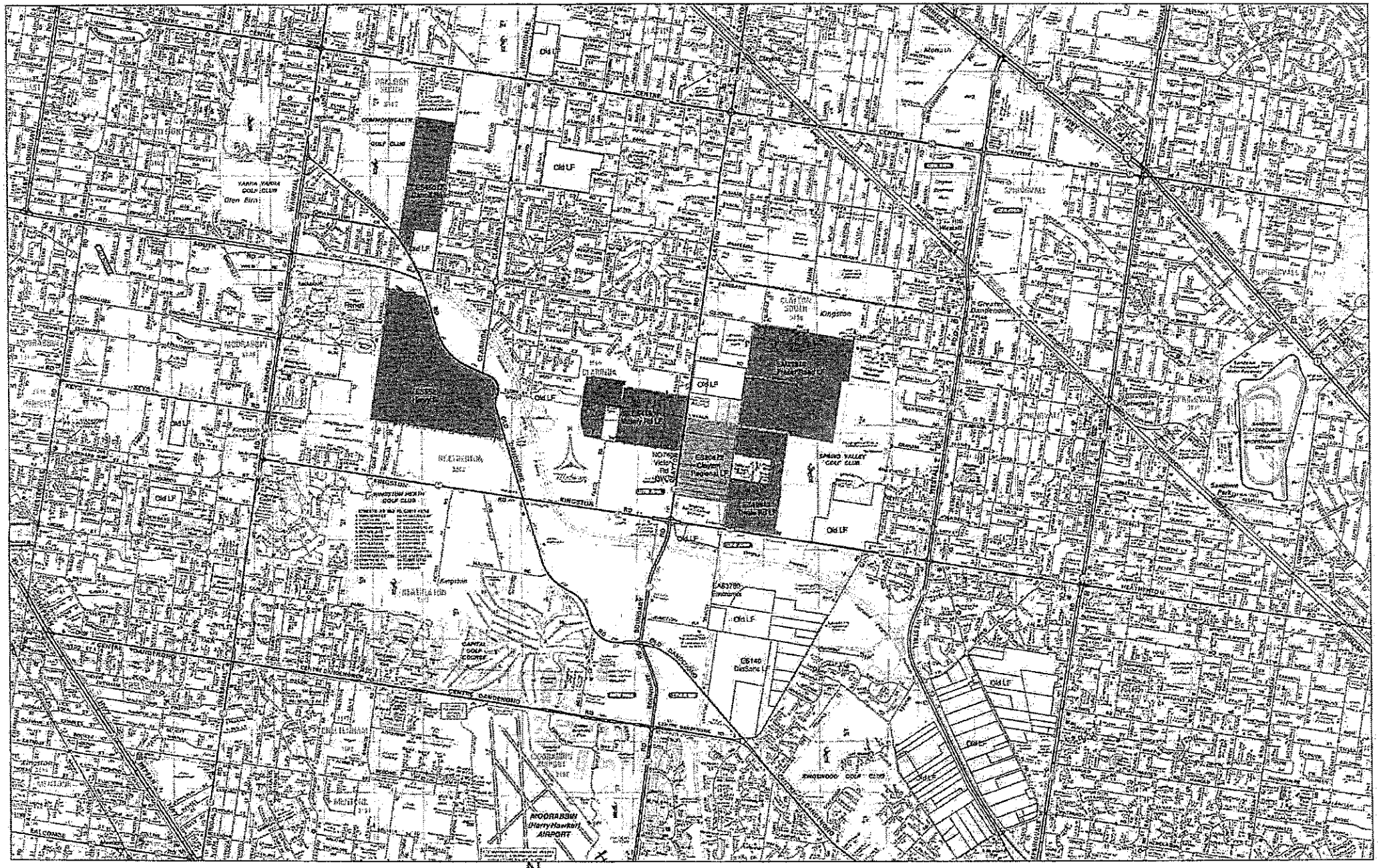
Existing — Putrescible P / Inert I

Potential PT

Filled F

Filled Open Space R

MAP 1


0
0.4
0.8
1.6
2.4
3.2
Kilometers
N
Clayton Area current and closed Landfills and Composters

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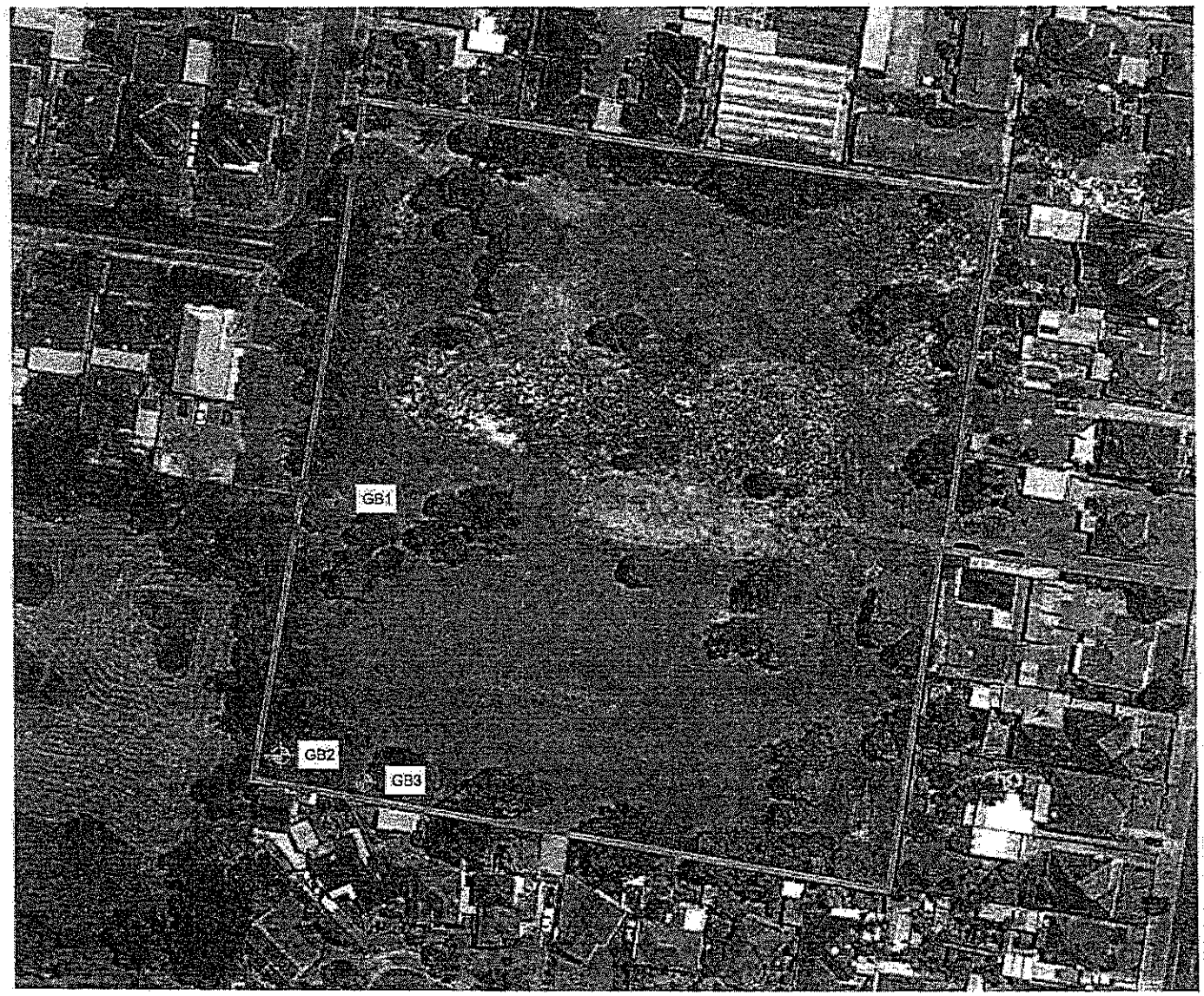
Appendix A: EPA Documents



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Client:
Department of Treasury and Finance

Project:
Landfill Gas Assessment

Address:
10 Alvina Street, Oakleigh South

Drawing Title:
Clayton West Landfill Gas Bore Locations

Job No.: 13991 | Client No.: D0003

0 9 18 27 36
Scale: 1:500 (A3) Metres

N

Legend

Landfill Gas Bore

Site Boundary

Note: All locations are aproximate

Image Source:
Google Earth Pro
Viewed: 17 Feb 2014

Drawn by:	Date:	Checked by:	Date:
SPF	17/02/14	HAB	17/02/14

File name:	Figure number:	Revision:
13991 LFG Bore Location	2	A

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Department of Treasury and Finance

Project:
Landfill Gas Assessment

Address:
10 Alvina Street, Oakleigh South

Drawing Title:
Clayton West Site Locality

Job No.: 13991 | Client No.: DE003

0 35 70 105 140
Scale 1:550 (A3) Metres

N

Legend

- Site Boundary
- Talbot Park Boundary
- Former Centre Road Quarry Boundary

Note: All locations are approximate

Image Source:
Google Earth Pro
Viewed: 11 Mar 2014

Drawn by:	Date:	Checked by:	Date:
SPF	11/03/14	RAB	11/03/14

File name:	Figure number:	Revision:
13991 Clayton locality	1	A

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Figures

9 Application of this Report

The report should not be separated or reproduced in part and should be read in its entirety.

Prensa Pty Ltd

Sally Bonham
Principal Environmental Consultant

Holly Butler
Senior Environmental Consultant

In addition, Prensa installed three (3) LFG bores in the southwest corner of the Site. LFG sampling and analysis did not report detectable concentrations of methane in the confirmatory samples collected.

Detailed information about the construction, operation or closure/capping of Talbot Park was largely unavailable, however based on the following multiple lines of evidence it appears unlikely that the Site would be at significant risk of LFG impacts from Talbot Park:

- There appeared to have been only relatively minor landfilling practices over a limited period of time at Talbot Reserve, with landfilling reported to be over a 2 year period only;
- LFG monitoring at Talbot Park, undertaken approximately 5 years ago, did not report elevated LFG concentrations;
- There have been large pockets of residential development in the vicinity of the Site and Talbot Park, both prior to and since the landfilling was undertaken, and there are no known incidences of LFG at hazardous concentrations within or nearby adjacent residences;
- Victorian guidance recommends the maintenance of a buffer around a former landfill for 30 years after which time LFG risks are considered to be low. The landfill has been closed for approximately 26 years, which is approaching the Victorian EPA 'minimum risk' requirement for the maintenance of a buffer (30 years);
- The level of capping (if any) installed upon closure of the landfill at Talbot Park is unknown. Current nearby site conditions (with public open spaces and vacant areas) may potentially limit pressure build-up and lateral migration of LFG to the Site;
- Lateral migration of LFG was not encountered during testing at three (3) locations (including two [2] stormwater drain locations and one [1] sprinkler valve location), tested in January 2014;
- No observable LFG odours or LFG issues were identified at the Site during recent sampling undertaken in January and February 2014; and
- A buffer distance of approximately 400 m exists between the Site and Talbot Reserve.

Based on the above information and the LFG monitoring undertaken at the Site, it is considered that the potential for methane gas to be present at the Site, which would pose a potential health risk to future low density residential users of the Site is low.

EPAV Publication 788.1 *'Siting, Design, Operation and Rehabilitation of Landfills,'* 2009, prescribes buffer distances to manage LFG impacts from closed landfills. The buffer distances are measured from the sensitive land use to the edge of the closest cell, or in the absence of knowledge of the cell location, the premise boundary is used as the point of measurement. Publication 788.1 indicates that a buffer zone of at least 500 metres should be maintained from buildings or structures for a minimum period of 30 years following closure, for landfills filled with putrescible waste. It is noted that Clayton West Primary School is located approximately 400 m north east of Talbot Park, and Talbot Park was rehabilitated at the earliest 26 years ago.

Based on the site history information obtained and given that Clayton West Primary School lies within the buffer zone prescribed in EPAV Publication 788.1, it was considered that there was potential for methane gas to exist at the Site. Given the uncertainty associated with the potential for LFG to exist, empirical testing was undertaken to evaluate the risk posed by LFG.

Limited LFG monitoring undertaken using a handheld LFG meter at the former Clayton West Primary School did not report concentrations of methane at the three (3) locations sampled. Additionally, three (3) LFG bores were installed in the southwest corner of the Site (the closest corner to Talbot Park). LFG confirmatory analysis did not report concentrations of methane within the LFG bores. Therefore, based on the results of the LFG sampling, it is considered that the potential for LFG to be present at the Site, which would pose a potential health risk to future low density residential users of the Site is low.

8 Conclusion

Two (2) assessments have previously been undertaken relating to the Site. One (1) assessment involved a site history review, while the other assessment involved gridded soil sampling across the entire Site. The site history review noted the presence of a former quarry located south west of the Site, which was noted to be disused by 1984. Prensa undertook a review of the two (2) assessments and noted that the former quarry was rehabilitated into a park (Talbot Park) by 1984.

A desktop review of Talbot Park found that minimal information was publicly available regarding the use of Talbot Park as a former landfill. Information obtained from by EPAV and the City of Monash, indicated that Talbot Park was backfilled with putrescible waste (and possibly also solid inert waste) between 1977-1978. Council records indicated that the landfill was converted into a park circa 1988-1991. Further information obtained from the City of Monash indicated that LFG sampling undertaken at Talbot Park, circa 5 years ago, indicated that methane gas was not migrating off-site from the park boundaries.

However, anecdotal evidence provided to Prensa indicated that LFG has been detected at the boundary between Talbot Park and the Centre Road quarry. As a consequence of the uncertainty regarding whether LFG is present at the Talbot Park boundaries, landfill gas sampling was conducted at the Site.

LFG monitoring was undertaken by Prensa using a hand held LFG meter at the former Clayton West Primary School in January 2014. The monitoring reported non-detectable concentrations of methane at the three (3) locations sampled, which predominantly comprised stormwater drains and service pits at the Site.

6 Conceptual Site Model

6.1 Site Specific Geology

Prensa reviewed the Geological Map Series Melbourne Map Sheet 1:63,360, No. 849, Zone 7, Ringwood. The map identified Quaternary-aged sand ridges and sand hills at the Site. The Site was predominantly surrounded by Quaternary aged high level alluvium.

6.2 Potential Sources of LFG Contamination

6.2.1 Off Site

Potential off site source of LFG contamination is the former landfill property (now Talbot Park) located approximately 400 m south west of the Site and former potential landfill located at 1221-1249 Centre Road.

6.3 Contaminants of Potential Concern

The potential contaminant of concern is methane, a known by product of landfill decomposition, particularly where putrescible waste has been disposed.

6.4 Transport Mechanisms and Exposure Pathways

Methane can migrate through the soil profile, at varying depths above the ground water table.

The main potential exposure pathway for occupants of the Site is vapour inhalation of methane gas.

6.5 Potential Receptors

The on-site human receptors would include the following:

- Contractors during the development of the Site; and
- Users of the proposed future residential development.

7 Significance of Results

Based on the site history review undertaken, it is understood that Talbot Park and the surrounding vacant area adjacent north and north west of Talbot Park, operated as a quarry from sometime between 1956 to 1988. It appears that Talbot Park was filled with putrescible wastes between 1977-1978. Aerial photographs indicated that the Talbot Park area was backfilled by 1988, although the remaining quarry area was not backfilled at this time. Talbot Park area was rehabilitated into a park sometime between 1988-1991, while the remaining quarry area appeared to have been backfilled sometime between 1991-2006.

Prensa contacted both EPAV and the City of Monash to obtain information regarding Talbot Park. Both EPAV and the City of Monash indicated that Talbot Park was formerly a quarry and was subsequently used as a landfill, prior to being rehabilitated into a park. City of Monash indicated that LFG monitoring was undertaken at Talbot Park, circa 5 years ago, which did not detect LFG at Talbot Park. However, Prensa understands that an audit is currently being undertaken at the former quarry located adjacent and north, north west of Talbot Park and anecdotal information exists that suggests that LFG has been detected in LFG bores located at the boundary of the former Centre Road quarry and Talbot Park.

Table 3 below outlines the construction details of the LFG bores, in accordance with Table B.3 of EPA Publication 788.1.

Table 3: LFG Bore Construction

Gas Bore	Total Depth	Bore casing	Bore screen	Screen length
GB1	1.8 m	0.0 – 1.0 m	1.0 – 1.8 m	0.8 m
GB2	2.0 m	0.0 – 1.0 m	1.0 – 2.0 m	1.0 m
GB3	1.9 m	0.0 – 1.0 m	1.0– 1.9 m	0.9 m

The LFG bore construction logs have been included as Appendix C.

5.5.2 LFG Sampling

Helium leak testing was undertaken prior to sampling, to verify the integrity of the construction seal. The leak testing was conducted by Eurofins MGT on 28th February 2014. The LFG bores passed the leak test.

Methane laboratory confirmation samples were also collected using a vacuum chamber to extract gas into a tedlar bag. The gas as was sampled at a rate of 1L/min using a calibrated sample pump.

Methane, carbon dioxide, carbon monoxide, oxygen and sulphide readings were also taken using a GA2000 LFG Analyser.

All soil gas probes were sampled in accordance with Victorian EPA Draft Publication 1416 September 2011- Subsurface Geology.

5.5.3 LFG Analytical Schedule

Gas was collected into a sample bag and transported to Eurofins-mgt for methane analysis using Gas Chromatography – Flame Ionization Detection (GC-FID).

5.5.4 LFG Criteria

Detectable methane concentrations were compared to Table 6.4 *'LFG Action Levels'* in the EPA Publication 788.1: *Siting, Design, Operation and Rehabilitation of Landfills*, 2010, which prescribes action levels based on the location where methane is detected.

5.5.5 LFG Results

Methane peak concentrations of 0.1 %v/v were detected in GB1 and GB2, during sampling. Methane laboratory confirmation samples were also collected using a vacuum chamber to extract gas into a Tedlar bag using a calibrated SKC sample pump. Methane was not detected in the samples analysed.

It is noted that a detection of methane is not uncommon in the first twenty seconds of sampling in LFG bores, as methane is a light compound that can sit at the top of a bore. However, the lab confirmation results (which have a LOR of 20 ppm or 0.002 %v/v) confirmed that methane was not present within the stabilised readings above 20 ppm.

The Eurofins MGT LFG assessment report includes further information relating to the methane assessment and has been included as Appendix D.

5.4 LFG Monitoring

The former quarry to the south west of the Site (currently Talbot Park) was converted into a landfill following closure of the quarry. Closed landfills can continue to produce methane gas for many years following closure, which can potentially migrate offsite through the local geology following a path of least resistance into buildings and houses nearby.

Sarah Fitzpatrick and Holly Butler of Prensa attended the former Clayton West Primary School site on Thursday the 16th of January 2014 to conduct a LFG assessment. A hand held GFM410 LFG monitor was used to statistically measure oxygen, carbon dioxide and methane. Of particular interest was the presence of methane gas, which is a known by-product of landfill decomposition, particularly where putrescible waste has been deposited.

Gas measurements were taken to assess for the presence of landfill related gases. A total of three (3) measurements were taken at, and adjacent to the Site, as outlined in Table 2 below. Only three (3) locations were sampled, due to a lack of suitable locations (such as stormwater drains and service pits) to sample from. The LFG monitor did not register a detectable concentration of methane at any of the three (3) monitored locations.

Table 2: LFG Monitoring Results

Location	Methane (%)	Carbon Dioxide (%)	Oxygen (%)
Stormwater drain, southern boundary of the Site	0	0.1	21.1
Stormwater drain, northern pedestrian walkway to the Site	0	0.8	20.5
Sprinkler valve, south eastern corner of the Site	0	0	21.3

As part of the site inspection, several standpipes were noted adjacent to the southern portion of the Site to the west, in the former Centre Road quarry. A search of the online register of EPA audit sites and a review of Victoria's Groundwater Database were not able to provide any information to indicate whether the standpipes were monitoring wells. The audit report prepared for the northern portion of 1213-1217 Centre Road, Oakleigh South, indicated, that a bore network appears to be present on the former quarry located north of the property (1221-1249 Centre Road), however, no assessment or audit report is publicly available for the former quarry (1221-1249 Centre Road).

5.5 Intrusive LFG Assessment

5.5.1 LFG Bore Installation

Three (3) LFG bores (GB1, GB2 and GB3) were installed along the southern and western boundary of the Site (the closest boundaries to Talbot Park). The LFG bores were installed by Star Drilling on 14th February 2014, using 50 mm PVC piping for the casing. Where possible, bores were sealed with bentonite across both fill and natural soil to ensure that the bores were appropriately sealed so that any gas accumulating would be retained for sampling. The gas bore locations have been illustrated in Figure 2, provided in the Figures section of this report.

migration of gas at the boundaries. City of Monash was unable to provide the results of the monitoring as the documents were confidential. No further information was provided by the City of Monash.

5.2 Geology

Prensa reviewed the Geological Map Series Melbourne Map Sheet 1:63,360, No. 849, Zone 7, Ringwood. The map identified Quaternary-aged sand ridges and sand hills at the Site. The Site was predominantly surrounded by Quaternary aged high level alluvium.

5.3 Hydrogeology

5.5.1 Surface Water Receptors

The closest surface water receptors to the Site were:

- Various lakes within Huntingdale and Metropolitan Golf Course, located approximately 500 m, 900 m and 1.5 km north west;
- Lakes within the former sand quarry, located approximately 400 m south west;
- A lake within Commonwealth Golf Club located approximately 1.4 km south west;
- Karkarook Lake, located approximately 2.8 km south west;
- Scotchman's Creek, located approximately 3 km north; and
- Port Phillip Bay, located approximately 9 km south of the Site.

5.5.2 Groundwater Database Search

A search of the *Visualising Victoria's Groundwater* online database identified 6 registered groundwater wells within a 500 m radius of the Site. A review of the bores has been summarised in Table 1 below.

Table 1: Summary of Nearby Groundwater Bores

Bore ID	Location	Well Depth (m)	Use	Lithology screened
S9038303/2	200 m south west	15.00	Unknown	Silty clay
109629	480 m south west	50.292	Assessment	Clay and gravel
109629	500 m north west	50.29	Assessment	Clay and gravel
109630	500 m north west	50.29	Assessment	Unknown
109631	500 m north west	50.29	Assessment	Unknown
S9038303/1	500 m north west	6.00	Assessment	Silty sand and silty clay

No standing water level data existed for the groundwater wells.

Anecdotal evidence has indicated that the depth to groundwater at and in the vicinity of the Site is considered likely to be largely influenced by the quarrying and excavation activities undertaken at Talbot Park and 1221-1249 Centre Road. Details regarding the depth to groundwater were unavailable, despite numerous attempts to gain information from the adjacent audit property and nearby area from numerous sources.

5.1.2 Online Review

A review of online resources confirmed that Talbot Park was a former landfill. A City of Monash webpage indicated that numerous sand quarries were located around the Clayton and South Oakleigh areas, with many of these quarries later used as municipal rubbish tips. Talbot Park was listed as a tip that was later rehabilitated into a park between 1988-1991.

5.1.3 EPA Review

Prensa contacted EPAV to obtain information regarding Talbot Park and also reviewed several publicly available EPAV documents. The information obtained from EPAV included the following:

- EPAV provided Prensa with an untitled, un-dated map from the South Eastern Regional Waste Management Group of old landfills located within the Heatherton/Dingley area. The map indicated that the former quarry at Talbot Park had been filled. The map also indicated that two quarries, Consolidated Quarries and City of Oakleigh Ex, formerly existed adjacent to the west and north of Talbot Park, bounded by Huntingdale Road and Centre Road.
- An untitled excel document provided by EPAV to Prensa indicated that Talbot Park was formerly a municipal landfill from 1977-1978. Prior to this the park was used as a sand quarry. The host aquifer was described as unconsolidated sedimentary, and it was reported that a well had been removed from the park. The landfill type was described as 'filling resource excavation' and the landfill was filled with both solid inert and putrescible waste. The estimated depth of the pit was listed as 4.2 m.
- A search of EPAV audit reports indicated that an environmental audit had not been undertaken at Talbot Park, however two (2) audit reports were found to exist for the northern and southern portions of the property located adjacent to Talbot Park to the west, west of Talbot Avenue. Current Melways and the audit reports indicate that this property was a former quarry. No reference was made to the risk of LFG migration within the audit reports.
- Prensa reviewed EPA Publication 1270 'Assessment of the potential for methane gas movement from Victorian Landfills' 2009, which assessed all licensed and formerly licensed landfills recorded in the EPA's database (a total of 260 landfills) for the potential for methane gas migration. It was noted that Talbot Park was not listed as a landfill assessed within this publication.
- A publicly available map on the EPA website titled 'Clayton area current and closed Landfills and Composters' indicates the location of former and current landfills within the Clayton South, Clarinda and Dingley areas. The map did not indicate that a landfill was formerly located at Talbot Park.
- Prensa contacted the EPA auditor who is currently undertaking an audit on the former quarry located adjacent to the west of the Site, located adjacent north and west of Talbot Park, at 1221-1249 Centre Road. The auditor indicated that LFG is present in the monitoring bores located on the mutual boundary between the former Centre Road quarry and Talbot Park. No further information was able to be provided to Prensa due to confidentiality reasons.

5.1.4 City of Monash Review

The City of Monash was contacted to obtain council documentation relating to Talbot Park. Written information obtained from April Williams, Waste Services Project Officer indicated that the council operated a landfill at Talbot Road, which was filled between 1977-1978, with putrescible waste. The landfill was small and some monitoring was undertaken approximately 5 years ago, which showed no

In completing the above tasks, Prensa undertook works in general accordance with the following:

- Environment Protection Act, 1970;
- State Environment Protection Policy (SEPP), *Prevention and Management of Contamination of Land*, 2002;
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM) No.1 Amendment, 2013;
- Victorian EPA Publication 788.1: *Best Practice Environmental Management – Siting, Design, Operation and Rehabilitation of Landfills*, 2010;
- Australian Standard 4482.1, Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds, 2005;
- Australian Standard 4482.2, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, 1999;
- Victorian EPA Publication 1416: *Draft Landfill Gas Fugitive Emissions Monitoring Guidelines*, 2011; and
- EPA Publication 1270: *Assessment of the Potential for Methane Gas Movement from Victorian Landfills*, 2009.

5 Findings

5.1 Site History Findings

5.1.1 Report Review

As part of the site history review for Clayton West Primary School, Prensa reviewed the following documents:

- Atma Environmental (Atma), *Phase 1 Environmental Site Assessment: Former Clayton West Primary School, South Oakleigh, Victoria*, 12 February 2008. The scope of this assessment included a site history review and a site inspection. The report noted that a former quarry was located adjacent the Site to the west/south west and is subject to an environmental audit overlay. The assessment undertook a search of Treatment and Disposal Facilities for Prescribed Wastes on the EPAV website, and found at the time of the assessment that no prescribed waste or disposal facility was found to be within 1 km of the Site. The historical aerial photographs, dating back to 1951, noted the presence of a *"quarry pit"* located adjacent south west of the Site, which was reported to have expanded in the 1963 aerial photograph and was disused by 1984. No reference was made within the report to the potential for LFG to be present at the Site.
- Atma, *Phase 2 Environmental Site Assessment: Former Clayton West Primary School, South Oakleigh, Victoria*, 15 October 2008. The scope of the assessment included soil sampling from thirty-two (32) gridded locations to 1.0 m using a solid stem auger. No reference was made within the report to the potential for LFG to be present at the Site.
- Prensa, *Clayton West Primary School Desktop Document Review*, 6 December 2011. The scope of the assessment included the review of the two Atma assessments. The report noted that the quarry located south west of the Site, was developed into a recreational park by 1984 (Talbot Park). No reference was made within the report to the potential for LFG to be present at the Site.

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1 Introduction

Prensa was engaged by Department of Treasury and Finance (DTF) to undertake a landfill gas (LFG) assessment at the former Clayton West Primary School, located at 10 Alvina Street, Oakleigh South, Victoria (the Site).

A site locality plan has been provided as Figure 1 in the Figures section of this report.

2 Background

It was understood that DTF proposes to divest the Site, and as part of the divestment process has applied for the Site to be rezoned from Public Use Zone-Education to residential in accordance with the City of Monash Planning Scheme. EPA Victoria (EPAV) prepared a letter *'DEECD Surplus Land Rezoning Project'* addressed to the Department of Transport, Planning and Local Infrastructure, dated 22 November 2013 (EPAV ref: 5003719), in relation to the proposed re-zoning. The letter related to the proposed rezoning of three former primary schools and their close proximity to *"Former sand quarries* [that] *have been historically used for land-filling, which has often included the filling of putrescible wastes"*. Specifically in regards to the Site, the letter stated that *"Clayton West Primary School is adjacent to the former Talbot Park landfill site."*

Furthermore, the letter noted that the *"Schedule to the Development Plan Overlay (DPO) requires a site assessment to be undertaken on these sites to confirm they are suitable for sensitive uses, prior to the development for such uses"*.

DTF requested a LFG assessment be undertaken to assess the potential for LFG to exist at the Site, based on the proposed residential redevelopment of the Site and in light of the comments provided within the EPAV letter.

3 Objective

The objective of the LFG assessment was to provide an indication of the potential for LFG to be present at the Site, which may represent a potential risk to the proposed future residential use of the Site.

4 Scope of Works

As part of the LFG Assessment, Prensa undertook the following:

- Review of environmental assessment reports relating to the Site;
- LFG Desktop review, including liaising with EPAV and the City of Monash;
- Site inspection and monitoring using a portable LFG monitor;
- Supervision of the service clearance of three (3) locations using a Telstra accredited service locator;
- Supervision of the installation of three (3) LFG bores;
- Supervision of leak testing and sampling of three (3) LFG bores, including methane confirmatory samples; and
- Preparation of this report outlining the findings.

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Statement of Limitations

This document has been prepared in response to specific instructions from Department of Treasury and Finance to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The report has been prepared for the use by Department of Treasury and Finance and the use of this report by other parties may lead to misinterpretation of the issues contained in this report. To avoid misuse of this report, Prensa advise that the report should only be relied upon by Department of Treasury and Finance and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and Prensa should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way.

Prensa is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

Prensa acknowledges that any scientifically designed sampling program cannot guarantee all sub-surface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted will be those that maximises the probability of identifying contaminants. Department of Treasury and Finance must therefore accept a level of risk associated with the possible failure to detect certain sub-surface contamination where the sampling and analytical program misses such contamination. Prensa will detail the nature and extent of the sampling and analytical program used in the assessment in the assessment report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

Department of Treasury and Finance recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and the industry standards used to minimise the risk of such cross contamination occurring, however, Department of Treasury and Finance recognises this risk and waives any claims against Prensa and agrees to defend, indemnify and hold Prensa harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

Prensa notes that where information has been provided by other parties in order for the works to be undertaken, Prensa cannot guarantee the accuracy or completeness of this information. Department of Treasury and Finance therefore waives any claim against the company and agrees to indemnify Prensa for any loss, claim or liability arising from inaccuracies or omissions in information provided to Prensa by third parties. No indications were found during our assessments that information contained in this report, as provided to Prensa, is false.

Recommendations for Further Study

The industry recognised methods used in undertaking the works may dictate a staged approach to specific assessments. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further assessment or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of Department of Treasury and Finance and Prensa recognises that that Department of Treasury and Finance will consider their specific needs and the business risks involved. Prensa does not accept any liability for losses incurred as a result of Department of Treasury and Finance not accepting the recommendations made within this report.

- There appeared to have been only relatively minor landfilling practices over a limited period of time at Talbot Park, with landfilling reported to be over a 2 year period only;
- LFG monitoring at Talbot Park undertaken approximately 5 years ago did not report elevated LFG concentrations;
- There have been large pockets of residential development in the vicinity of the Site and Talbot Park, both prior to and since the landfilling was undertaken, and there are no known incidences of LFG at hazardous concentrations within or nearby adjacent residences;
- Victorian guidance recommends the maintenance of a buffer around a former landfill for 30 years after which time LFG risks are considered to be low. The landfill has been closed for approximately 26 years, which is approaching the Victorian EPA 'minimum risk' requirement for the maintenance of a buffer (30 years);
- The level of capping (if any) installed upon closure of the landfill is unknown. Current nearby site conditions (with public open spaces and vacant areas) may potentially limit pressure build-up and lateral migration of LFG to the site;
- Lateral migration of LFG was not encountered during testing at three (3) locations (including two [2] stormwater drain locations and one [1] sprinkler valve location), tested in January 2014;
- No observable LFG odours or LFG issues were identified at the Site during recent sampling undertaken in January and February 2014; and
- A buffer distance of approximately 400 m exists between the Site and Talbot Park.

Based on the above information and the LFG monitoring undertaken at the Site, it is considered that the potential for methane gas to be present at the Site, which would pose a potential health risk to future low density residential users of the Site is low.

prensa

Executive Summary

Prensa was engaged by the Department of Treasury and Finance (DTF) to undertake a landfill gas (LFG) assessment at former Clayton West Primary School, located at 10 Alvina Street, Oakleigh South (the Site).

A letter was issued by EPA Victoria (EPAV) relating to the proposed residential rezoning of the Site and its close proximity to the former Talbot Park landfill. The letter noted that the *"Schedule to the Development Plan Overlay (DPO) requires a site assessment to be undertaken on these sites to confirm they are suitable for sensitive uses, prior to the redevelopment for such uses."*

DTF requested an assessment that would assess the potential for LFG to exist at the Site, based on the proposed residential development and in light of the comments provided within the EPAV letter.

The objective of the assessment was to provide an indication of the potential for LFG to be present at the Site, which may represent a potential risk to the proposed future low density residential users of the Site.

Two (2) assessments have previously been undertaken relating to the Site. One (1) assessment involved a site history review, while the other assessment involved gridded soil sampling across the entire Site. The site history review noted the presence of a former quarry located south west of the Site, which was noted to be disused by 1984. Prensa undertook a review of the two (2) assessments and noted that the former quarry was rehabilitated into a park (Talbot Park) by 1984.

A desktop review of Talbot Park found that minimal information was publicly available regarding the use of Talbot Park as a former landfill. Information obtained from EPAV and the City of Monash, indicated that Talbot Park was backfilled with putrescible waste (and possibly also solid inert waste) between 1977-1978. Council records indicated that the landfill was converted into a park circa 1988-1991. Further information obtained from the City of Monash indicated that LFG sampling undertaken at Talbot Park, circa 5 years ago, indicated that methane gas was not migrating off-site from the park boundaries.

However, anecdotal evidence provided to Prensa indicated that LFG has been detected at the boundary between Talbot Park and the Centre Road quarry. As a consequence of the uncertainty regarding whether LFG is present at the Talbot Park boundaries, landfill gas sampling was conducted at the Site.

LFG monitoring was undertaken by Prensa using a hand held LFG meter at the former Clayton West Primary School in January 2014. The monitoring reported non-detectable concentrations of methane at the three (3) locations sampled, which predominantly comprised stormwater drains and service pits at the Site.

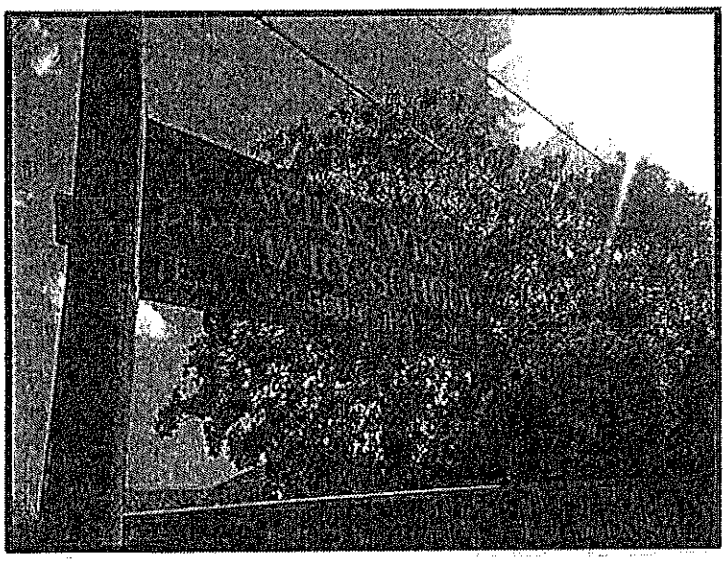
In addition, Prensa installed three (3) LFG bores in the southwest corner of the Site. LFG sampling and analysis did not report detectable concentrations of methane in the confirmatory samples collected.

Detailed information about the construction, operation or closure/capping of Talbot Park was largely unavailable, however based on the following multiple lines of evidence it appears unlikely that the Site would be at significant risk of LFG impacts from Talbot Park:

Landfill Gas Assessment
10 Alvina Street
Oakleigh South, Victoria

Department of Treasury and Finance

March 2014



prensa

261-271 Wattletree Road

Malvern VIC 3144

T: 9508 0100

F: 9509 6125

E: admin@prensa.com.au

ABN: 12 142 106 581

Job No: 13991-01: Client No: D0003

ATTACHMENT 3

Landfill Gas Assessment

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental	Client Sample ID	RPD	SPIKE	LCS	Method blank
Unit 6	Lab Number	Batch	Batch	Batch	Batch
83 Dover St	QA Description		Spike % Recovery	% Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 13, 2008	Oct 13, 2008	Oct 13, 2008	Oct 13, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Organochlorine Pesticides					
4,4'-DDD		< 1	128	106	< 0.005
4,4'-DDE		< 1	108	90	< 0.005
4,4'-DDT		< 1	98	70	< 0.005
a-BHC		< 1	118	104	< 0.005
Aldrin		< 1	115	98	< 0.005
b-BHC		< 1	105	105	< 0.005
Chlordane		< 1	71	-	< 0.01
d-BHC		< 1	117	113	< 0.005
Dieldrin		< 1	118	94	< 0.005
Endosulfan I		< 1	108	97	< 0.005
Endosulfan II		< 1	121	96	< 0.005
Endosulfan sulphate		< 1	112	106	< 0.005
Endrin		< 1	122	89	< 0.005
Endrin aldehyde		< 1	113	101	< 0.005
Endrin ketone		< 1	103	121	< 0.005
g-BHC (Lindane)		< 1	125	108	< 0.005
Heptachlor		< 1	116	100	< 0.005
Heptachlor epoxide		< 1	110	86	< 0.005
Hexachlorobenzene		< 1	128	117	< 0.005
Methoxychlor		< 1	95	63	< 0.005
Toxophene		< 1	89	-	< 0.01
Tetrachloro-m-xylene (surr.)		-	104	110	115

COMMENTS:

mgt Environmental Consulting Pty. Ltd.

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental	Client Sample ID		COMP 1	COMP 3	COMP 6
Unit 6	Lab Number		08-Oc04045	08-Oc04046	08-Oc04047
83 Dover St	Matrix		Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 13, 2008	Oct 13, 2008	Oct 13, 2008
Analysis Type	**LOR**	**Units**			
Organochlorine Pesticides					
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	0.10	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Chlordane	0.1	mg/kg	< 0.1	< 0.1	< 0.1
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxophene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	92	135	82
Tetrachloro-m-xylene (surr.)	1	%	79	118	72
% Moisture	0.1	%	6.8	7.2	6.8

COMMENTS:

Environmental Consulting Pty. Ltd.
3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

CERTIFICATE OF ANALYSIS

Atma Environmental
Unit 6
83 Dover St
Richmond 3121
Site: Clayton West 589

Report Number: 235252 Page 1 of 3
Order Number:
Date Received: Oct 13, 2008
Date Sampled: Oct 13, 2008
Date Reported: Oct 14, 2008
Contact: Tim Robson

Methods

- USEPA 8081A Organochlorine Pesticides
- Method 102 - ANZECC - % Moisture

Comments

Notes

1. The results in this report supersede any previously corresponded results.
2. All Soil Results are reported on a dry basis.
3. Samples are analysed on an as received basis.
4. LOR's are matrix dependent. Stated LOR's may be raised where sample extracts are diluted due to interferences.

ABBREVIATIONS
mg/kg : milligrams per kilograms, mg/L : milligrams per litre, ppm : parts per million,
LOR : Limit of Reporting
RPD : Relative Percent Difference
CRM : Certified Reference Material
LCS : Laboratory Control Sample

Authorised

Report Number: 235252

Michael Wright
Laboratory Manager
NATA Signatory

Rhonda Chouman
Client Manager
NATA Signatory

Orlando Scalzo
Chief Organic Chemist
NATA Signatory

Tammy Lakeland
Chief Inorganic Chemist

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited
Laboratory Number 1261
The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced, except in full.

Environmental Laboratory Industry Group
Member

Further Sample Analysis Request

Atma *Environmental*

Sheet 1 of 1 Date: 10 (Samples Despatched On: 1/10/08)

Previous Report Number: 234699

PROJECT: Clayton West Site No: 589

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER		ANALYSIS FOR: OCP's								CONTAINERS	COMPOSITING INSTRUCTIONS:
COMP 1		✓					✓								1	
COMP 3		✓					✓								1	
COMP 6		✓					✓								1	
TOTAL:							3									

△ REQUESTED BY: (sign) (DATE/TIME) 10/10/08

■ LAB NAME: mgt Environmental (DATE/TIME)

REC'D FOR LAB BY: (sign)

FINAL (TYPED) RESULTS SHALL BE AVAILABLE WITHIN: 24 HRS 48 HRS NORMAL

REMARKS:

Email Results to:

smelch@atmaenvironmental.com
gberry@atmaenvironmental.com
ojohns@atmaenvironmental.com
trobson@atmaenvironmental.com
rmophillips@atmaenvironmental.com
fclarke@atmaenvironmental.com

NOTE: Use only 50% of each jar to make composite sample. Mix content of jars thoroughly before taking 50% out.
Store all samples in cool, dark place.

△ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 774374)							
EM0808179-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	89.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	93.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	84.7	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 774373)							
EM0808175-004	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	72.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 774855)							
EM0808211-006	Anonymous	EP080: C6 - C9 Fraction	---	28 mg/kg	88.8	---	---
EP080/071: Total Petroleum Hydrocarbons (QCLot: 775670)							
EM0808208-003	Anonymous	EP071: C10 - C14 Fraction	---	605 mg/kg	77.7	60	130
		EP071: C15 - C28 Fraction	---	1460 mg/kg	101	60	130
		EP071: C29 - C36 Fraction	---	342 mg/kg	115	60	130

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

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

Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 774374)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	92.0	82.4	122
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.6 mg/kg	95.7	87.4	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	102	88.5	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	99.3	89.2	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	97.7	88.2	118
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	98.8	86.8	117
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	91.6	82	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 774373)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	87.9	71.9	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 774855)								
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	32 mg/kg	97.8	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 775670)								
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	606 mg/kg	69.8	69	123
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	1460 mg/kg	94.2	69	127
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	342 mg/kg	94.5	70	130

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

						Laboratory Duplicate (DUP) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 776257)									
EM0808271-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	15.2	17.3	12.9	0% - 50%
EM0808271-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	---	1.0	%	20.6	21.0	2.0	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 774374)									
EM0808175-023	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	27	28	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	11	12	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	14	14	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	17	8.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	25	37	36.5	No Limit
EM0808237-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	55	61	9.4	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	32	31	4.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	20	22	8.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	38	43	10.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	80	80	0.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 774375)									
EM0808114-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.3	0.8	87.5	No Limit
EM0808175-023	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 774856)									
EM0808211-005	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EM0808211-011	Anonymous	EP080: C6 - C9 Fraction	---	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 775670)									
EM0808208-001	Anonymous	EP071: C15 - C28 Fraction	---	100	mg/kg	140	180	26.5	No Limit
		EP071: C29 - C36 Fraction	---	100	mg/kg	190	250	25.1	No Limit
		EP071: C10 - C14 Fraction	---	50	mg/kg	<50	<50	0.0	No Limit
EM0808241-001	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

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 = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Environmental Division

QUALITY CONTROL REPORT

Work Order	: **EM0808243**	Page	: 1 of 5
Client	: **ATMA ENVIRONMENTAL P/L**	Laboratory	: Environmental Division Melbourne
Contact	: MR TIM ROBSON	Contact	: Paul Loewy
Address	: 6/83 DOVER ST RICHMOND VIC, AUSTRALIA 3121	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: trobson@atmaenvironmental.com	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 94296955	Telephone	: +61-3-8549 9600
Facsimile	: +61 94295911	Facsimile	: +61-3-8549 9601
Project	: CLAYTON WEST	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: 589		
C-O-C number	: ----	Date Samples Received	: 02-OCT-2008
Sampler	: TR	Issue Date	: 09-OCT-2008
Order number	: ----		
		No. of samples received	: 1
Quote number	: ME/170/05	No. of samples analysed	: 1

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

This Quality Control Report contains the following information:

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

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

WORLD RECOGNISED ACCREDITATION

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
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

Analytical Results

Sub-Matrix: SOIL	Client sample ID	SPLITE-300908	—	—	—	—
	Client sampling date / time	01-OCT-2008 09:00	—	—	—	—
Compound	CAS Number	LOR	Unit	EM0808243-001	—	—	—	—
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	—	1.0	%	7.4	—	—	—	—
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	—	—	—	—
Cadmium	7440-43-9	1	mg/kg	<1	—	—	—	—
Chromium	7440-47-3	2	mg/kg	<2	—	—	—	—
Copper	7440-50-8	5	mg/kg	8	—	—	—	—
Lead	7439-92-1	5	mg/kg	<5	—	—	—	—
Nickel	7440-02-0	2	mg/kg	<2	—	—	—	—
Zinc	7440-66-6	5	mg/kg	17	—	—	—	—
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	—	—	—	—
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	—	10	mg/kg	<10	—	—	—	—
C10 - C14 Fraction	—	50	mg/kg	<50	—	—	—	—
C15 - C28 Fraction	—	100	mg/kg	230	—	—	—	—
C29 - C36 Fraction	—	100	mg/kg	230	—	—	—	—
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	103	—	—	—	—
Toluene-D8	2037-26-5	0.1	%	81.6	—	—	—	—
4-Bromofluorobenzene	460-00-4	0.1	%	83.8	—	—	—	—

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 preformed, 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 insuffient 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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0808243**	Page	: 1 of 4
Client	: **ATMA ENVIRONMENTAL P/L**	Laboratory	: Environmental Division Melbourne
Contact	: MR TIM ROBSON	Contact	: Paul Loewy
Address	: 6/83 DOVER ST RICHMOND VIC, AUSTRALIA 3121	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: trobson@atmaenvironmental.com	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 94296955	Telephone	: +61-3-8549 9600
Facsimile	: +61 94295911	Facsimile	: +61-3-8549 9601
Project	: CLAYTON WEST	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ---		
C-O-C number	: ---	Date Samples Received	: 02-OCT-2008
Sampler	: TR	Issue Date	: 09-OCT-2008
Site	: 589		
		No. of samples received	: 1
Quote number	: ME/170/05	No. of samples analysed	: 1

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics

Chain of Custody Record

(modified after US EPA chain of custody form)

Sheet 1 of 1.

Atma Environmental

PROJECT: Clayton West

Sampler's Signature: △ [signature]

Sampler's Name: △ TIM ROBSON

Site No: 589

DATE: 1/10/08

Time: 9am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK /	ANALYSIS FOR: 8 metals	TRHS									NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
SPLITE-300908	✓			✓			✓	✓											
TOTAL:																			

Environmental Division
Melbourne
Work Order
EM0808243
Telephone : +61-3-8549 9600
MS-811

DISPATCHED BY: (sign) △ [signature] (DATE/TIME)

■ RECEIVED BY: (sign) (DATE/TIME)

COURIERED BY: (sign) [signature] (DATE/TIME) 1/10 2/12.58

LAB NAME: ALS

INITIAL RESULTS REQUESTED WITHIN: ~~24 HRS~~ ~~48 HRS~~ ~~3-4 DAY~~ NORMAL

REMARKS: **Please email COC upon reciept of samples as confirmation for our records.**

Please email results to:

~~callis@atmaenvironmental.com~~
~~fclarke@atmaenvironmental.com~~
~~gberry@atmaenvironmental.com~~
trobson@atmaenvironmental.com
~~mphillips@atmaenvironmental.com~~

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

[signature] 14:00 2/10

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental	Client Sample ID	BH21/0.5	BH21/0.5	RPD	SPIKE	LCS	Method blank
Unit 6	Lab Number	08-Oc00952	08-Oc00952	08-Oc00952	08-Oc00952	Batch	Batch
33 Dover St	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	% Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery	% Recovery	mg/L
Heavy Metals							
Mercury		< 0.1	< 0.1	< 1		108	< 0.005

COMMENTS:

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID	BH21/0.1	BH21/0.1	RPD	SPIKE
	Lab Number	08-Oc00951	08-Oc00951	08-Oc00951	08-Oc00951
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery
	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery
Heavy Metals					
Mercury		< 0.1	< 0.1	< 1	-

COMMENTS:

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Alma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID	COMP10	COMP10	RPD	SPIKE
	Lab Number	08-Oc00470	08-Oc00470	08-Oc00470	08-Oc00470
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery
	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery
Heavy Metals					
Mercury		< 0.1	< 0.1	< 1	94

COMMENTS:

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Atma Environmental
Unit 6
83 Dover St

Richmond 3121

	Client Sample	RPD	SPIKE	LCS	Method blank
	Lab Number	Batch	Batch	Batch	Batch
	QA Description		Spike % Recovery	% Recovery	
	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Heavy Metals					
Cobalt		< 1	104	106	< 0.2
Copper		< 1	113	109	< 0.2
Lead		14	107	101	< 0.05
Manganese		-	94	95	< 0.25
Molybdenum		< 1	94	110	< 0.25
Nickel		< 1	102	105	< 0.2
Selenium		< 1	78	107	< 0.05
Tin		< 1	98	120	< 0.25
Zinc		17	102	119	< 0.2

COMMENTS:

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Atma Environmental
Unit 6
33 Dover St
Richmond 3121

Client Sample	RPD	SPIKE	LCS	Method blank
Lab Number	Batch	Batch	Batch	Batch
QA Description		Spike % Recovery	% Recovery	
Matrix	Soil	Soil	Soil	Soil
Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type / Units		% Recovery	% Recovery	mg/L
Chlorinated Hydrocarbons				
1,3-Dichlorobenzene		< 1	86	107	< 0.02
1,3,5-Trichlorobenzene		< 1	90	103	< 0.005
1,4-Dichlorobenzene		< 1	126	99	< 0.02
Benzal chloride		< 1	110	107	< 0.005
Benzotrichloride		< 1	129	128	< 0.005
Benzyl chloride		< 1	-	-	< 0.02
Hexachlorobenzene		< 1	128	111	< 0.005
Hexachlorobutadiene		< 1	105	108	< 0.005
Hexachlorocyclopentadiene		< 1	94	83	< 0.005
Hexachloroethane		< 1	99	101	< 0.005
Pentachlorobenzene		< 1	106	-	< 0.005
Polychlorinated Biphenyls				
Aroclor-1016		< 1	-	-	< 0.01
Aroclor-1221		< 1	-	-	< 0.01
Aroclor-1232		< 1	-	-	< 0.01
Aroclor-1242		< 1	-	-	< 0.01
Aroclor-1248		< 1	-	-	< 0.01
Aroclor-1254		< 1	-	-	< 0.01
Aroclor-1260		< 1	105	-	< 0.01
Total PCB		< 1	105	77	< 0.1
Tetrachloro-m-xylene (surr.)		-	104	95	96
Heavy Metals				
Antimony		< 1	95	113	< 0.25
Arsenic		< 1	85	101	< 0.05
Beryllium		< 1	98	104	< 0.2
Boron		< 1	103	101	< 0.25
Cadmium		< 1	107	105	< 0.02
Chromium		16	106	113	< 0.2

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID	RPD	SPIKE	LCS	Method blank
	Lab Number	Batch	Batch	Batch	Batch
	QA Description		Spike % Recovery	% Recovery	
	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Cyanide (total)		< 1	105	93	< 0.5
Organochlorine Pesticides					
4.4'-DDD		< 1	128	124	< 0.005
4.4'-DDE		< 1	108	127	< 0.005
4.4'-DDT		< 1	98	101	< 0.005
a-BHC		< 1	118	110	< 0.005
Aldrin		< 1	115	118	< 0.005
b-BHC		< 1	105	121	< 0.005
Chlordane		< 1	71	-	< 0.01
d-BHC		< 1	117	125	< 0.005
Dieldrin		< 1	118	118	< 0.005
Endosulfan I		< 1	108	120	< 0.005
Endosulfan II		< 1	121	111	< 0.005
Endosulfan sulphate		< 1	112	129	< 0.005
Endrin		< 1	122	128	< 0.005
Endrin aldehyde		< 1	113	99	< 0.005
Endrin ketone		< 1	103	125	< 0.005
g-BHC (Lindane)		< 1	125	124	< 0.005
Heptachlor		< 1	116	129	< 0.005
Heptachlor epoxide		< 1	110	97	< 0.005
Methoxychlor		< 1	95	119	< 0.005
Toxaphene		< 1	89	-	< 0.01
Chlorinated Hydrocarbons					
1.2-Dichlorobenzene		< 1	86	-	< 0.02
1.2.3-Trichlorobenzene		< 1	123	106	< 0.005
1.2.3.4-Tetrachlorobenzene		< 1	126	121	< 0.005
1.2.3.5-Tetrachlorobenzene		< 1	-	-	< 0.005
1.2.4-Trichlorobenzene		< 1	-	-	< 0.005
1.2.4.5-Tetrachlorobenzene		< 1	108	116	< 0.005

COMMENTS:

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Atma Environmental Unit 6 93 Dover St Richmond 3121	Client Sample ID	COMP1	COMP1	RPD	SPIKE	LCS	Method blank
	Lab Number	08-Oc00461	08-Oc00461	08-Oc00461	08-Oc00461	Batch	Batch
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	% Recovery	
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery	% Recovery	mg/L
Polycyclic Aromatic Hydrocarbons							
Acenaphthene		< 0.1	< 0.1	< 1	121	109	< 0.02
Acenaphthylene		< 0.1	< 0.1	< 1	113	114	< 0.02
Anthracene		< 0.1	< 0.1	< 1	106	128	< 0.02
Benz(a)anthracene		< 0.1	< 0.1	< 1	87	123	< 0.02
Benzo(a)pyrene		< 0.1	< 0.1	< 1	124	121	< 0.02
Benzo(b)fluoranthene		< 0.1	< 0.1	< 1	129	113	< 0.02
Benzo(g,h,i)perylene		< 0.1	< 0.1	< 1	129	104	< 0.02
Benzo(k)fluoranthene		< 0.1	< 0.1	< 1	121	103	< 0.02
Chrysene		< 0.1	< 0.1	< 1	94	96	< 0.02
Dibenz(a,h)anthracene		< 0.1	< 0.1	< 1	118	126	< 0.02
Fluoranthene		< 0.1	< 0.1	< 1	103	95	< 0.02
Fluorene		< 0.1	< 0.1	< 1	121	112	< 0.02
Indeno(1,2,3-cd)pyrene		< 0.1	< 0.1	< 1	128	128	< 0.02
Naphthalene		< 0.1	< 0.1	< 1	111	97	< 0.02
Phenanthrene		< 0.1	< 0.1	< 1	110	121	< 0.02
Pyrene		< 0.1	< 0.1	< 1	101	94	< 0.02
Phenols							
2-Chlorophenol		-	-	< 1	112	106	-
2-Methylphenol (o-Cresol)		-	-	< 1	113	111	-
2-Nitrophenol		-	-	< 1	89	71	-
2,4-Dichlorophenol		-	-	< 1	112	109	-
2,4-Dimethylphenol		-	-	< 1	127	114	-
2,4,6-Trichlorophenol		-	-	< 1	103	96	-
2,6-Dichlorophenol		-	-	< 1	117	115	-
3&4-Methylphenol (m&p-Cresol)		-	-	< 1	117	108	-
4-Chloro-3-methylphenol		-	-	< 1	102	111	-
Pentachlorophenol		-	-	< 1	111	-	-
Phenol		-	-	< 1	121	110	-

COMMENTS:

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID:	BH22/0.1	BH22/0.1	RPD	SPIKE
	Lab Number	08-Oc00456	08-Oc00456	08-Oc00456	08-Oc00456
	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery
	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery
pH (1:5 Aqueous extract)		6.9	7.0	-	-

COMMENTS:

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Atma Environmental	Client Sample ID	RPD	SPIKE	LCS	Method blank
Unit 6	Lab Number	Batch	Batch	Batch	Batch
83 Dover St	QA Description		Spike % Recovery	% Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units		% Recovery	% Recovery	mg/L
Sulphate (S)		4.6	118	118	< 1

COMMENTS:

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Atma Environmental	Client Sample ID	BH6/0.1	BH6/0.1	RPD	SPIKE	LCS	Method blank
Unit 6	Lab Number	08-Oc00453	08-Oc00453	08-Oc00453	08-Oc00453	Batch	Batch
83 Dover St	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	% Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	Units			% RPD	% Recovery	% Recovery	mg/L
Total Recoverable Hydrocarbons							
TRH C6-C9 Fraction by GC		-	-	3.9	84	114	< 0.02
TRH C10-C14 Fraction by GC		< 50	< 50	< 1	82	97	< 0.05
TRH C15-C28 Fraction by GC		< 100	< 100	< 1	-	-	< 0.1
TRH C29-C36 Fraction by GC		< 100	< 100	< 1	-	-	< 0.1
Monocyclic Aromatic Hydrocarbons							
Benzene		-	-	3.7	93	-	< 0.005
Toluene		-	-	3.9	83	-	< 0.005
Ethylbenzene		-	-	3.8	90	-	< 0.005
Xylenes(ortho,meta and para)		-	-	3.5	91	-	< 0.005

COMMENTS:

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Atma Environmental	Client Sample ID		DECON-300908	FIELD-300908	TRIP-300908
Unit 6	Lab Number		08-Oc00477	08-Oc00479	08-Oc00480
83 Dover St	Matrix		Water	Water	Water
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**			
Total Recoverable Hydrocarbons					
TRH C6-C9 Fraction by GC	0.02	mg/L	< 0.02	-	-
TRH C10-C14 Fraction by GC	0.05	mg/L	< 0.05	-	-
TRH C15-C28 Fraction by GC	0.1	mg/L	< 0.1	-	-
TRH C29-C36 Fraction by GC	0.1	mg/L	< 0.1	-	-
Heavy Metals					
Antimony	0.005	mg/L	< 0.005	< 0.005	< 0.005
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Molybdenum	0.005	mg/L	< 0.005	< 0.005	< 0.005
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001
Selenium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Tin	0.005	mg/L	< 0.005	< 0.005	< 0.005
Zinc	0.001	mg/L	< 0.001	< 0.001	< 0.001

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Atma Environmental	Client Sample ID		DUPE-300908	BH21/0.1	BH21/0.5
Unit 6	Lab Number		08-Oc00478	08-Oc00951	08-Oc00952
83 Dover St	Matrix		Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**			
Total Recoverable Hydrocarbons					
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	-	-
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	-	-
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	-	-
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	-	-
% Moisture	0.1	%	7.5	4.0	9.7
Heavy Metals					
Antimony	10	mg/kg	< 10	< 10	< 10
Arsenic	2.0	mg/kg	< 2	< 2	< 2
Beryllium	2	mg/kg	< 2	< 2	< 2
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	< 5	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5
Copper	5	mg/kg	7.4	9.1	16
Lead	5	mg/kg	< 5	< 5	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10
Zinc	5	mg/kg	12	14	32

COMMENTS:

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		COMP13	COMP14	COMP15	COMP16
	Lab Number		08-Oc00473	08-Oc00474	08-Oc00475	08-Oc00476
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	LOR	Units				
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	10	8.0	< 5	< 5

COMMENTS:

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Atma Environmental	Client Sample ID		COMP13	COMP14	COMP15	COMP16
Unit 6	Lab Number		08-Oc00473	08-Oc00474	08-Oc00475	08-Oc00476
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	< 0.1	-	< 0.1	-
Acenaphthylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Anthracene	0.1	mg/kg	< 0.1	-	< 0.1	-
Benz(a)anthracene	0.1	mg/kg	< 0.1	-	< 0.1	-
Benzo(a)pyrene	0.1	mg/kg	< 0.1	-	< 0.1	-
Benzo(b)fluoranthene	0.1	mg/kg	< 0.1	-	< 0.1	-
Benzo(g.h.i)perylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Benzo(k)fluoranthene	0.1	mg/kg	< 0.1	-	< 0.1	-
Chrysene	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibenz(a.h)anthracene	0.1	mg/kg	< 0.1	-	< 0.1	-
Fluoranthene	0.1	mg/kg	< 0.1	-	< 0.1	-
Fluorene	0.1	mg/kg	< 0.1	-	< 0.1	-
Indeno(1.2.3-cd)pyrene	0.1	mg/kg	< 0.1	-	< 0.1	-
Naphthalene	0.1	mg/kg	< 0.1	-	< 0.1	-
Phenanthrene	0.1	mg/kg	< 0.1	-	< 0.1	-
Pyrene	0.1	mg/kg	< 0.1	-	< 0.1	-
Total PAH	0.1	mg/kg	< 0.1	-	< 0.1	-
Chrysene-d12 (surr.)	1	%	80	-	90	-
2-Fluorobiphenyl (surr.)	1	%	123	-	131	-
% Moisture	0.1	%	3.9	4.8	2.8	2.8
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	< 2	< 2	< 2	< 2
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	5.2	< 5	< 5	< 5

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Atma Environmental

Unit 6
83 Dover St
Richmond 3121

Client Sample ID		COMP9	COMP10	COMP11	COMP12
Lab Number		08-Oc00469	08-Oc00470	08-Oc00471	08-Oc00472
Matrix		Soil	Soil	Soil	Soil
Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**			
% Moisture	0.1	%	3.4	3.7	4.0	5.4
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	< 2	< 2	< 2	< 2
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	< 5	< 5	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	< 5	< 5	8.6	13

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Alma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		COMP5	COMP6	COMP7	COMP8
	Lab Number		08-Oc00465	08-Oc00466	08-Oc00467	08-Oc00468
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
% Moisture	0.1	%	7.8	6.0	5.9	5.4
Cyanide (total)	5	mg/kg	< 5			
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	< 2	< 2	< 2	< 2
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Boron	10	mg/kg	< 10	-	-	-
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	< 5	5.3	< 5	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	14	14	7.9	7.8
Lead	5	mg/kg	9.8	14	9.1	< 5
Manganese	5	mg/kg	34	-	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	46	28	21	14

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Atma Environmental	Client Sample ID		COMP5	COMP6	COMP7	COMP8
Unit 6	Lab Number		08-Oc00465	08-Oc00466	08-Oc00467	08-Oc00468
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Hexachloroethane	0.05	mg/kg	< 0.05	-	-	-
Pentachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Dibutylchlorendate (surr.)	1	%	91	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	83	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB	1	mg/kg	< 1	-	-	-
Dibutylchlorendate (surr.)	1	%	91	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	83	-	-	-
Phenols						
2-Chlorophenol	0.1	mg/kg	< 0.1	-	-	-
2-Methylphenol (o-Cresol)	0.1	mg/kg	< 0.1	-	-	-
2-Nitrophenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dichlorophenol	0.1	mg/kg	< 0.1	-	-	-
2.4-Dimethylphenol	0.1	mg/kg	< 0.1	-	-	-
2.4.6-Trichlorophenol	0.1	mg/kg	< 0.1	-	-	-
2.6-Dichlorophenol	0.1	mg/kg	< 0.1	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	< 0.2	-	-	-
4-Chloro-3-methylphenol	0.1	mg/kg	< 0.1	-	-	-
Pentachlorophenol	0.5	mg/kg	< 0.5	-	-	-
Phenol	0.1	mg/kg	< 0.1	-	-	-
Phenol-d6 (surr.)	1	%	100	-	-	-

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Atma Environmental	Client Sample ID		COMP5	COMP6	COMP7	COMP8
Unit 6	Lab Number		08-Oc00465	08-Oc00466	08-Oc00467	08-Oc00468
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxophene	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	91	-	-	103
Tetrachloro-m-xylene (surr.)	1	%	83	-	-	99
Chlorinated Hydrocarbons						
1.2-Dichlorobenzene	0.2	mg/kg	< 0.2	-	-	-
1.2.3-Trichlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.2.3.4-Tetrachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.2.3.5-Tetrachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.2.4-Trichlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.2.4.5-Tetrachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.3-Dichlorobenzene	0.2	mg/kg	< 0.2	-	-	-
1.3.5-Trichlorobenzene	0.05	mg/kg	< 0.05	-	-	-
1.4-Dichlorobenzene	0.2	mg/kg	< 0.2	-	-	-
Benzal chloride	0.05	mg/kg	< 0.05	-	-	-
Benzotrichloride	0.05	mg/kg	< 0.05	-	-	-
Benzyl chloride	0.2	mg/kg	< 0.2	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobutadiene	0.05	mg/kg	< 0.05	-	-	-
Hexachlorocyclopentadiene	0.05	mg/kg	< 0.05	-	-	-

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Atma Environmental	Client Sample ID		COMP5	COMP6	COMP7	COMP8
Unit 6	Lab Number		08-Oc00465	08-Oc00466	08-Oc00467	08-Oc00468
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benz(a)anthracene	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Benzo(a)pyrene	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Benzo(g.h.i)perylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Dibenz(a.h)anthracene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1
Fluorene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1.2.3-cd)pyrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1
Total PAH	0.1	mg/kg	< 0.1	0.8	< 0.1	< 0.1
Chrysene-d12 (surr.)	1	%	101	99	90	92
2-Fluorobiphenyl (surr.)	1	%	133	129	116	128
Organochlorine Pesticides						
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Chlordane	0.1	mg/kg	< 0.1	-	-	< 0.1
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05

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Atma Environmental	Client Sample ID		COMP1	COMP2	COMP3	COMP4
Unit 6	Lab Number		08-Oc00461	08-Oc00462	08-Oc00463	08-Oc00464
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
% Moisture	0.1	%	6.3	8.2	7.2	7.1
Cyanide (total)	5	mg/kg	-	-	-	< 5
Heavy Metals						
Antimony	10	mg/kg	< 10	< 10	< 10	< 10
Arsenic	2.0	mg/kg	< 2	< 2	< 2	< 2
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Boron	10	mg/kg	-	-	-	< 10
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	5.9	< 5	6.4	< 5
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	8.5	11	7.2	< 5
Lead	5	mg/kg	9.3	7.8	6.5	8.2
Manganese	5	mg/kg	-	-	-	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	< 10	< 10	< 10
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	< 2	< 2	< 2	< 2
Tin	10	mg/kg	< 10	< 10	< 10	< 10
Zinc	5	mg/kg	29	26	46	29

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Atma Environmental	Client Sample ID		COMP1	COMP2	COMP3	COMP4
Unit 6	Lab Number		08-Oc00461	08-Oc00462	08-Oc00463	08-Oc00464
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Hexachloroethane	0.05	mg/kg	-	-	-	< 0.05
Pentachlorobenzene	0.05	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	-	92
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	97
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	92
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	97
Phenols						
2-Chlorophenol	0.1	mg/kg	-	-	-	< 0.1
2-Methylphenol (o-Cresol)	0.1	mg/kg	-	-	-	< 0.1
2-Nitrophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.1	mg/kg	-	-	-	< 0.1
2.4-Dimethylphenol	0.1	mg/kg	-	-	-	< 0.1
2.4.6-Trichlorophenol	0.1	mg/kg	-	-	-	< 0.1
2.5-Dichlorophenol	0.1	mg/kg	-	-	-	< 0.1
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	-	-	-	< 0.2
4-Chloro-3-methylphenol	0.1	mg/kg	-	-	-	< 0.1
Pentachlorophenol	0.5	mg/kg	-	-	-	< 0.5
Phenol	0.1	mg/kg	-	-	-	< 0.1
Phenol-d6 (surr.)	1	%	-	-	-	94

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Atma Environmental	Client Sample ID		COMP1	COMP2	COMP3	COMP4
Unit 6	Lab Number		08-Oc00461	08-Oc00462	08-Oc00463	08-Oc00464
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	92
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	97
Chlorinated Hydrocarbons						
1.2-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
1.2.3-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.3.4-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.3.5-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.4-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.4.5-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.3-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
1.3.5-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.4-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
Benzal chloride	0.05	mg/kg	-	-	-	< 0.05
Benzotrichloride	0.05	mg/kg	-	-	-	< 0.05
Benzyl chloride	0.2	mg/kg	-	-	-	< 0.2
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobutadiene	0.05	mg/kg	-	-	-	< 0.05
Hexachlorocyclopentadiene	0.05	mg/kg	-	-	-	< 0.05

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Atma Environmental	Client Sample ID		COMP1	COMP2	COMP3	COMP4
Unit 6	Lab Number		08-Oc00461	08-Oc00462	08-Oc00463	08-Oc00464
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benz(a)anthracene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g.h.i)perylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a.h)anthracene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1.2.3-cd)pyrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Naphthalene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PAH	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene-d12 (surr.)	1	%	134	95	112	98
2-Fluorobiphenyl (surr.)	1	%	116	123	146	125
Organochlorine Pesticides						
4.4'-DDD	0.05	mg/kg	-	-	-	0.10
4.4'-DDE	0.05	mg/kg	-	-	-	0.10
4.4'-DDT	0.05	mg/kg	-	-	-	0.09
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
Chlordane	0.1	mg/kg	-	-	-	< 0.1
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05

COMMENTS:

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental	Client Sample ID		BH25/0.1	BH30/0.1	BH31/0.1	BH32/0.1
Unit 6	Lab Number		08-Oc00457	08-Oc00458	08-Oc00459	08-Oc00460
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	LOR	Units				
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
Monocyclic Aromatic Hydrocarbons						
Benzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Toluene	0.05	mg/kg	-	-	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Xylenes(ortho,meta and para)	0.05	mg/kg	-	-	< 0.05	< 0.2
Fluorobenzene (surr.)	1	%	-	-	80	72
% Moisture	0.1	%	13	7.8	6.4	8.4
pH (1:5 Aqueous extract)	0.1	units	4.9	-	-	-
Sulphate (S)	10	mg/kg	< 10			
Heavy Metals						
Antimony	10	mg/kg	-	< 10	-	-
Arsenic	2.0	mg/kg	-	< 2	-	-
Beryllium	2	mg/kg	-	< 2	-	-
Cadmium	0.5	mg/kg	-	< 0.5	-	-
Chromium	5	mg/kg	-	< 5	-	-
Cobalt	5	mg/kg	-	< 5	-	-
Copper	5	mg/kg	-	8.9	-	-
Lead	5	mg/kg	-	5.7	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Molybdenum	10	mg/kg	-	< 10	-	-
Nickel	5	mg/kg	-	< 5	-	-
Selenium	2	mg/kg	-	< 2	-	-
Tin	10	mg/kg	-	< 10	-	-
Zinc	5	mg/kg	-	15		

COMMENTS:

Environmental Consulting Pty. Ltd.

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental	Client Sample ID		BH6/0.1	BH9/0.1	BH13/0.1	BH22/0.1
Unit 6	Lab Number		08-Oc00453	08-Oc00454	08-Oc00455	08-Oc00456
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		Oct 1, 2008	Oct 1, 2008	Oct 1, 2008	Oct 1, 2008
Analysis Type	**LOR**	**Units**				
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	-	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	-	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	-	< 100
% Moisture	0.1	%	5.8	6.2	6.8	2.8
pH (1:5 Aqueous extract)	0.1	units	-	-	4.8	6.9
Sulphate (S)	10	mg/kg	-	-	330	< 10

COMMENTS:

Environmental Consulting Pty. Ltd.
3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

CERTIFICATE OF ANALYSIS

Atma Environmental
Unit 6
83 Dover St
Richmond 3121
Site: 589 CLAYTON WEST

Report Number: 234699 Page 1 of 26
Order Number:
Date Received: Oct 1, 2008
Date Sampled: Oct 1, 2008
Date Reported: Oct 9, 2008
Contact: Tim Robson

Methods

- USEPA 6010B Heavy Metals & USEPA 7470/71 Mercury
- USEPA 6020 Heavy Metals & USEPA 7470/71 Mercury
- USEPA 8270C Phenols
- USEPA 8082 Polychlorinated Biphenyls
- USEPA 8121 Chlorinated Hydrocarbons
- USEPA 8081A Organochlorine Pesticides
- USEPA 8270C Polycyclic Aromatic Hydrocarbons
- USEPA 8260B - MGT 350A Monocyclic Aromatic Hydrocarbons
- MGT100A-GC (based on USEPA8015)Total Recoverable Hydrocarbons
- USEPA 9010B Cyanide
- APHA 4500-SO4 (SO4 by Discrete Analyser)
- Method 102 - ANZECC - % Moisture
- APHA 4500 pH by Direct Measurement

Comments

Notes

1. The results in this report supersede any previously corresponded results.
2. All Soil Results are reported on a dry basis.
3. Samples are analysed on an as received basis.
4. LOR's are matrix dependent. Stated LOR's may be raised where sample extracts are diluted due to interferences.

ABBREVIATIONS
mg/kg : milligrams per kilograms, mg/L : milligrams per litre, ppm : parts per million,
LOR : Limit of Reporting
RPD : Relative Percent Difference
CRM : Certified Reference Material
LCS : Laboratory Control Sample

Authorised

Report Number: 234699

Michael Wright
Laboratory Manager
NATA Signatory

Rhonda Chouman
Client Manager
NATA Signatory

Orlando Scalzo
Chief Organic Chemist
NATA Signatory

Tammy Lakeland
Chief Inorganic Chemist

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited
Laboratory Number 1261
The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced, except in full.

Environmental Laboratory Industry Group
Member

Further Sample Analysis Request

Atma *Environmental*

Sheet 1 of 1 Date: 2/10/08 (Samples Despatched On: 1/10/08)

Previous Report Number: 234699

PROJECT: Glayton West Site No: 589

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER		ANALYSIS FOR: OCP's	Heavy Metals (ICP)						CONTAINERS	COMPOSITING INSTRUCTIONS:
COMP 5		✓					✓								
BH 2/0.1	✓							✓							
BH 2/0.5	✓							✓							
TOTAL:															

REQUESTED BY: (sign) (DATE/TIME) 2/10/08

■ LAB NAME: mgt Environmental (DATE/TIME)

REC'D FOR LAB BY: (sign)

FINAL (TYPED) RESULTS SHALL BE AVAILABLE WITHIN: ~~24 HRS~~ ~~48 HRS~~ (NORMAL)

REMARKS:

Email Results to:

smeich@atmaenvironmental.com
gberry@atmaenvironmental.com
ojohns@atmaenvironmental.com
(trobson@atmaenvironmental.com)
rmcphillips@atmaenvironmental.com
fclarke@atmaenvironmental.com

NOTE: Use only 50% of each jar to make composite sample. Mix content of jars thoroughly before taking 50% out.
Store all samples in cool, dark place.
△ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

©Further Sample Analysis Request
Last Updated on: 10/3/2008

Sample added. 2/10/08.

Chain of Custody Record

(modified after US EPA chain of custody form)

Sheet 6 of 6

Atma Environmental

PROJECT: Clayton West

Sampler's Signature: △ [signature]

Sampler's Name: △ TIM ROBSON

Site No: 589

DATE: 1/10/08

Time: 9am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SOIL	WATER	BLANK /	ANALYSIS FOR:										NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
SPLIT A-300908	/			/															HOLD
SPLIT B-300908	/			/															HOLD
SPLIT C-300908	/			/															HOLD
SPLIT D-300908	/			/															HOLD
TOTAL:																			

DISPATCHED BY: (sign) (DATE/TIME)
△ [signature]

■ RECEIVED BY: (sign) (DATE/TIME)
Andrew
Report # 234699
1/10

COURIERED BY: (sign) (DATE/TIME)
[signature] 1/10 3:55

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: 24 HRS 48 HRS 3-4 DAY NORMAL (circled)

REMARKS: Please email COC upon reciept of samples as confirmation for our records.

Please email results to:
cellis@atmaenvironmental.com
fclarke@atmaenvironmental.com
gberry@atmaenvironmental.com
trobson@atmaenvironmental.com (circled)
rmcphillips@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

Chain of Custody Record

Atma Environmental

(modified after US EPA chain of custody form)

Sheet 5 of 6

PROJECT: Clayton West

Sampler's Signature: △

Sampler's Name: △ TIM ROBSON

Site No:

DATE: 7/10/08

Time: 9am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK/	ANALYSIS FOR: EPA Screen	PAH's	TRH's	HM Screen	Sulphate	pH					NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
COMP 1								✓		✓									N.D.
COMP 2								✓		✓									Understand
COMP 3								✓		✓									for Comps
COMP 4							✓												for Volatile
COMP 5							✓												constituents
COMP 6								✓		✓									
COMP 7								✓		✓									
COMP 8								✓		✓									
COMP 9										✓									
COMP 10										✓									
COMP 11										✓									
COMP 12										✓									
COMP 13								✓		✓									
COMP 14										✓									
COMP 15								✓		✓									
COMP 16										✓									
DECON-300908	✓			✓					✓	✓									HOLD
DUPA-300908	✓			✓															HOLD
DUPB-300908	✓			✓															HOLD
DUPC-300908	✓			✓															HOLD
DUPD-300908	✓			✓															
DUPE-300908	✓			✓					✓	✓									
FIELD-300908										✓									
TRIP-300908										✓									
TOTAL:							2	8	2	18									

DISPATCHED BY: (sign) △ (DATE/TIME)

COURIERED BY: (sign) (DATE/TIME)

■ RECEIVED BY: (sign) Andrew (DATE/TIME) 1/10

Report #234699

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: 24 HRS 48 HRS 3-4 DAY NORMAL

REMARKS: Please email COC upon reciept of samples as confirmation for our records.

Please email results to: cellis@atmaenvironmental.com, fclarke@atmaenvironmental.com, gberry@atmaenvironmental.com, trobson@atmaenvironmental.com, rmcphillips@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

Chain of Custody Record

Atma Environmental

(modified after US EPA chain of custody form)

Sheet 4 of 5

PROJECT: Clayton West

Sampler's Signature: △

Sampler's Name: △ TIM ROBSON

Site No: 589

DATE: 1/6/08 Time: 9am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK /	ANALYSIS FOR: EPA Screen	PAH's	TRH's	HM Screen	Sulphate	pH	NO of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
BH25/0.1	✓			✓					✓		✓	✓	1		COMP 7
BH25/0.5	✓			✓									1		COMP 15
BH25/1.0	✓			✓									1		HOLD
BH26/0.1	✓			✓									1		COMP 7
BH26/0.5	✓			✓									1		COMP 15
BH26/1.0	✓			✓									1		HOLD
BH27/0.1	✓			✓									1		COMP 7
BH27/0.5	✓			✓									1		COMP 15
BH27/1.0	✓			✓									1		HOLD
BH28/0.1	✓			✓									1		COMP 8
BH28/0.5	✓			✓									1		COMP 16
BH28/1.0	✓			✓									1		HOLD
BH29/0.1	✓			✓									1		COMP 8
BH29/0.5	✓			✓									1		COMP 16
BH29/1.0	✓			✓									1		HOLD
BH30/0.1	✓			✓					✓	✓			1		
BH30/0.5	✓			✓									1		HOLD
BH30/1.0	✓			✓									1		HOLD
BH31/0.1	✓			✓									1		COMP 5
BH31/0.5	✓			✓									1		COMP 13
BH31/1.0	✓			✓									1		HOLD
BH32/0.1	✓			✓									1		COMP 4
BH32/0.5	✓			✓									1		COMP 12
BH32/1.0	✓			✓									1		HOLD
TOTAL:	24			24					2	1	1	1	24		

DISPATCHED BY: (sign) (DATE/TIME)

△

COURIERED BY: (sign) (DATE/TIME) 1/10

12:55

■ RECEIVED BY: (sign) (DATE/TIME) 1/10

Andrew

Report # 234699

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: ~~24 HRS~~ ~~48 HRS~~ ~~5-4 DAY~~ (NORMAL)

REMARKS: Please email COC upon receipt of samples as confirmation for our records.

Please email results to: ~~cellis@atmaenvironmental.com~~ ~~tclarke@atmaenvironmental.com~~ ~~gborg@atmaenvironmental.com~~ (trobson@atmaenvironmental.com) ~~rmcphillips@atmaenvironmental.com~~

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory

Chain of Custody Record

Atma Environmental

(modified after US EPA chain of custody form)

Sheet 3 of 6

PROJECT: Clayton West

Sampler's Signature: △

Sampler's Name: △ TIM ROBSON

Site No: 589

DATE: 1/10/08

Time: 9 am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK	ANALYSIS FOR: EPA Screen	PAH's	TRH's	HM Screen	Sulphate	pH					NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
BH17/0.1	✓			✓													1		COMP 6
BH17/0.5	✓			✓													1		COMP 14
BH17/1.0	✓			✓													1		HOLD
BH18/0.1	✓			✓													1		COMP 6
BH18/0.5	✓			✓													1		COMP 14
BH18/1.0	✓			✓													1		HOLD
BH19/0.1	✓			✓													1		COMP 6
BH19/0.5	✓			✓													1		COMP 14
BH19/1.0	✓			✓													1		HOLD
BH20/0.1	✓			✓													1		COMP 6
BH20/0.5	✓			✓													1		COMP 14
BH20/1.0	✓			✓													1		HOLD
BH21/0.1	✓			✓													1		HOLD
BH21/0.5	✓			✓													1		HOLD
BH21/1.0	✓			✓													1		HOLD
BH22/0.1	✓			✓					✓		✓	✓					1		COMP 8
BH22/0.5	✓			✓													1		COMP 16
BH22/1.0	✓			✓													1		HOLD
BH23/0.1	✓			✓													1		COMP 8
BH23/0.5	✓			✓													1		COMP 16
BH23/1.0	✓			✓													1		HOLD
BH24/0.1	✓			✓													1		COMP 7
BH24/0.5	✓			✓													1		COMP 15
BH24/1.0	✓			✓													1		HOLD
TOTAL:	24			24					1		1	1							

DISPATCHED BY: (sign) △ (DATE/TIME)

COURIERED BY: (sign) (DATE/TIME) 1/10 12.55

☑ RECEIVED BY: (sign) Andrews (DATE/TIME) 1/10

Report # 234699

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: 24 HRS 48 HRS 3-4 DAY NORMAL

REMARKS: Please email COC upon reciept of samples as confirmation for our records.

Please email results to: cellis@atmaenvironmental.com, frobson@atmaenvironmental.com, fclarke@atmaenvironmental.com, rmcphillips@atmaenvironmental.com, gberry@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ☑ Must be completed with date and time by laboratory.

Chain of Custody Record

(modified after US EPA chain of custody form)

Sheet 2 of 6

Atma *Environmental*

PROJECT: Clayton West

Sampler's Signature: △

Sampler's Name: △ TIM ROBSON

Site No: 589 DATE: 1/10/08 Time: 9am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK /	ANALYSIS FOR: EPA Screen	PAH's	✓ TRH's	HM Screen	Sulphate	pH					NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
BH9/0·1	✓			✓					✓								1		COMP1
BH9/0·5	✓			✓													1		COMP9
BH9/1·0	✓			✓													1		HOLD
BH10/0·1	✓			✓													1		COMP1
BH10/0·5	✓			✓													1		COMP9
BH10/1·0	✓			✓													1		HOLD
BH11/0·1	✓			✓													1		COMP5
BH11/0·5	✓			✓													1		COMP13
BH11/1·0	✓			✓													1		HOLD
BH12/0·1	✓			✓													1		COMP5
BH12/0·5	✓			✓													1		COMP13
BH12/1·0	✓			✓													1		HOLD
BH13/0·1	✓			✓							✓	✓					1		COMP4
BH13/0·5	✓			✓													1		COMP12
BH13/1·0	✓			✓													1		HOLD
BH14/0·1	✓			✓													1		COMP4
BH16/0·5	✓			✓													1		COMP12
BH16/1·0	✓			✓													1		HOLD
BH15/0·1	✓			✓													1		COMP3
BH15/0·5	✓			✓													1		COMP11
BH15/1·0	✓			✓													1		HOLD
BH16/0·1	✓			✓													1		COMP3
BH16/0·5	✓			✓													1		COMP11
BH16/1·0	✓			✓													1		HOLD
TOTAL:	24			24					1		1	1					25		

DISPATCHED BY: (sign) △ (DATE/TIME)

COURIERED BY: (sign) (DATE/TIME) 1/10 12:55

■ RECEIVED BY: (sign) Andrew (DATE/TIME) 1/10

Report # 234699

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: 24 HRS 48 HRS 3-4 DAY NORMAL

REMARKS: Please email COC upon reciept of samples as confirmation for our records.

Please email results to: ~~cellis@atmaenvironmental.com~~ ~~fclarke@atmaenvironmental.com~~ ~~gberry@atmaenvironmental.com~~ trobson@atmaenvironmental.com rmcphillips@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

Chain of Custody Record

Atma Environmental

(modified after US EPA chain of custody form)

Sheet 1 of 6

PROJECT: Clayton West

Sampler's Signature: △

Sampler's Name: △ TIM ROBSON

Site No: 589 DATE: 1/10/08 Time: 9 am

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK /	ANALYSIS FOR: EPA Screen	PAH's	TRH's	HM Screen	Sulphate	pH					NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
BH1/0.1	✓			✓													1		COMP1
BH1/0.5	✓			✓													1		COMP9
BH1/1.0	✓			✓													1		HOLD
BH2/0.1	✓			✓													1		COMP1
BH2/0.5	✓			✓													1		COMP9
BH2/1.0	✓			✓													1		HOLD
BH3/0.1	✓			✓													1		COMP2
BH3/0.5	✓			✓													1		COMP10
BH3/1.0	✓			✓													1		HOLD
BH6/0.1	✓			✓													1		COMP2
BH6/0.5	✓			✓													1		COMP10
BH6/1.0	✓			✓													1	"	HOLD
BH5/0.1	✓			✓													1		COMP3
BH5/0.5	✓			✓													1		COMP11
BH5/1.0	✓			✓													1		HOLD
BH6/0.1	✓			✓					✓								1		COMP3
BH6/0.5	✓			✓													1		COMP11
BH6/1.0	✓			✓													1		HOLD
BH7/0.1	✓			✓													1		COMP2
BH7/0.5	✓			✓													1		COMP10
BH7/1.0	✓			✓													1		HOLD
BH8/0.1	✓			✓													1		COMP2
BH8/0.5	✓			✓													1		COMP10
BH8/1.0	✓			✓													1		HOLD
TOTAL:	24			24					1								24		

DISPATCHED BY: (sign) △ (DATE/TIME)

COURIERED BY: (sign) (DATE/TIME)

■ RECEIVED BY: (sign) MGT (DATE/TIME) 11/10/08 1pm

Andrew Rexart 2347699

LAB NAME: MGT

INITIAL RESULTS REQUESTED WITHIN: 24 HRS 48 HRS 3-4 DAY (NORMAL)

REMARKS: Please email COC upon reciept of samples as confirmation for our records.

Please email results to: cellis@atmaenvironmental.com, fclarke@atmaenvironmental.com, gberry@atmaenvironmental.com, trobson@atmaenvironmental.com, rmcphillips@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

APPENDIX D

Chain of Custody & Laboratory Reports

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH31

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed soil				
	SILTY SAND - Dark brown, fine grained, loose	DP	0.1		minor brick, basalt gravel
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH32

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, fine grained, loose	DP	0.1		minor porcelain
0.50		DP	0.5		minor glass
	SAND - Grey				
1.00	EOH @ 1.0m	DP	1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)
Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH29
Diameter: 90 mm
Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50			0.5		
	SAND - Grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH30
Diameter: 90 mm
Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		DUPE & SPLITE taken
0.50	SANDY SILT - Dark brown, fine grained, loose	DP	0.5		
	SILTY SAND - Dark brown/grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH27

Diameter: 90 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH28

Diameter: 90 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown/black, fine grained	DP			medium density
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH25

Diameter: 70mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed soil				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		DUPD & SPLITD taken
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
1.00	SAND - Grey, fine grained, loose	DP			
	EOH @ 1.0m				

Remarks:

BOREHOLE/TESTPIT No.: BH26

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
1.00	SAND - Grey, fine grained, loose	DP			
	EOH @ 0.6m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH23

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	DISTURBED - Silty sand, dark brown	DP			low OM, loose, minor clay
	Silty SAND - Dark brown, low organic matter, fine grained		0.1		
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown/orange, fine grained, medium density	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH24

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	Silty SAND - Dark brown/grey, low organic matter, fine grained, loose	DP	0.1		
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown/black/orange, fine grained	DP			loose
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH21

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
	Grass				
0.00	SILTY SAND - Dark brown, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH22

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00					
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
	SILTY SAND - Dark brown/grey, fine grained, loose				
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Orange, fine grained, loose				
1.00	EOH @ 1.0m	DP	1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH19

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		DUPC & SPLITC taken
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
1.00	**EOH @ 1.0m**		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH20

Diameter: 70 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter,	DP			fine grained, loose
	SILTY SAND - Dark brown, fine grained, loose	DP	0.1		
0.50			0.5		
1.00	**EOH @ 1.0m**		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH17

Diameter: 90 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Bark brown, medium organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grain, loose				
1.00	EOH @ 1.0		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH18

Diameter: 90 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, medium organic matter, fine grained, loose	DP	0.1		
0.50		DP	0.5		
	SILTY SAND - Dark brown/grey, fine grained, loose				
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589) **Engineer:** Tim Robson

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BOREHOLE/TESTPIT No.: BH15

Diameter: 700 mm **Method:** Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Tanbark				
	FILL - Silty sand, Dark brown, low organic matter, fine grained, loose	DP	0.1		minor tanbark, basalt gravel DUPB & SPLITB taken
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP			
0.50	SILTY SAND - Dark brown/grey, low organic matter, fine grained, loose		0.5		
1.00	SAND - grey, fine grained, loose	DP			
	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH16

Diameter: 700 mm **Method:** Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grain, loose	DP	0.5		
	SAND - Grey, fine grain, loose	DP	1.0		
1.00	**EOH @ 1.0m**				

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)
Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH13
Diameter: 900 mm
Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, low organic matter, fine grained, loose	DP	0.1		minor brick, glass
0.50	SILTY SAND - Dark brown, fine grained, loose				
	SAND - Grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH14
Diameter: 900 mm
Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - dark brown, fine grained, loose	DP	0.5		
	SAND - Dark brown, fine grain, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH11

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, low organic matter, fine grained, loose	DP	0.1		
	DISTURBED - Sand, grey, fine grained, loose				very minor concrete, sandstone gravel
0.50			0.5		
	SAND - Grey, fine grained, loose				
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH12

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50			0.5		
	SAND - Grey, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH9

Diameter: 100 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Gravel (150mm)				
	DISTURBED - Silty sand, dark brown, low OM	DP			fine grained, loose
	SILTY SAND - Dark Brown, low organic matter, fine grain, loose	DP	0.1		
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH10

Diameter: 100 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	FILL - Silty sand, dark brown, low organic matter, fine grained, loose	DP	0.1		Small clay content, minor brick, basalt gravel
0.50	SILTY SAND - Dark brown, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose				
1.00	EOH @ 1.0m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - molst; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH7

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, medium organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose				
1.00	EOH @ 1.0m	DP	1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH8

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	SILTY SAND - Dark brown, medium organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - Dark brown, medium organic matter, fine grained, loose	DP	0.5		
1.00	EOH @ 1.0m	DP	1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH5

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, medium organic matter, fine grained, loose	DP	0.1		minor basalt gravel DUPA & SPLITA taken
	SILTY SAND - Dark brown, medium organic matter, fine grain, loose	DP			
0.50	SILTY SAND - Dark brown, low organic matter, fine grain	DP	0.5		
	SAND - Grey, fine grained, loose				
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH6

Diameter: 700 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Disturbed Soil				
	DISTURBED - Silty sand, dark brown, medium organic matter, fine grain, loose	DP	0.1		
	SILTY SAND - dark brown/grey, fine grain, loose	DP			
0.50			0.5		
	SANDY SILT - Dark brown, fine grain, loose				Orange colouring throughout
1.00	EOH @ 0.6m		1.0		

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)

Engineer: Tim Robson

Date: 30/09/08

BOREHOLE/TESTPIT No.: BH3

Diameter: 90 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - dark brown, low organic matter, fine grained, loose	DP	0.1		
0.50	SILTY SAND - dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose	DP			
			1.0		
1.00	EOH @ 1.0m				

Remarks:

BOREHOLE/TESTPIT No.: BH4

Diameter: 100 mm

Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	SILTY SAND - Dark brown, low organic matter, fine grain, loose	DP	0.1		
0.50	SILTY SAND - Dark brown/grey, fine grained, loose	DP	0.5		
	SAND - Grey, fine grained, loose		1.0		
1.00	EOH @ 1.0m				

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

Soil Borehole Log

Atma Environmental

Project : Clayton West (#589)
Engineer: Tim Robson

Date: 30/09/08

BOREHOLE No.: BH1
Diameter: 90 mm
Method: Solid Stem Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Gravel				
	DISTURBED - Sandy Silt, dark brown, medium organic matter, fine grained, loose	DP	0.1		minor basalt, basalt gravel NATURAL at 0.1 m, grey sand
	SILTY SAND - Dark brown, no organic matter, fine grained, loose	DP			
0.50	SAND - Grey, fine grained, loose	DP	0.5		
	SANDY SILT - Dark brown/orange, fine grained, loose	DP			
1.00	EOH @ 1.0m		1.0		

Remarks:

BOREHOLE/TESTPIT No.: BH2
Diameter: 70 mm
Method: Hand Auger

Depth (m)	Soil Description	Water	Samples Collected	OVA Reading	Additional Observations
0.00	Grass				
	Silty SAND - Dark brown, medium organic matter, fine grained, loose	DP	0.1		
0.50	Silty SAND - Dark brown/grey, medium organic matter, fine grained, loose	DP	0.5		
1.00	EOH @ 1.0m				

Remarks:

WATER CONTENT: DR - dry; DP - damp; M - moist; S - saturated

APPENDIX C

Soil Testpit Logs

1. Remove soil adhering to the augers, drill stem and other equipment by scraping, brushing or wiping.

2. Thoroughly pressure wash equipment with tap water and phosphate free detergent using a steam cleaner.

3. Thoroughly rinse equipment with distilled water using a sprayer, collecting the rinsate blank if required and preserve it in accordance with AS2031.

4. Keep the equipment clean between uses by wrapping it in protective sheeting (e.g. plastic, aluminum foil, etc.).

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Equipment Decontamination

[E006]

For both manual and large equipment decontamination work it is preferable to conduct the equipment decontamination activities in a dedicated area located away from sampling activities thereby removing a possible source of cross contamination.

At a minimum, collect one Quality Assurance Rinsate Water (RW) blank per each day of fieldwork (see 'Quality Assurance Samples' Procedure).

1. Manual Sampling Equipment

In general, always plan the sampling program so that bores having the HIGHEST level of anticipated CONTAMINATION are sampled LAST and the least contaminated are sampled first.

The procedure for decontamination of manual sampling equipment (e.g. hand augers, bailers, split spoons) used to collect INORGANIC samples is as follows:

1. Remove soil adhering to the sampling equipment by scraping, brushing or wiping. A disposable towel may be used for this purpose. Previously used rags may introduce contaminants and should not be used.

2. Wash thoroughly in a bucket with phosphate-free detergent (e.g. NapiSan) and tap water using dedicated brushes or disposable towels. Wipe clean.

3. Shake off excess water and wash again in a second bucket containing only tap water. Wipe clean.

4. Shake off excess water and liberally rinse with deionised water from a squirt bottle.

5. If sampling for ORGANIC parameters, further rinse the equipment with a 1:1 mixture of laboratory grade hexane & acetone.

6. Allow equipment to air dry prior to use on a clean sheet of paper or suspended above ground.

Refresh the wash water every 50 pieces cleaned or more often, depending on field conditions.

2. Large Equipment

The procedure for decontaminating large equipment is as follows.

a clean sample container. Avoid using an intermediate container to collect the rinsate sample (e.g. a bucket).

c) FREQUENCY. Collect one quality assurance rinsate blank per day or for every 50 pieces of equipment washed (i.e. soil samples collected) with minimum of 1 per day, where manual sampling equipment is used (e.g. hand augers, spatulas etc). If the rinsate blank is to be collected for inorganic analysis, preserve this in accordance with AS 2031. If the rinsate blank is to be collected for organic analysis, use a glass or PTFE container, preserve this in accordance with AS 2031 and ensure there is a tight seal to minimize loss of liquid.

d) Enter the rinsate sample number on the Sample Master List as DECON A, DECON B, etc. followed by a dash and then the date, e.g. DECON A-060606, and label the sample accordingly.

3. Collection of Field Blank Samples

Field Blanks are for the purpose of providing a control against contamination potentially introduced to samples during field works. The procedure for collecting Field Blank samples is as follows:

a) A fresh, unused sample jar is to be opened and exposed to the environmental conditions at the sampling locations for a 20 minute period, during the fieldwork, once a day.

b) After 20 minutes, the jar should be filled with deionised water, sealed, labelled as FIELD followed by a dash and then the date written as DDMMYY (e.g. FIELD-230206) and entered on the Atma Environmental Sample Master List and Chain of Custody form, before being sent along with the soil samples to the analytical laboratory for testing.

4. Collection of Trip Blanks

A Trip Blank is for the purpose of providing a control sample against contamination potentially introduced during transport of samples from the field to the laboratory.

a) Trip jars are provided from MGT, already filled with de-ionised water.

b) This container is checked to ensure it is sealed and is taken everywhere that samples are collected.

c) The Trip Blank is entered into the Sample Master List below the primary sample Ids and onto the Chain of Custody form, it is labelled TRIP, followed by the date written as DDMMYY (e.g, TRIP-150106). If sampling occurs over several days, sequential numbering should be used for each day.

Quality Assurance Samples

[E005]

1. Collection of Split and Duplicate Samples

The procedure for collection of duplication/split samples is as follows:

a) A duplicate sample is collected along with the first primary sample collected so that there is at least one QA sample for every sampling program. Duplicate samples are then collected every +/- 20 samples thereafter.

b) A split sample is collected about the 10th primary sample and every +/- 20 samples thereafter.

c) Split/duplicate samples should be taken from the same depth interval in a single action. The removed soil is then placed within a clean stainless steel pan where it is mixed thoroughly by hand (wearing latex glove) or clean spatula to homogenise the soil, after which it is then divided into two jars.

d) Duplicate samples are labelled in such a manner to disguise the sample from its replicate or original (primary) sample in a blind test. The convention used by Atma Environmental is DUP A, DUP B, etc. sequentially in the order they are sampled, then a dash and the date written as DDMMYY e.g. DUP A-230106. Duplicate samples are then submitted to the same laboratory. Duplicate sample numbers are entered alongside the primary sample ID on the Atma Sample Master List.

e) Collection of 'Split' samples follow the same procedure as 'Duplicates' but are submitted to a secondary laboratory to check on the proficiency of the primary lab. Conventionally, split sample IDs are prefixed by the word "SPLIT", followed by a sequential letter, a dash, and then the date written as DDMMYY e.g. SPLIT C-010106. Split samples should be tested by the secondary laboratory for the same parameter(s) as the primary sample using the same analytical methods as the primary laboratory. Split sample numbers are entered alongside the primary sample ID on the Atma Sample Master List.

2. Collection of Rinsate Blanks

The procedures for collection of rinsate samples are as follows:

a) Decontaminate equipment used for sampling in accordance with decontamination procedures.

b) Using laboratory grade deionised water pour an amount of rinsate water over the part of the decontaminated equipment contacting the soil. Collect the rinsate water directly into

14. Transport iced samples via courier with Chain of Custody to a National Association of Testing Authorities (NATA) accredited environmental laboratory.

15. Store samples not sent to laboratory for one month after issue of report.

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5. Advance sampler to desired depth. Put on disposable latex sampling gloves prior to sampling; collect samples. Samples are removed from the soil by auger and placed into 150 ml (minimum) clean single use glass jars using latex sampling gloves after trimming the sample of any extraneous borehole sidewall material with a decontaminated knife. Sample containers must be completely filled in such a way as to minimise air pockets within the jar. The sample container is then capped with a lined lid. On specific projects, solvent and acid washed jars may be more appropriate for the application.

6. Label sample container using waterproof pen. Labels to include:
   (a) Sample identification number (i.e. borehole number and sample depth)
   (b) Project reference or job number
   (c) Date and time of sample collection

7. Check to make sure that the sample is tightly sealed and place in cooler immediately.

8. Log the sample unique identification number onto the Sample Master List AS THEY ARE COLLECTED. Note any corresponding replicate samples collected on the Sample Master List opposite the entry for the primary sample. In this fashion any suspected incidence of cross contamination may be tracked down by looking at the order in which samples are collected.

9. Log the soil retrieved from the bore on the Field Bore Log sheet or on the Monitoring Well Log. Log sheet information is to include:
   (a) Soil/rock type,
   (b) Colour (primary and secondary),
   (c) Grainsize, sorting, angularity, inclusions,
   (d) Moisture conditions, and
   (e) Staining and odour.

10. Reiterate steps '3' to '9' until sampling program is completed.

11. Fill out a Chain of Custody form for delivery of samples to the laboratory.

12. If the samples are to be tested for organic vapour, a bag of soil should be collected and sealed at the same time that the sample jar is filled. At the end of the day these bags of soil are tested using an Organic Vapour Analyser or OVA. The AEPL OVA is an RKI Eagle Portable Gas Detector which uses an electrical resistance sensor to detect hydrocarbons. Turn the OVA on using the Power/Enter key. The instrument will go through its self-check and be ready to use in about 3-5 minutes. Once ready hold down the AIR key to obtain the background air reading. Then use the LEL/PPM key to set to PPM or "parts per million". Attach the sample line and probe to the instrument. Poke the probe into the soil bag and leave it there for several seconds or until the reading stabilises. Record the value on the Sample Master List.
    NOTE: If a MiniRAE is hired for the organic vapour analysis, follow the instructions provided with the instrument.

13. Store samples under refrigeration or on ice after sampling and prior to transportation.

Soil Sampling
[E002]

Soil assessments are required to provide the necessary information to determine the environment condition of soils within a site or the effects of any contaminated soil on a proposal. Prior to the commencement of soil sampling a Sampling and Analysis Plan should be devised (See Procedure AEPLQP\PM012) containing the specifics of the project objectives.

1. Sampling Equipment

Environmental sampling of soil and groundwater should consider the type of contaminant and the data quality objectives of the program, including the depth at which samples are required. Soil samples are commonly obtained from: surface sampling, test pits, or boreholes. Accordingly, the type of equipment required to obtain samples shall vary and the choice of method requires consideration of -

- Ground conditions;
- Depth required;
- Nature of the contamination;
- Ease of access; and
- Acceptable site disturbance.

Hand augurs may be used for collection of relatively shallow soil samples. Where volatile compounds are being sampled use of a push tube sampler should be considered. Drill rigs with a wide variety of capabilities are also available. Ideally, equipment for undisturbed sampling ought to be utilised. Where use of an excavator is employed, sample collection should commence from the deepest portion of the trench to avoid cross-contamination and samples obtained directly from the walls and base.

2. Sampling Procedure

1. Discuss sampling locations with site personnel to clear any underground utilities, use cable locating service when appropriate.

2. Determine appropriate site safety conditions (water hazards, traffic zones, etc.).

3. Take two Field Blanks per day of fieldwork, as specified in the Quality Assurance sampling procedure.

4. Decontaminate and rinse all sampling equipment prior to commencing and between sampling locations to prevent cross contamination.

APPENDIX B

AEPL Investigation Procedures

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
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Email: mgt@mgtenv.com.au

Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID	RPD	SPIKE	Method blank
	Lab Number	Batch	Batch	Batch
	QA Description		Spike % Recovery	
	Matrix	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery	mg/L
Total Recoverable Hydrocarbons				
TRH C6-C9 Fraction by GC		< 1	96	< 0.02
TRH C10-C14 Fraction by GC		< 1	95	< 0.05
TRH C15-C28 Fraction by GC		16	-	< 0.1
TRH C29-C36 Fraction by GC		< 1	-	< 0.1

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Atma Environmental
Unit 6
83 Dover St

Richmond 3121

Client Sample	SV2	SV2	RPD	SPIKE	Method blank
Lab Number	08-MY10374	08-MY10374	08-MY10374	08-MY10374	Batch
QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	
Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type / Units			% RPD	% Recovery	mg/L
Halogenated Volatile Organics					
Methylene chloride	-	-	< 1	-	-
Tetrachloroethene	-	-	< 1	-	-
trans-1.2-Dichloroethene	-	-	< 1	-	-
trans-1.3-Dichloropropene	-	-	< 1	-	-
Trichloroethene	-	-	< 1	116	-
Trichlorofluoromethane	-	-	< 1	-	-
Vinyl chloride	-	-	< 1	-	-
Heavy Metals					
Mercury	< 0.1	< 0.1	< 1	101	< 0.005
Molybdenum	-	-	< 1	91	< 0.25
Selenium	-	-	< 1	82	< 0.05
Silver	-	-	< 1	-	< 0.2
Tin	-	-	< 1	86	< 0.25
Volatile Organics					

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Atma Environmental
Unit 6
83 Dover St
Richmond 3121

	Client Sample	RPD	SPIKE
	Lab Number	Batch	Batch
	QA Description		Spike % Recovery
	Matrix	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery
Heavy Metals (7)			
Zinc		-	-
Halogenated Volatile Organics			
1,1-Dichloroethane		< 1	87
1,1-Dichloroethene		< 1	79
1,1,1-Trichloroethane		< 1	106
1,1,1,2-Tetrachloroethane		< 1	-
1,1,2-Trichloroethane		< 1	-
1,1,2,2-Tetrachloroethane		< 1	-
1,2-Dibromoethane		< 1	-
1,2-Dichlorobenzene		< 1	117
1,2-Dichloroethane		< 1	85
1,2-Dichloropropane		< 1	-
1,2,3-Trichloropropane		< 1	-
1,3-Dichlorobenzene		< 1	-
1,3-Dichloropropane		< 1	-
1,4-Dichlorobenzene		< 1	-
Bromodichloromethane		< 1	-
Bromoform		< 1	-
Bromomethane		< 1	-
Carbon Tetrachloride		< 1	94
Chlorobenzene		< 1	-
Chloroform		< 1	-
Chloromethane		< 1	-
cis-1,2-Dichloroethene		< 1	-
cis-1,3-Dichloropropene		< 1	-
Dibromochloromethane		< 1	-
Dibromomethane		< 1	-
Iodomethane		< 1	-

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Atma Environmental
Unit 6
33 Dover St

Richmond 3121

	Client Sample	RPD	SPIKE	Method blank
	Lab Number	Batch	Batch	Batch
	QA Description		Spike % Recovery	
	Matrix	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery	mg/L
Chlorinated Hydrocarbons				
1,3,5-Trichlorobenzene		< 1	81	< 0.005
1,4-Dichlorobenzene		< 1	77	< 0.02
Benzal chloride		< 1	78	< 0.005
Benzotrichloride		< 1	89	< 0.005
Benzyl chloride		< 1	-	< 0.02
Hexachlorobenzene		< 1	107	< 0.005
Hexachlorobutadiene		< 1	85	< 0.005
Hexachlorocyclopentadiene		< 1	100	< 0.005
Hexachloroethane		< 1	82	< 0.005
Pentachlorobenzene		< 1	88	< 0.005
Polychlorinated Biphenyls				
Aroclor-1016		< 1	-	< 0.01
Aroclor-1221		< 1	-	< 0.01
Aroclor-1232		< 1	-	< 0.01
Aroclor-1242		< 1	-	< 0.01
Aroclor-1248		< 1	-	< 0.01
Aroclor-1254		< 1	-	< 0.01
Aroclor-1260		< 1	105	< 0.01
Total PCB		< 1	-	< 0.1
Dibutylchlorendate (surr.)		-	86	110
Tetrachloro-m-xylene (surr.)		-	84	82
Heavy Metals (7)				
Arsenic		11	91	< 0.05
Cadmium		< 1	89	< 0.02
Chromium		8.1	83	< 0.2
Copper		18	82	< 0.2
Lead		2.1	-	< 0.05
Nickel		9.9	85	< 0.2

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID	RPD	SPIKE	Method blank
	Lab Number	Batch	Batch	Batch
	QA Description		Spike % Recovery	
	Matrix	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery	mg/L
Organochlorine Pesticides				
4,4'-DDD		< 1	108	< 0.005
4,4'-DDE		< 1	112	< 0.005
4,4'-DDT		< 1	91	< 0.005
a-BHC		< 1	106	< 0.005
Aldrin		< 1	123	< 0.005
b-BHC		< 1	123	< 0.005
Chlordane		< 1	-	< 0.01
d-BHC		< 1	117	< 0.005
Dieldrin		< 1	115	< 0.005
Endosulfan I		< 1	114	< 0.005
Endosulfan II		< 1	102	< 0.005
Endosulfan sulphate		< 1	120	< 0.005
Endrin		< 1	129	< 0.005
Endrin aldehyde		< 1	124	< 0.005
Endrin ketone		< 1	112	< 0.005
g-BHC (Lindane)		< 1	111	< 0.005
Heptachlor		< 1	122	< 0.005
Heptachlor epoxide		< 1	118	< 0.005
Methoxychlor		< 1	99	< 0.005
Toxophene		< 1	-	< 0.01
Chlorinated Hydrocarbons				
1,2-Dichlorobenzene		< 1	76	< 0.02
1,2,3-Trichlorobenzene		< 1	71	< 0.005
1,2,3,4-Tetrachlorobenzene		< 1	82	< 0.005
1,2,3,5-Tetrachlorobenzene		< 1	-	< 0.005
1,2,4-Trichlorobenzene		< 1	-	< 0.005
1,2,4,5-Tetrachlorobenzene		< 1	70	< 0.005
1,3-Dichlorobenzene		< 1	86	< 0.02

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Atma Environmental	Client Sample ID	SV1	SV1	RPD	SPIKE	Method blank
Unit 6	Lab Number	08-MY10373	08-MY10373	08-MY10373	08-MY10373	Batch
83 Dover St	QA Description		Duplicate	Duplicate % RPD	Spike % Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units			% RPD	% Recovery	mg/L
Monocyclic Aromatic Hydrocarbons						
Benzene		< 0.05	< 0.05	< 1	101	< 0.005
Toluene		< 0.05	< 0.05	< 1	97	< 0.005
Ethylbenzene		< 0.05	< 0.05	< 1	111	< 0.005
Xylenes(ortho,meta and para)		< 0.05	< 0.05	< 1	113	< 0.005
Fluorobenzene (surr.)		99	97	-	119	57

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Alma Environmental
Unit 6
83 Dover St

Richmond 3121

	Client Sample	RPD	SPIKE	Method blank
	Lab Number	Batch	Batch	Batch
	QA Description		Spike % Recovery	
	Matrix	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery	mg/L
Phenols				
4-Chloro-3-methylphenol		< 1	111	< 0.01
Pentachlorophenol		< 1	107	< 0.1
Phenol		< 1	124	< 0.01
Phenol-d6 (surr.)		-	80	75

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Atma Environmental	Client Sample ID	RPD	SPIKE	Method blank
Unit 6	Lab Number	Batch	Batch	Batch
63 Dover St	QA Description		Spike % Recovery	
Richmond 3121	Matrix	Soil	Soil	Soil
	Sample Date	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	Units		% Recovery	mg/L
Polycyclic Aromatic Hydrocarbons				
Acenaphthene		< 1	128	< 0.02
Acenaphthylene		< 1	108	< 0.02
Anthracene		< 1	124	< 0.02
Benz(a)anthracene		4.4	97	< 0.02
Benzo(a)pyrene		19	94	< 0.02
Benzo(b)fluoranthene		20	92	< 0.02
Benzo(g.h.i)perylene		< 1	118	< 0.02
Benzo(k)fluoranthene		< 1	106	< 0.02
Chrysene		13	102	< 0.02
Dibenz(a.h)anthracene		< 1	125	< 0.02
Fluoranthene		20	81	< 0.02
Fluorene		< 1	124	< 0.02
Indeno(1.2.3-cd)pyrene		< 1	121	< 0.02
Naphthalene		< 1	97	< 0.02
Phenanthrene		< 1	117	< 0.02
Pyrene		17	80	< 0.02
Total PAH		< 1	-	< 0.02
Chrysene-d12 (surr.)		-	88	114
2-Fluorobiphenyl (surr.)		-	53	80
Phenols				
2-Chlorophenol		< 1	118	< 0.01
2-Methylphenol (o-Cresol)		< 1	115	< 0.01
2-Nitrophenol		< 1	96	< 0.05
2.4-Dichlorophenol		< 1	111	< 0.01
2.4-Dimethylphenol		< 1	127	< 0.01
2.4.6-Trichlorophenol		< 1	110	< 0.01
2.6-Dichlorophenol		< 1	124	< 0.01
3&4-Methylphenol (m&p-Cresol)		< 1	125	< 0.02

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		SV3	SV4	SV5	SV6
	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Nickel	5	mg/kg	-	42	-	-
Zinc	5	mg/kg	-	16	-	-
Heavy Metals						
Mercury	0.1	mg/kg	-	< 0.1	-	-
Molybdenum	10	mg/kg	-	< 10	-	-
Selenium	2	mg/kg	-	< 2	-	-
Silver	5	mg/kg	-	< 5	-	-
Tin	10	mg/kg	-	< 10		

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Atma Environmental	Client Sample ID		SV3	SV4	SV5	SV6
Unit 6	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
Chlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Chloroform	0.05	mg/kg	-	< 0.05	-	-
Chloromethane	0.05	mg/kg	-	< 0.05	-	-
cis-1,2-Dichloroethene	0.05	mg/kg	-	< 0.05	-	-
cis-1,3-Dichloropropene	0.05	mg/kg	-	< 0.05	-	-
Dibromochloromethane	0.05	mg/kg	-	< 0.05	-	-
Dibromomethane	0.05	mg/kg	-	< 0.05	-	-
Iodomethane	0.05	mg/kg	-	< 0.05	-	-
Methylene chloride	0.05	mg/kg	-	< 0.05	-	-
Tetrachloroethene	0.05	mg/kg	-	< 0.05	-	-
trans-1,2-Dichloroethene	0.05	mg/kg	-	< 0.05	-	-
trans-1,3-Dichloropropene	0.05	mg/kg	-	< 0.05	-	-
Trichloroethene	0.05	mg/kg	-	< 0.05	-	-
Trichlorofluoromethane	0.05	mg/kg	-	< 0.05	-	-
Vinyl chloride	0.05	mg/kg	-	< 0.05	-	-
Fluorobenzene (surr.)	1	%	-	99	-	-
Volatile Organics						
Styrene	0.05	mg/kg	-	< 0.05	-	-
% Moisture	0.1	%	4.4	5.7	8.2	7.7
Chromium (hexavalent)	1	mg/kg	-	< 1	-	-
Cyanide (total)	5	mg/kg	-	< 5	-	-
Fluoride	100	mg/kg	-	< 100		
Heavy Metals (7)						
Arsenic	2	mg/kg	-	< 2	-	-
Cadmium	0.5	mg/kg	-	< 0.5	-	-
Chromium	5	mg/kg	-	5.6	-	-
Copper	5	mg/kg	-	14	-	-
Lead	5	mg/kg	-	< 5	-	-

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		SV3	SV4	SV5	SV6
	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
2-Nitrophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.1	mg/kg	-	< 0.1	-	-
2.4-Dimethylphenol	0.1	mg/kg	-	< 0.1	-	-
2.4.6-Trichlorophenol	0.1	mg/kg	-	< 0.1	-	-
2.6-Dichlorophenol	0.1	mg/kg	-	< 0.1	-	-
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	-	< 0.2	-	-
4-Chloro-3-methylphenol	0.1	mg/kg	-	< 0.1	-	-
Pentachlorophenol	0.5	mg/kg	-	< 0.5	-	-
Phenol	0.1	mg/kg	-	< 0.1	-	-
Phenol-d6 (surr.)	1	%	-	82	-	-
Halogenated Volatile Organics						
1.1-Dichloroethane	0.05	mg/kg	-	< 0.05	-	-
1.1-Dichloroethene	0.05	mg/kg	-	< 0.05	-	-
1.1.1-Trichloroethane	0.05	mg/kg	-	< 0.05	-	-
1.1.1.2-Tetrachloroethane	0.05	mg/kg	-	< 0.05	-	-
1.1.2-Trichloroethane	0.05	mg/kg	-	< 0.05	-	-
1.1.2.2-Tetrachloroethane	0.05	mg/kg	-	< 0.05	-	-
1.2-Dibromoethane	0.05	mg/kg	-	< 0.05	-	-
1.2-Dichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.2-Dichloroethane	0.05	mg/kg	-	< 0.05	-	-
1.2-Dichloropropane	0.05	mg/kg	-	< 0.05	-	-
1.2.3-Trichloropropane	0.05	mg/kg	-	< 0.05	-	-
1.3-Dichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.3-Dichloropropane	0.05	mg/kg	-	< 0.05	-	-
1.4-Dichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Bromodichloromethane	0.05	mg/kg	-	< 0.05	-	-
Bromoform	0.05	mg/kg	-	< 0.05	-	-
Bromomethane	0.05	mg/kg	-	< 0.05	-	-
Carbon Tetrachloride	0.05	mg/kg	-	< 0.05	-	-

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Atma Environmental	Client Sample ID		SV3	SV4	SV5	SV6
Unit 6	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
1.2.4-Trichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.2.4.5-Tetrachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.3-Dichlorobenzene	0.2	mg/kg	-	< 0.2	-	-
1.3.5-Trichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.4-Dichlorobenzene	0.2	mg/kg	-	< 0.2	-	-
Benzal chloride	0.05	mg/kg	-	< 0.05	-	-
Benzotrichloride	0.05	mg/kg	-	< 0.05	-	-
Benzyl chloride	0.2	mg/kg	-	< 0.2	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobutadiene	0.05	mg/kg	-	< 0.05	-	-
Hexachlorocyclopentadiene	0.05	mg/kg	-	< 0.05	-	-
Hexachloroethane	0.05	mg/kg	-	< 0.05	-	-
Pentachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Dibutylchlorendate (surr.)	1	%	-	90	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	92	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	90	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	92	-	-
Phenols						
2-Chlorophenol	0.1	mg/kg	-	< 0.1	-	-
2-Methylphenol (o-Cresol)	0.1	mg/kg	-	< 0.1	-	-

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Email: mgt@mgtenv.com.au

Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		SV3	SV4	SV5	SV6
	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Organochlorine Pesticides						
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
Chlordane	0.1	mg/kg	-	< 0.1	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxophene	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	90	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	92	-	-
Chlorinated Hydrocarbons						
1.2-Dichlorobenzene	0.2	mg/kg	-	< 0.2	-	-
1.2.3-Trichlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.2.3.4-Tetrachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
1.2.3.5-Tetrachlorobenzene	0.05	mg/kg	-	< 0.05	-	-

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Atma Environmental	Client Sample ID		SV3	SV4	SV5	SV6
Unit 8	Lab Number		08-MY10375	08-MY10376	08-MY10377	08-MY10378
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
Monocyclic Aromatic Hydrocarbons						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Xylenes(ortho,meta and para)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Fluorobenzene (surr.)	1	%	65	99	102	75
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	-	< 0.1	-	-
Acenaphthylene	0.1	mg/kg	-	< 0.1	-	-
Anthracene	0.1	mg/kg	-	< 0.1	-	-
Benz(a)anthracene	0.1	mg/kg	-	< 0.1	-	-
Benzo(a)pyrene	0.1	mg/kg	-	< 0.1	-	-
Benzo(b)fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Benzo(g,h,i)perylene	0.1	mg/kg	-	< 0.1	-	-
Benzo(k)fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Chrysene	0.1	mg/kg	-	< 0.1	-	-
Dibenz(a,h)anthracene	0.1	mg/kg	-	< 0.1	-	-
Fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Fluorene	0.1	mg/kg	-	< 0.1	-	-
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	-	< 0.1	-	-
Naphthalene	0.1	mg/kg	-	< 0.1	-	-
Phenanthrene	0.1	mg/kg	-	< 0.1	-	-
Pyrene	0.1	mg/kg	-	< 0.1	-	-
Total PAH	0.1	mg/kg	-	< 0.1	-	-
Chrysene-d12 (surr.)	1	%	-	121	-	-
2-Fluorobiphenyl (surr.)	1	%	-	78	-	-

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV9	TV10	SV1	SV2
	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Nickel	5	mg/kg	-	-	-	< 5
Zinc	5	mg/kg	-	-	-	5.3
Heavy Metals						
Mercury	0.1	mg/kg	-	-	-	< 0.1
Molybdenum	10	mg/kg	-	-	-	< 10
Selenium	2	mg/kg	-	-	-	< 2
Silver	5	mg/kg	-	-	-	< 5
Tin	10	mg/kg	-	-	-	< 10

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Atma Environmental	Client Sample ID		TV9	TV10	SV1	SV2
Unit 6	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
Chlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Chloroform	0.05	mg/kg	-	-	-	< 0.05
Chloromethane	0.05	mg/kg	-	-	-	< 0.05
cis-1.2-Dichloroethene	0.05	mg/kg	-	-	-	< 0.05
cis-1.3-Dichloropropene	0.05	mg/kg	-	-	-	< 0.05
Dibromochloromethane	0.05	mg/kg	-	-	-	< 0.05
Dibromomethane	0.05	mg/kg	-	-	-	< 0.05
Iodomethane	0.05	mg/kg	-	-	-	< 0.05
Methylene chloride	0.05	mg/kg	-	-	-	< 0.05
Tetrachloroethene	0.05	mg/kg	-	-	-	< 0.05
trans-1.2-Dichloroethene	0.05	mg/kg	-	-	-	< 0.05
trans-1.3-Dichloropropene	0.05	mg/kg	-	-	-	< 0.05
Trichloroethene	0.05	mg/kg	-	-	-	< 0.05
Trichlorofluoromethane	0.05	mg/kg	-	-	-	< 0.05
Vinyl chloride	0.05	mg/kg	-	-	-	< 0.05
Fluorobenzene (surr.)	1	%	-	-	-	102
Volatile Organics						
Styrene	0.05	mg/kg	-	-	-	< 0.05
% Moisture	0.1	%	7.7	10	5.9	5.5
Chromium (hexavalent)	1	mg/kg	-	-	-	< 1
Cyanide (total)	5	mg/kg	-	-	-	< 5
Fluoride	100	mg/kg	-	-	-	< 100
Heavy Metals (7)						
Arsenic	2	mg/kg	-	-	-	< 2
Cadmium	0.5	mg/kg	-	-	-	< 0.5
Chromium	5	mg/kg	-	-	-	< 5
Copper	5	mg/kg	-	-	-	< 5
Lead	5	mg/kg	-	-	-	< 5

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV9	TV10	SV1	SV2
	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
2-Nitrophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.1	mg/kg	-	-	-	< 0.1
2.4-Dimethylphenol	0.1	mg/kg	-	-	-	< 0.1
2.4.6-Trichlorophenol	0.1	mg/kg	-	-	-	< 0.1
2.6-Dichlorophenol	0.1	mg/kg	-	-	-	< 0.1
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	-	-	-	< 0.2
4-Chloro-3-methylphenol	0.1	mg/kg	-	-	-	< 0.1
Pentachlorophenol	0.5	mg/kg	-	-	-	< 0.5
Phenol	0.1	mg/kg	-	-	-	< 0.1
Phenol-d6 (surr.)	1	%	-	-	-	113
Halogenated Volatile Organics						
1.1-Dichloroethane	0.05	mg/kg	-	-	-	< 0.05
1.1-Dichloroethene	0.05	mg/kg	-	-	-	< 0.05
1.1.1-Trichloroethane	0.05	mg/kg	-	-	-	< 0.05
1.1.1.2-Tetrachloroethane	0.05	mg/kg	-	-	-	< 0.05
1.1.2-Trichloroethane	0.05	mg/kg	-	-	-	< 0.05
1.1.2.2-Tetrachloroethane	0.05	mg/kg	-	-	-	< 0.05
1.2-Dibromoethane	0.05	mg/kg	-	-	-	< 0.05
1.2-Dichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2-Dichloroethane	0.05	mg/kg	-	-	-	< 0.05
1.2-Dichloropropane	0.05	mg/kg	-	-	-	< 0.05
1.2.3-Trichloropropane	0.05	mg/kg	-	-	-	< 0.05
1.3-Dichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.3-Dichloropropane	0.05	mg/kg	-	-	-	< 0.05
1.4-Dichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Bromodichloromethane	0.05	mg/kg	-	-	-	< 0.05
Bromoform	0.05	mg/kg	-	-	-	< 0.05
Bromomethane	0.05	mg/kg	-	-	-	< 0.05
Carbon Tetrachloride	0.05	mg/kg	-	-	-	< 0.05

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Atma Environmental	Client Sample ID		TV9	TV10	SV1	SV2
Unit 6	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
93 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
1,2,4-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1,2,4,5-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1,3-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
1,3,5-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1,4-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
Benzal chloride	0.05	mg/kg	-	-	-	< 0.05
Benzotrichloride	0.05	mg/kg	-	-	-	< 0.05
Benzyl chloride	0.2	mg/kg	-	-	-	< 0.2
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobutadiene	0.05	mg/kg	-	-	-	< 0.05
Hexachlorocyclopentadiene	0.05	mg/kg	-	-	-	< 0.05
Hexachloroethane	0.05	mg/kg	-	-	-	< 0.05
Pentachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Dibutylchlorendate (surr.)	1	%	-	-	-	97
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	100
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	97
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	100
Phenols						
2-Chlorophenol	0.1	mg/kg	-	-	-	< 0.1
2-Methylphenol (o-Cresol)	0.1	mg/kg	-	-	-	< 0.1

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV9	TV10	SV1	SV2
	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	**LOR**	**Units**				
Organochlorine Pesticides						
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
Chlordane	0.1	mg/kg	-	-	-	< 0.1
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxophene	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	97
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	100
Chlorinated Hydrocarbons						
1.2-Dichlorobenzene	0.2	mg/kg	-	-	-	< 0.2
1.2.3-Trichlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.3.4-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
1.2.3.5-Tetrachlorobenzene	0.05	mg/kg	-	-	-	< 0.05

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Atma Environmental	Client Sample ID		TV9	TV10	SV1	SV2
Unit 6	Lab Number		08-MY10371	08-MY10372	08-MY10373	08-MY10374
83 Dover St	Matrix		Soil	Soil	Soil	Soil
Richmond 3121	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
	LOR	Units				
Analysis Type						
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
Monocyclic Aromatic Hydrocarbons						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Xylenes(ortho,meta and para)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Fluorobenzene (surr.)	1	%	108	104	99	102
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	-	-	-	< 0.1
Acenaphthylene	0.1	mg/kg	-	-	-	< 0.1
Anthracene	0.1	mg/kg	-	-	-	< 0.1
Benz(a)anthracene	0.1	mg/kg	-	-	-	< 0.1
Benzo(a)pyrene	0.1	mg/kg	-	-	-	< 0.1
Benzo(b)fluoranthene	0.1	mg/kg	-	-	-	< 0.1
Benzo(g,h,i)perylene	0.1	mg/kg	-	-	-	< 0.1
Benzo(k)fluoranthene	0.1	mg/kg	-	-	-	< 0.1
Chrysene	0.1	mg/kg	-	-	-	< 0.1
Dibenz(a,h)anthracene	0.1	mg/kg	-	-	-	< 0.1
Fluoranthene	0.1	mg/kg	-	-	-	< 0.1
Fluorene	0.1	mg/kg	-	-	-	< 0.1
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	-	-	-	< 0.1
Naphthalene	0.1	mg/kg	-	-	-	< 0.1
Phenanthrene	0.1	mg/kg	-	-	-	< 0.1
Pyrene	0.1	mg/kg	-	-	-	< 0.1
Total PAH	1	%	-	-	-	122
Chrysene-d12 (surr.)	1	%	-	-	-	112
2-Fluorobiphenyl (surr.)						

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Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV5	TV6	TV7	TV8
	Lab Number		08-MY10367	08-MY10368	08-MY10369	08-MY10370
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Phenols						
2-Chlorophenol	0.1	mg/kg	-	< 0.1	-	-
2-Methylphenol (o-Cresol)	0.1	mg/kg	-	< 0.1	-	-
2-Nitrophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.1	mg/kg	-	< 0.1	-	-
2.4-Dimethylphenol	0.1	mg/kg	-	< 0.1	-	-
2.4.6-Trichlorophenol	0.1	mg/kg	-	< 0.1	-	-
2.6-Dichlorophenol	0.1	mg/kg	-	< 0.1	-	-
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	-	< 0.2	-	-
4-Chloro-3-methylphenol	0.1	mg/kg	-	< 0.1	-	-
Pentachlorophenol	0.5	mg/kg	-	< 0.5	-	-
Phenol	0.1	mg/kg	-	< 0.1	-	-
Phenol-d6 (surr.)	1	%	-	105	-	-
% Moisture	0.1	%	3.8	2.8	3.3	4.8

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Atma Environmental

Unit 6
83 Dover St
Richmond 3121

Client Sample ID		TV5	TV6	TV7	TV8
Lab Number		08-MY10367	08-MY10368	08-MY10369	08-MY10370
Matrix		Soil	Soil	Soil	Soil
Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
LOR	Units				
Total Recoverable Hydrocarbons					
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
Monocyclic Aromatic Hydrocarbons						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Xylenes(ortho,meta and para)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Fluorobenzene (surr.)	1	%	78	105	115	106
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	-	< 0.1	-	-
Acenaphthylene	0.1	mg/kg	-	< 0.1	-	-
Anthracene	0.1	mg/kg	-	< 0.1	-	-
Benz(a)anthracene	0.1	mg/kg	-	< 0.1	-	-
Benzo(a)pyrene	0.1	mg/kg	-	< 0.1	-	-
Benzo(b)fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Benzo(g,h,i)perylene	0.1	mg/kg	-	< 0.1	-	-
Benzo(k)fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Chrysene	0.1	mg/kg	-	< 0.1	-	-
Dibenz(a,h)anthracene	0.1	mg/kg	-	< 0.1	-	-
Fluoranthene	0.1	mg/kg	-	< 0.1	-	-
Fluorene	0.1	mg/kg	-	< 0.1	-	-
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	-	< 0.1	-	-
Naphthalene	0.1	mg/kg	-	< 0.1	-	-
Phenanthrene	0.1	mg/kg	-	< 0.1	-	-
Pyrene	0.1	mg/kg	-	< 0.1	-	-
Total PAH	1	%	-	99	-	-
Chrysene-d12 (surr.)	1	%	-	77	-	-
2-Fluorobiphenyl (surr.)						

COMMENTS:

3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV1	TV2	TV3	TV4
	Lab Number		08-MY10363	08-MY10364	08-MY10365	08-MY10366
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Phenols						
2-Chlorophenol	0.1	mg/kg	< 0.1	-	-	-
2-Methylphenol (o-Cresol)	0.1	mg/kg	< 0.1	-	-	-
2-Nitrophenol	0.5	mg/kg	< 0.5	-	-	-
2,4-Dichlorophenol	0.1	mg/kg	< 0.1	-	-	-
2,4-Dimethylphenol	0.1	mg/kg	< 0.1	-	-	-
2,4,6-Trichlorophenol	0.1	mg/kg	< 0.1	-	-	-
2,6-Dichlorophenol	0.1	mg/kg	< 0.1	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.2	mg/kg	< 0.2	-	-	-
4-Chloro-3-methylphenol	0.1	mg/kg	< 0.1	-	-	-
Pentachlorophenol	0.5	mg/kg	< 0.5	-	-	-
Phenol	0.1	mg/kg	< 0.1	-	-	-
Phenol-d6 (surr.)	1	%	112	-	-	-
% Moisture	0.1	%	4.3	4.2	2.9	4.2

COMMENTS:

Environmental Consulting Pty. Ltd.
3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
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Email: mgt@mgtenv.com.au

Atma Environmental Unit 6 83 Dover St Richmond 3121	Client Sample ID		TV1	TV2	TV3	TV4
	Lab Number		08-MY10363	08-MY10364	08-MY10365	08-MY10366
	Matrix		Soil	Soil	Soil	Soil
	Sample Date		May 26, 2008	May 26, 2008	May 26, 2008	May 26, 2008
Analysis Type	LOR	Units				
Total Recoverable Hydrocarbons						
TRH C6-C9 Fraction by GC	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14 Fraction by GC	50	mg/kg	< 50	< 50	< 50	< 50
TRH C15-C28 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
TRH C29-C36 Fraction by GC	100	mg/kg	< 100	< 100	< 100	< 100
Monocyclic Aromatic Hydrocarbons						
Benzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toluene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Xylenes(ortho,meta and para)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Fluorobenzene (surr.)	1	%	89	90	117	87
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.1	mg/kg	< 0.1	-	-	-
Acenaphthylene	0.1	mg/kg	< 0.1	-	-	-
Anthracene	0.1	mg/kg	< 0.1	-	-	-
Benz(a)anthracene	0.1	mg/kg	< 0.1	-	-	-
Benzo(a)pyrene	0.1	mg/kg	< 0.1	-	-	-
Benzo(b)fluoranthene	0.1	mg/kg	< 0.1	-	-	-
Benzo(g,h,i)perylene	0.1	mg/kg	< 0.1	-	-	-
Benzo(k)fluoranthene	0.1	mg/kg	< 0.1	-	-	-
Chrysene	0.1	mg/kg	< 0.1	-	-	-
Dibenz(a,h)anthracene	0.1	mg/kg	< 0.1	-	-	-
Fluoranthene	0.1	mg/kg	< 0.1	-	-	-
Fluorene	0.1	mg/kg	< 0.1	-	-	-
Indeno(1,2,3-cd)pyrene	0.1	mg/kg	< 0.1	-	-	-
Naphthalene	0.1	mg/kg	< 0.1	-	-	-
Phenanthrene	0.1	mg/kg	< 0.1	-	-	-
Pyrene	0.1	mg/kg	< 0.1	-	-	-
Total PAH	1	%	106	-	-	-
Chrysene-d12 (surr.)	1	%	74	-	-	-
2-Fluorobiphenyl (surr.)						

COMMENTS:

Environmental Consulting Pty. Ltd.
3 Kingston Town Close, Oakleigh, Victoria 3166, Australia
Postal address: P. O. Box 276, Oakleigh, Victoria 3166, Australia
Telephone: (03) 9564 7055
Fax: (03) 9564 7190
Email: mgt@mgtenv.com.au

CERTIFICATE OF ANALYSIS

Atma Environmental
Unit 6
83 Dover St
Richmond 3121
Site: 541-CLAYTON WEST

Report Number: 227492 Page 1 of 25
Order Number:
Date Received: May 27, 2008
Date Sampled: May 26, 2008
Date Reported: May 29, 2008
Contact: Flynn Clarke

Methods

- USEPA 8260B, MGT 350A Halogenated Volatile Organics
- USEPA 8270C Phenols
- USEPA 6010B Heavy Metals & USEPA 7470/71 Mercury
- USEPA 8082 Polychlorinated Biphenyls
- USEPA 8121 Chlorinated Hydrocarbons
- USEPA 8081A Organochlorine Pesticides
- USEPA 8270C Polycyclic Aromatic Hydrocarbons
- USEPA 8260B - MGT 350A Monocyclic Aromatic Hydrocarbons
- MGT100A-GC Total Recoverable Hydrocarbons
- USEPA 9010B Cyanide
- Method 102 - ANZECC - % Moisture
- APHA 3500-Cr Hexavalent Chromium-(Extraction:- USEPA3060)
- USEPA 8260B - MGT 350A Volatile Organics by GCMS
- NEPM 404 (Fusion followed by ISE)

Comments

Notes

1. The results in this report supersede any previously corresponded results.
2. All Soil Results are reported on a dry basis.
3. Samples are analysed on an as received basis.
4. LOR's are matrix dependent. Stated LOR's may be raised where sample extracts are diluted due to interferences.

ABBREVIATIONS
mg/kg : milligrams per kilograms, mg/L : milligrams per litre, ppm : parts per million,
LOR : Limit of Reporting
RPD : Relative Percent Difference
CRM : Certified Reference Material
LCS : Laboratory Control Sample

Authorised

Report Number: 227492

Michael Wright
Laboratory Manager
NATA Signatory

Rhonda Chouman
Client Manager
NATA Signatory

Orlando Scalzo
Chief Organic Chemist
NATA Signatory

Tammy Lakeland
Chief Inorganic Chemist

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited
Laboratory Number 1261
The tests, calibrations or measurements covered by this document have been performed in accordance with NATA requirements which include the requirements of ISO/IEC 17025 and are traceable to national standards of measurement. This document shall not be reproduced, except in full.

Environmental Laboratory Industry Group
Member

Chain of Custody Record

Atma Environmental

(modified after US EPA chain of custody form)

Sheet 1 of 1

PROJECT: 541 - CLAYTON WEST

Sampler's Signature: △

Sampler's Name: △ Flynn

Site No: 541

DATE: 26/5/08

Time:

SAMPLE NO.	DISCRETE	COMPOSITE	GRAB	SAMPLE MATRIX: SOIL	WATER	BLANK /	ANALYSIS FOR: Suite 1	Suite 4	Phenols	EPA 448.3 Scan				NO. of CONTAINERS	HIGH CONTAM EXPECTED	COMPOSITING INSTRUCTIONS:
TV1	✓			✓			✓	✓	✓					1		
TV2	✓			✓			✓							1		
TV3	✓			✓			✓							1		
TV4	✓			✓			✓							1		
TV5	✓			✓			✓							1		
TV6	✓			✓				✓	✓					1		
TV7	✓			✓			✓							1		
TV8	✓			✓			✓							1		
TV9	✓			✓			✓							1		
TV10	✓			✓			✓							1		
SV1	✓			✓			✓							1		
SV2	✓			✓						✓				1		
SV3	✓			✓			✓							1		
SV4	✓			✓						✓				1		
SV5	✓			✓			✓							1		
SV6	✓			✓			✓							1		Hold
LV1	✓			✓										1		Hold
LV2	✓			✓										1		Hold
DUP-260508	✓			✓										1		Hold
Recon-260508	✓				✓									1		Hold
SPLIT-260508	✓			✓												
TOTAL:	20			19	1		12	2	2	2				24		

COURIERED BY: (sign) (DATE/TIME)

DISPATCHED BY: (sign) (DATE/TIME)

△

■ RECEIVED BY: (sign) Andrew 27/5/08 10:30 (DATE/TIME)

LAB NAME: MGT Diana 227492.

REC'D FOR LAB BY: (sign) (DATE/TIME)

INITIAL RESULTS REQUESTED WITHIN: (24 HRS) 48 HRS NORMAL

PRELIM RESULTS REC'D: (DATE/TIME) FINAL RESULTS REC'D: (DATE/TIME)

REMARKS: Please fax COC upon reciept of samples as confirmation for our records. Fax: (03) 9429 5911

Please email results to: cellis@atmaenvironmental.com, gberry@atmaenvironmental.com, kchurch@atmaenvironmental.com, trobson@atmaenvironmental.com, rclarke@atmaenvironmental.com, rmcphillips@atmaenvironmental.com

NOTE: △ Must be completed by Atma Environmental ■ Must be completed with date and time by laboratory.

Atma Environmental

Validation Log Sheet

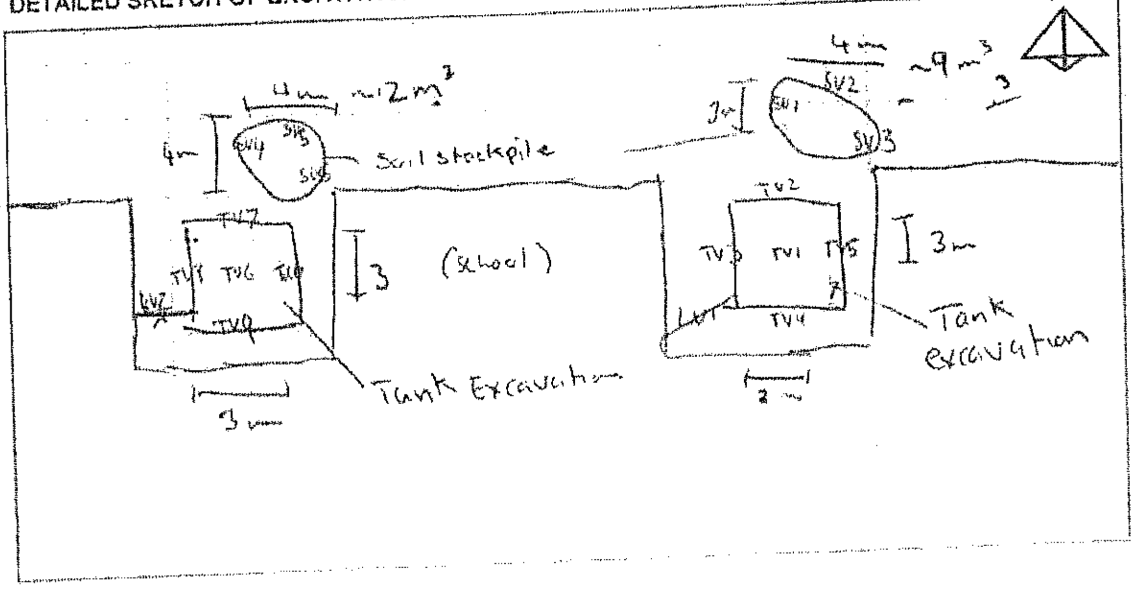
CLIENT: Shanley Management Services
JOB TITLE: CLAYTON WEST
JOB NUMBER: 541
DATE: 26/5/08

LOGGED BY: FC
INSTRUMENT TYPE: OVA
CALIBRATION STATUS:
FIELD LOGBOOK REFERENCE:

Location No. (Sketch)	Depth (m)	Field Rank (0-3)	PID Hspace (ppm)	Sample ID (1)	Soil Type	Duplicate details, tank sizes, fate of soil, other details.
TV1	0.1	0	0		Sand	
TV2			0			
TV3			0			
TV4			0			
TV5			0			
TV6			0			
TV7			0			
TV8			10			
TV9			10			
TV10			0			DUP-260508
SV1	0.4		0			
SV2			0			
SV3			0			SPLIT-260508
SV4			0			
SV5			0			
SV6			0			
LV1	0.1		0			
LV2	0.1		0			

(1) Sample number for laboratory analysis (from COC)

DETAILED SKETCH OF EXCAVATION:



Complete scale and north orientation. If a number of sub-areas exist attach scale, sketches, details and refer to site plan

SCALE:

Table 1. Analytical Summary - Soils

PROJECT: Clayton West UST (# 541)
Laboratory Report No: 227492
Page 1 of 1

Atma Environmental

Sample Identification	Laboratory	Date Sampled	Material Type	No. of Sub-Samples	Arsenic (As)	Cadmium (Cd)	Total Chromium (Cr)	Hexavalent Chromium	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Silver (Ag)	Tin (Sn)	Zinc (Zn)	T.R.H (C6-C9)	T.R.H (C10-C14)	T.R.H (C15-C28)	T.R.H (C29-C36)	MAHs (sum)	PAHs (Total)	OCP's (sum)	PCBs (total)	Phenols (halogenated)	Phenols (non-halogenated)	Cyanide (total)	Halogenated Vol. Orgs (sum)	Semi-Vol. CHCs (sum)
EPA IB44/C3 Category C Threshold - Maximum allowable for Fill (mg/kg)					20	3		1	100	300	1	40	60	10	10	50	200	100		1,000		7	20	1	See	1	60	50		1
EPA IB44/C3 Category B Threshold (mg/kg)					500	100		500	5000	1,500	75	1,000	3,000	50	180	300	35 K	650		10,000		70	100	Varies	EPA 693	10	560	2,500		Varies
[illegible]					[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		10K		[illegible]	400	Varies		[illegible]	[illegible]	[illegible]		Varies
TV1	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND	ND			ND	ND			
TV2	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV3	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV4	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV5	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV6	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV7	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND	ND			ND	ND			
TV8	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV9	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
TV10	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
SV1	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
SV2	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
SV3	mgt	26-May-08	Fill	1	<2	<0.5	<5	<1	<5	<5	<0.1	<10	<5	<2	<5	<10	5.3	<20	<50	<100	<100	ND	ND	ND	ND	ND	ND	<5	ND	ND
SV4	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								
SV5	mgt	26-May-08	Fill	1	<2	<0.5	5.6	<1	14	<5	<0.1	<10	42	<2	<5	<10	16	<20	<50	<100	<100	ND	ND	ND	ND	ND	ND	<5	ND	ND
SV6	mgt	26-May-08	Fill	1														<20	<50	<100	<100	ND								

NOTES:
A = From NSW EPA 1994 'Guidelines for Assessing Service Station Sites';
b = From Dutch 1983 Criteria (vs. 2000) - 'C', Indicative Value for Cleaning-up.
SCL means 'Indicative Level for Serious Contamination' per Dutch 2000 - where no Intervention Lvl. given.
ND means Not Detected;
n/a means Not Available or Not Applicable;
Bolded results exceed criteria;
All units are in mg/kg unless otherwise stated;
K means x 1,000

locations is not likely. Review of the tank removal validation sample analysis results indicates that no soil contamination is present in the walls and floor of the two nests where tanks were removed. The analytical results are summarised on the attached Table 1.

Kind regards,
ATMA ENVIRONMENTAL PTY LTD

Flynn Clarke
Environmental Consultant

Attachments

- Table 1 – Soil Analytical Summary
- Validation Log Sheet
- COC & mgt Environmental P/L Report #219631

Distribution

South Improvement Alliance (1 pdf copy)
Atma Environmental file (1 pdf copy)

Atma *Environmental*

29th May 2008

Our Reference: Job 541 Clayton West

Mr. David Kiernan
Shanley Management Services

Sent Via Email: dkiernan@smspl.net.au

Dear Mr Kiernan;

Re.: Tank Removal Validation Letter:
Clayton West Primary School, Alvina St, Oakleigh South, Victoria.

On 26th May 2008 Atma Environmental collected six soil samples from two soil stockpiles (approximately 12 m^3 & 9 m^3) located at the above site. SV1 – SV3 were collected from Stockpile A (approximately 12 m^3) while SV4 – SV6 were collected from Stockpile B (approximately 9 m^3). Sample locations are shown on the attached validation log sheet. The sampled material consisted of tank nest sand and was free of demolition debris and putrescible matter.

The aim of the sampling work was to ascertain the contamination status of this material prior to off site disposal and advice on its potential for re-use on-site.

The sample analysis performed conforms to disposal chemical parameters given by EPA Victoria Information Bulletin 448.3 *Classification of Wastes,* with one sample from each stockpile analysed for the full suite in above guideline and the other four samples analysed for contaminants of concern (TRH/BTEX). The full report by NATA accredited laboratory mgt Environmental Consulting Pty Ltd (#227492) is attached.

Review of the results indicates this **stockpiled** material is uncontaminated and is classifiable as **Clean Fill** (i.e. soil meets Maximum Allowable Levels for Fill), and can be transported off site with no licence requirements. Alternatively the material may be reused on-site. OVA results indicate no volatile organic vapours from the soil samples. The analytical results are summarised on the attached Table 1.

In addition to obtaining soil samples to ascertain the disposal classification of the excavated material, Atma Environmental obtained and tested numerous validation samples from walls and floors of the two tank excavations. The locations of the said samples are indicated on the attached Validation Log Sheet. The tank nest wall validation samples were analysed for TRHs and BTEX, while samples collected from the nest floor were also analysed for PAHs and phenols. Samples were also collected from around the former tank lines at each location; these samples were held at the lab for analysis if required at a later date.

Headspace testing of the soil samples indicated mainly non-detectable results, however, samples TV8 and TV9 returned very low results, indicating the presence of organic vapour at these

APPENDIX A

Tank Removal Validation Letter
(29th May 2008)

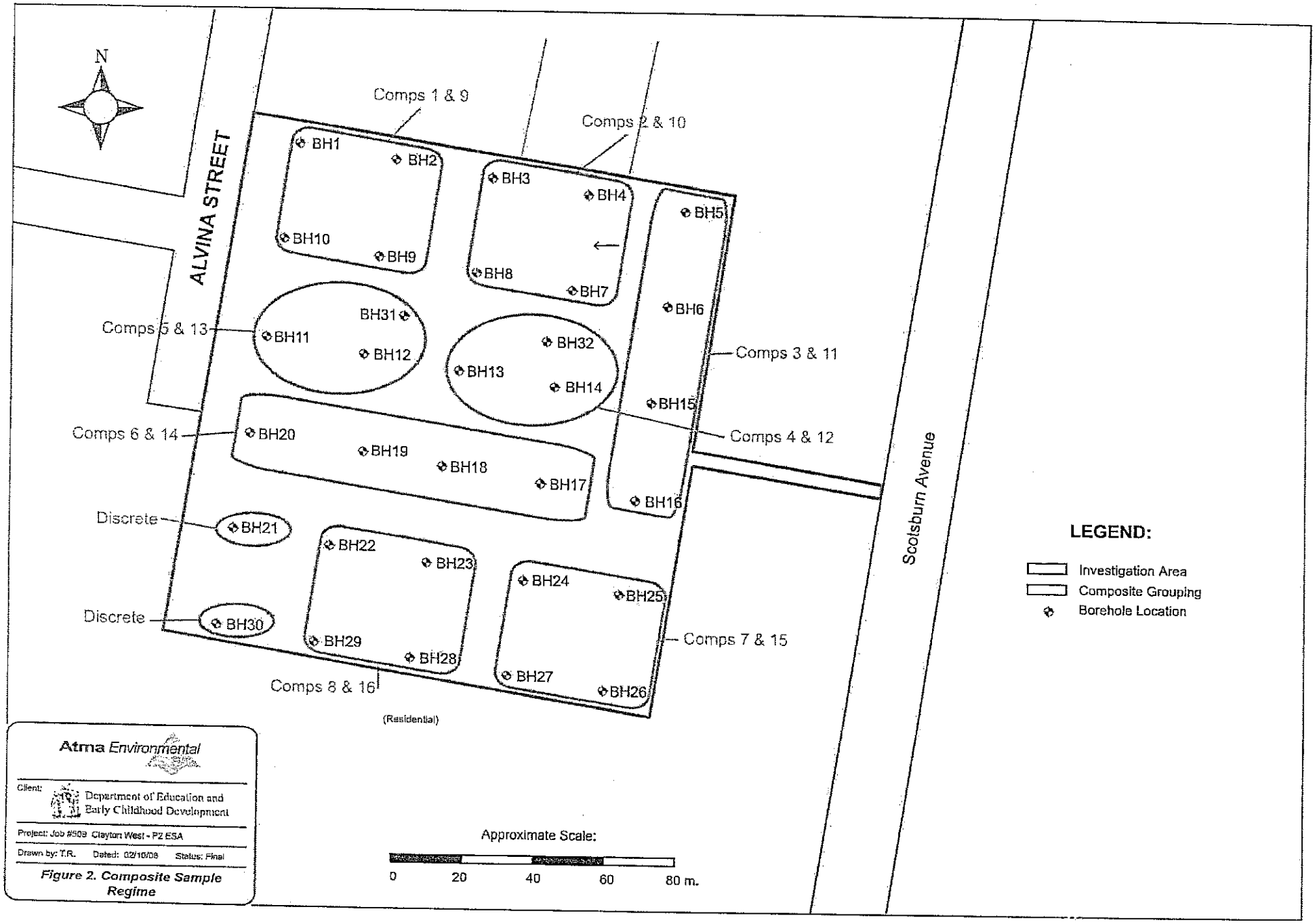
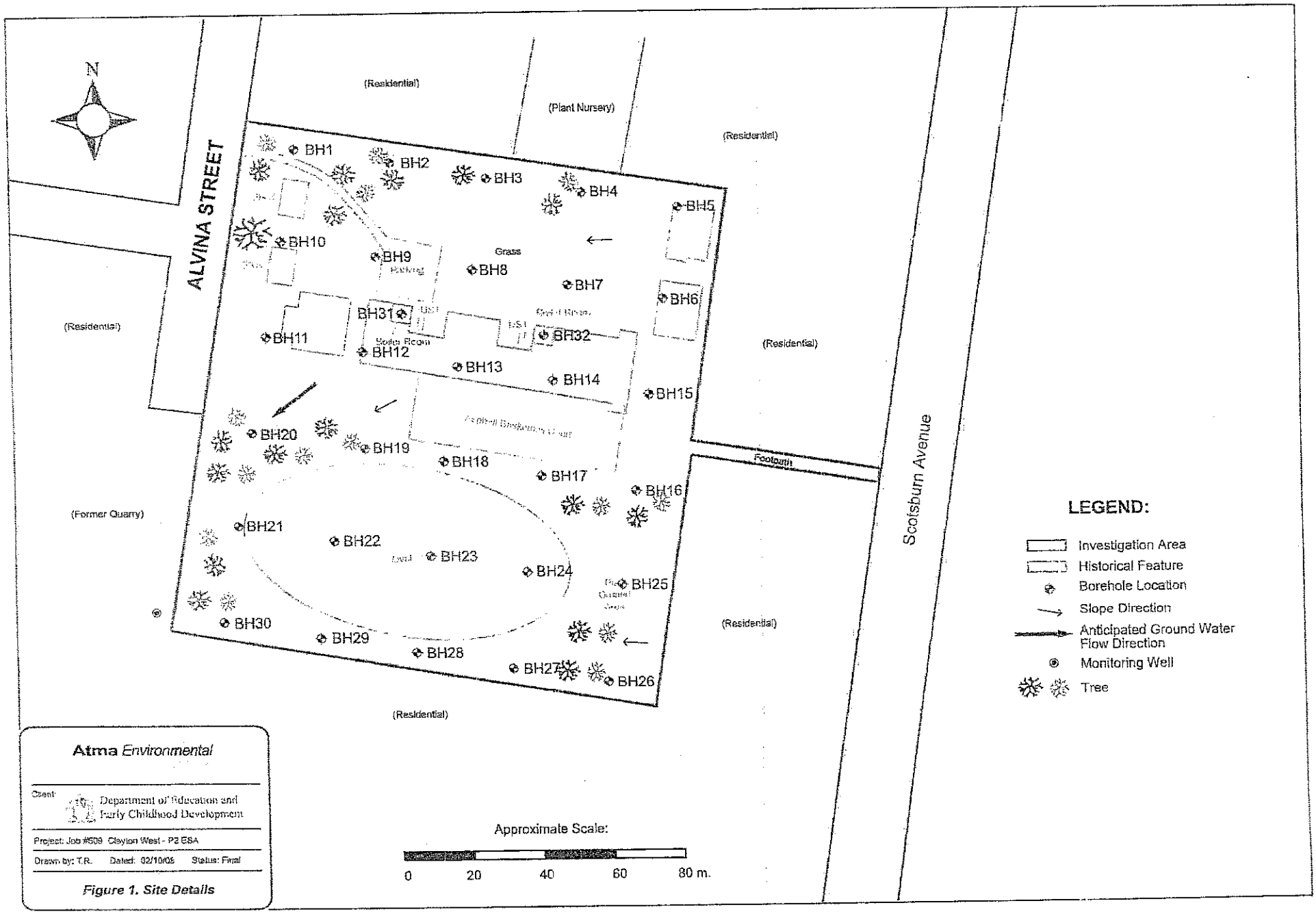


Figure 2. Composite Sample Regime


N
ALVINA STREET
(Residential)
(Plant Nursery)
(Residential)
(Residential)
(Residential)
(Former Quarry)
(Residential)
(Residential)
Scotsburn Avenue
Footpath
Grass
Parking
Septic Room
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
BH12
BH13
BH14
BH15
BH16
BH17
BH18
BH19
BH20
BH21
BH22
BH23
BH24
BH25
BH26
BH27
BH28
BH29
BH30
BH31
BH32
LEGEND:
Investigation Area
Historical Feature
Borehole Location
Slope Direction
Anticipated Ground Water Flow Direction
Monitoring Well
Tree
Approximate Scale:
0
20
40
60
80 m.
Atma Environmental
Client: Department of Education and Early Childhood Development
Project: Job #509 Clayton West - P2 ESA
Drawn by: T.R. Dated: 02/10/06 Status: Final
Figure 1. Site Details

errors or omissions in that data, or from factors or data which were not made available to Atma Environmental Pty Ltd or which Atma Environmental Pty Ltd could not ascertain by reasonable inquiry in the ordinary course of its investigation.

Environmental site assessments document property conditions at the time they are conducted. These conditions may change over time. The site assessment has not specifically considered above ground issues such as lead-based paint and asbestos containing building products.

8 REFERENCES

Atma Environmental Pty Ltd, *"Phase 1 Environmental Site Assessment: Former Clayton West P.S., Alvina Street, Oakleigh South, Victoria"*, 12th February 2008 [Ref #509].

Atma Environmental Pty Ltd, "*Correspondence Re.: Tank Removal Validation Letter: Clayton West Primary School, Alvina St, Oakleigh South, Victoria*", 29 May 2008 [Ref #541].

Australian Standard AS 4482.1 - 2005, "*Guide to the sampling and investigation of potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*", 2005.

National Environment Protection Council (NEPC), "*National Environment Protection (Assessment of Site Contamination) Measure*", 1999 [ISBN 0-642-32312-7].

Netherlands Ministry of Housing, Spatial Planning & Environment. "*Circular on Target Values & Intervention Values for Soil Remediation*", Netherlands, 2000.

New South Wales Environmental Protection Authority, *"Guidelines for Assessing Service Station Sites"*, 1994.

Victoria Government Gazette, "*State Environmental Protection Policy (Prevention & Management of Contamination of Land)*", No. S 95, June 2002.

Victorian Environmental Protection Authority, *"Information Bulletin - Classification of Wastes"*, EPA Victoria Publication 448.3, May 2007.

6 CONCLUSION & RECOMMENDATIONS

A Phase 2 Environmental Site Assessment (ESA) has been completed at the site located at the former Clayton West Primary School, Victoria for the purpose of determining if contamination above relevant health-based levels for sensitive uses exist at the site on behalf of the Department of Education who is seeking to divest the subject site and rezone the land to *'Residential'*.

The Phase 2 site investigation consisted of sampling 30 grid-based and two additional targeted soil sampling locations.

Based on the findings of the soil investigation undertaken at the site, it is concluded that:

- No contaminant concentrations exceeding NEPM 'A' setting HILs for residential use were found on the site;
- No contaminant concentrations exceeding NEPM EILs were found at the site;
- Acidic soil conditions on some areas may affect the growth of some plant types and further geotechnical assessment may be desirable.

On the basis of the analytical work carried out, the site does not (within the specified degree of certainty) contain contaminant levels potentially harmful to human health.

A groundwater investigation is considered not warranted at this point in time as results indicate low to non-detectable levels of contaminants of concern and there were no point sources of contamination identified onsite, with former UST being removed and validated.

7 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The report consists of the scope of work outlined previously and does not define the extent of any contamination potentially exceeding ecological levels. This report describes the work undertaken and has been compiled for the use of the Department of Education only. Its conclusions are only valid for the purpose for which it was requested.

It is valid only when it is in original form, and any person or company other than the Department of Education who rely on the report without specific reference to and permission from Atma Environmental Pty Ltd does so at their own risk.

While every care has been taken in the compilation of this report, to the extent that its conclusions are based on the analysis of the data made available by your organisation or by a third party, no responsibility or liability is accepted for consequences arising from either

Table 3.1 QA/QC - Equipment Decontamination, Field & Trip Samples (mg/L)

Date Sampled	Laboratory	Sample Name	Antimony (Sb)	Arsenic (As)	Beryllium (Be)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Tin (Sn)	Zinc (Zn)
30-Sep-08	mgt	DECON-300908	< 0.005	< 0.001	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0001	< 0.005	< 0.001	< 0.001	< 0.005	< 0.001
30-Sep-08	mgt	FIELD-300908	< 0.005	< 0.001	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0001	< 0.005	< 0.001	< 0.001	< 0.005	< 0.001
30-Sep-08	mgt	TRIP-300908	< 0.005	< 0.001	< 0.001	< 0.0002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.0001	< 0.005	< 0.001	< 0.001	< 0.005	< 0.001

NOTES: All results in mg/L.

Table 3.2. Soil Sample Relative Percentage Differences (RPDs)

Date Sampled	Laboratory	Sample Name	Antimony (Sb)	Arsenic (As)	Beryllium (Be)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Tin (Sn)	Zinc (Zn)	T.R.H C6-C9	T.R.H C10-C14	T.R.H C15-C28	T.R.H C29-C36
30-Sep-08	mgt	BH30/0.1	< 10	< 2	< 2	< 0.5	< 5	< 5	8.9	5.7	< 0.1	< 10	< 5	< 2	< 10	15	< 20	< 50	< 100	< 100
	mgt	DUPE-390908	< 10	< 2	< 2	< 0.5	< 5	< 5	7.4	< 5	< 0.1	< 10	< 5	< 2	< 10	12	< 20	< 50	< 100	< 100
			0*	0*	0*	0*	0*	0*	-18.4	78.0	0*	0*	0*	0*	0*	22.2	0*	0*	0*	0*
30-Sep-08	mgt	BH30/0.1	< 10	< 2	< 2	< 0.5	< 5	< 5	8.9	5.7	< 0.1	< 10	< 5	< 2	< 10	15	< 20	< 50	< 100	< 100
	ALS	SPLITE-300908		<5		<1	<2		8	<5	<0.1		<2			17	<10	<50	230	230
				0*		0*	0*		10.7	78.0	0*		0*			12.5	0*	0*	128.6	128.6

NOTES: All results in mg/kg;
Where one sample is non-detectable and its paired result is positive, one half the detection limit is used to calculate the RPD.
* = effectively zero

5 QUALITY ASSURANCE

Field replicates including five duplicate (DUPA-301008 - DUPE-301008) and five split samples (SPLITA-301008 - SPLITE-301008) were collected during the soil investigation.

One duplicate sample (DUPE-301008) was submitted to the primary laboratory and one split sample (SPLITE-301008) was submitted to the secondary laboratory for analysis as the required frequency for the number of samples tested. One equipment decontamination rinsate sample (DECON-301008), one field blank sample (FIELD-301008) and one trip blank (TRIP-301008) were also submitted to the primary laboratory and analysed for a heavy metals screen (see Table 3.1 and 3.2 for details).

mgt Environmental Consulting Pty Ltd, a NATA certified laboratory, was the primary laboratory used for the soil sample analysis work. ALS, also NATA certified, was used as the secondary check laboratory.

Results of the primary and duplicate samples are compared against their relative percent differences, or RPDs (the difference in results divided by the mean of the two results x 100). 36 RPD pairs were calculated.

89% of the RPDs between the primary sample and duplicate sample and primary sample and the split sample are in good agreement (i.e. RPDs <50% for inorganics and <70% for organics). Two RPDs for lead were above 50% and two RPD pairs for TRHs were above 70%. These differences are not necessarily indicative of a laboratory error as the results are close to the laboratory detection limits and this exaggerates the difference. The RPDs are shown in Table 3.2.

The DECON, FIELD and TRIP samples returned acceptable (non-detectable) results.

The primary and secondary laboratory's internal QA duplicates had acceptable RPD and spike recovery results. The laboratories also performed "method blanks" on clean matrices and no detectable results were found.

Atma Environmental logged all samples on a Sample Master List as they were collected. In this fashion, any suspected incidence of cross contamination could be tracked down by looking at the order in which samples had been collected.

Table 2. Analytical Summary - Soils

PROJECT: Clayton West (#590)
Laboratory Report Nos: 234494, 235253
Page 1 of 1

Atma Environmental

Sample Identification	Laboratory	Date Sampled	No. of Sub-Samples	Antimony (Sb)	Arsenic (As)	Beryllium (Be)	Boron (B)	Cadmium (Cd)	Total Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Lead (Pb)	Manganese (Mn)	Mercury (Hg)	Molybdenum (Mo)	Nickel (Ni)	Selenium (Se)	Tin (Sn)	Zinc (Zn)
NEPM 1999 Ecological Investigation Level (EIL):				n/a	20	n/a	n/a	3	400	n/a	100	600	500	1	n/a	60	n/a	n/a	200
ANZECC 1992 'B' Environmental Investigation Guidelines:				20	-	n/a	-	3	-	n/a	-	-	-	-	n/a	-	n/a	50	-
Dutch 2000 [(Target + Interventn-SCL)/2] - Alternate EIL:				-	-	15.55	-	-	-	124.5	-	-	-	-	101.5	-	50.35	-	-
NEPM 1999 'A' Setting Health Investigation Level (HIL):				n/a	100	20	3,000	20	12%	100	1,000	300	1,500	15	n/a	600	n/a	n/a	7,000
BH6/0.1	mgt	30-Sep-08																	
BH9/0.1	mgt	30-Sep-08																	
BH13/0.1	mgt	30-Sep-08																	
BH21/0.1	mgt	30-Sep-08		< 10	< 2	< 2		< 0.5	< 5	< 5	9.1	< 5		< 0.1	< 10	< 5	< 2	< 10	14
BH21/0.5	mgt	30-Sep-08		< 10	< 2	< 2		< 0.5	< 5	< 5	16	11		< 0.1	< 10	< 5	< 2	< 10	32
BH22/0.1	mgt	30-Sep-08																	
BH25/0.1	mgt	30-Sep-08																	
BH30/0.1	mgt	30-Sep-08		< 10	< 2	< 2		< 0.5	< 5	< 5	8.9	5.7		< 0.1	< 10	< 5	< 2	< 10	15
BH31/0.1	mgt	30-Sep-08																	
BH32/0.1	mgt	30-Sep-08																	
COMP1	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	5.9	< 5	8.5	9.3		< 0.1	< 10	< 5	< 2	< 10	29
COMP2	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	11	7.8		< 0.1	< 10	< 5	< 2	< 10	26
COMP3	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	6.4	< 5	7.2	6.5		< 0.1	< 10	< 5	< 2	< 10	46
COMP4	mgt	30-Sep-08	3	< 10	< 2	< 2	< 10	< 0.5	< 5	< 5	< 5	8.2	17	< 0.1	< 10	< 5	< 2	< 10	29
COMP5	mgt	30-Sep-08	3	< 10	< 2	< 2	< 10	< 0.5	< 5	< 5	14	9.8	34	< 0.1	< 10	< 5	< 2	< 10	46
COMP6	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	5.3	< 5	14	14		< 0.1	< 10	< 5	< 2	< 10	28
COMP7	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	7.9	9.1		< 0.1	< 10	< 5	< 2	< 10	21
COMP8	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	7.8	< 5		< 0.1	< 10	< 5	< 2	< 10	14
COMP9	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	< 5
COMP10	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	< 5
COMP11	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	8.6
COMP12	mgt	30-Sep-08	3	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	13
COMP13	mgt	30-Sep-08	3	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	5.2		< 0.1	< 10	< 5	< 2	< 10	10
COMP14	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	8
COMP15	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	< 5
COMP16	mgt	30-Sep-08	4	< 10	< 2	< 2		< 0.5	< 5	< 5	< 5	< 5		< 0.1	< 10	< 5	< 2	< 10	< 5

Sample Identification	T.R.H (C6-C9)	T.R.H (C10-C14)	T.R.H (C15-C28)	T.R.H (C29-C36)	MAHs (sum)	PAHs (Total)	Benzo (a) Pyrene	OCP's (sum)	Aldrin + Dieldrin	DDT+DDE+DDD	Chlordane	Heptachlor	PCBs (total)	CHCs (sum)	Phenols (halogenated)	Phenols (non-halogenated)	Cresols (total)	Cyanide (total)	Sulphate	pH
NEPM 1999 Ecological Investigation Level (EIL):	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	2,000	n/a
ANZECC 1992 'B' Environmental Investigation Guidelines:	-	-	-	-	-	-	-	n/a		n/a	n/a	n/a	1	n/a	n/a		n/a	n/a	-	-
Dutch 2000 [(Target + Interventn-SCL)/2] - Alternate EIL:	-	-	-	-	-	-	-			2	2	2	-	15.02	20.03		2.53	10.5	-	-
NEPM 1999 'A' Setting Health Investigation Level (HIL):	65^		1,000^		n/a	20	1	n/a	10	200	50	10	10	n/a	8,500		n/a	500	n/a	n/a
BH6/0.1	< 20	< 50	< 100	< 100																
BH9/0.1	< 20	< 50	< 100	< 100																
BH13/0.1																			330	4.8
BH21/0.1																				
BH21/0.5																				
BH22/0.1	< 20	< 50	< 100	< 100															< 10	6.9
BH25/0.1	< 20	< 50	< 100	< 100															< 10	4.9
BH30/0.1	< 20	< 50	< 100	< 100																
BH31/0.1	< 20	< 50	< 100	< 100	ND															
BH32/0.1	< 20	< 50	< 100	< 100	ND															
COMP1						< 0.1	< 0.1	0.65	ND	0.15	< 0.1	< 0.05								
COMP2						< 0.1	< 0.1													
COMP3						< 0.1	< 0.1	ND	ND	ND	< 0.1	< 0.05								
COMP4						< 0.1	< 0.1	0.79	ND	0.29	< 0.1	< 0.05	ND	ND	ND	ND				
COMP5						< 0.1	< 0.1	ND	ND	ND	< 0.1	< 0.05	ND	ND	ND	ND				
COMP6						0.8	0.1	ND	ND	ND	< 0.1	< 0.05								
COMP7						< 0.1	< 0.1													
COMP8						< 0.1	< 0.1	ND	ND	ND	< 0.1	< 0.05								
COMP9																				
COMP10																				
COMP11																				
COMP12																				
COMP13						< 0.1	< 0.1													
COMP14																				
COMP15						< 0.1	< 0.1													
COMP16																				

NOTES:
^ = From NSW EPA 1994 'Guidelines for Assessing Service Station Sites',
SCL means 'Indicative Level for Serious Contamination' per Dutch 2000 - where no Intervention Lvl. given,
n/a means Not Available or Not Applicable.

ND means Not Detected;
Bolded results exceed criteria.

All units are in mg/kg unless otherwise noted.
K means x 1,000

4.5.1 Inorganics

Of the two discrete and the 16 composite samples analysed for heavy metals, no results exceeded the NEPM 'A' Setting Health Investigation Levels (HILs) or modified HIL 'A' levels for residential use.

4.5.2 Organics

All samples tested for MAHs, OCPs, PAHs, TRHs, PCBs, Phenols and CHCs returned detectable or non-detectable results below all adopted criteria. Importantly, testing for organic contaminants associated with the former boiler rooms at target locations (BH31 and BH32) did not return detectable results.

4.5.3 Other

The pH levels at two locations, BH13 and BH25, had acidic soil conditions with values of 4.8 and 4.9 respectively.

COMP4 had OCP results below HIL criteria but above the laboratory detection limits and this occurrence was probably associated with activities such as pest control around the buildings which were there. A Further Sample Analysis Request (FSAR) was submitted on the 10th of October 2008 to ensure that any areas that formerly had buildings did not have OCPs above HIL criteria. The further results for COMP1, COMP3, and COMP6 were below HIL criteria (as modified for the number of sub-samples).

4.6 Soil Sample Analysis Discussion

There were no exceedances of the Health Investigation Levels adopted for the proposed residential use of the site (NEPM 'A' Setting) for any contaminant across the site, including previously identified areas of potential environmental concern, being the location of former boiler rooms.

Further assessment was carried out so as to confirm that trace levels of pesticides in an initial sample were not a contaminant of concern across other areas of the site. Concentrations are shown to meet residential levels.

The soil sulphate concentrations are not indicative of conditions detrimental to buildings and structures. However, the slightly acidic soil conditions in some areas may affect the growth of some plant types and may warrant further geotechnical investigation.

The primary laboratory used was mgt environmental Pty Ltd and ALS Laboratory was used for split (QA/QC) samples. 15 samples were tested for heavy metals (HMs), 8 for polynuclear aromatic hydrocarbons (PAHs), four for total recoverable hydrocarbons (TRHs), three for pH/sulphate and two for EPA screens. See Table 2 Soil Laboratory Summary for details.

The 'EPA Screen' consists of testing for the following organic contaminants:

- mono-cyclic aromatic hydrocarbon (MAHs)	- organochlorine pesticides (OCPs)
- total recoverable hydrocarbons (TRHs)	- chlorinated hydrocarbons (CHCs)
- polychlorinated biphenyls (PCBs)	- phenolic compounds
- polynuclear aromatic hydrocarbons (PAHs)	

and the following inorganics:

- antimony	- arsenic	- boron	- beryllium	- cadmium
- chromium	- cobalt	- copper	- lead	- manganese
- nickel	- mercury	- molybdenum	- selenium	- tin
- zinc	- cyanide			

Samples tested only for a 'heavy metals suite' quantified the above parameters less: boron, manganese and cyanide.

4.4 Soil Investigation Results

Small amounts of imported fill material, gravel and tan bark, were found at the site. The soil profile predominately consisted of a dark brown silty sand which had evidence of disturbance in most areas above a natural grey fine grained sand. See Appendix C for the soil borehole logs. No odorous, stained or otherwise obviously impaired soils were encountered during the site investigation.

Some work at the site to remove remnant rubble, concrete and glass fragments may be considered desirable to fully meet aesthetic requirements for residential use.

4.5 Soil Sample Analysis Results

Appendix D includes the Chain of Custody documentation used for delivery of the samples to the lab and the full NATA certified laboratory reports. Table 2 provides a summary of laboratory soil results.

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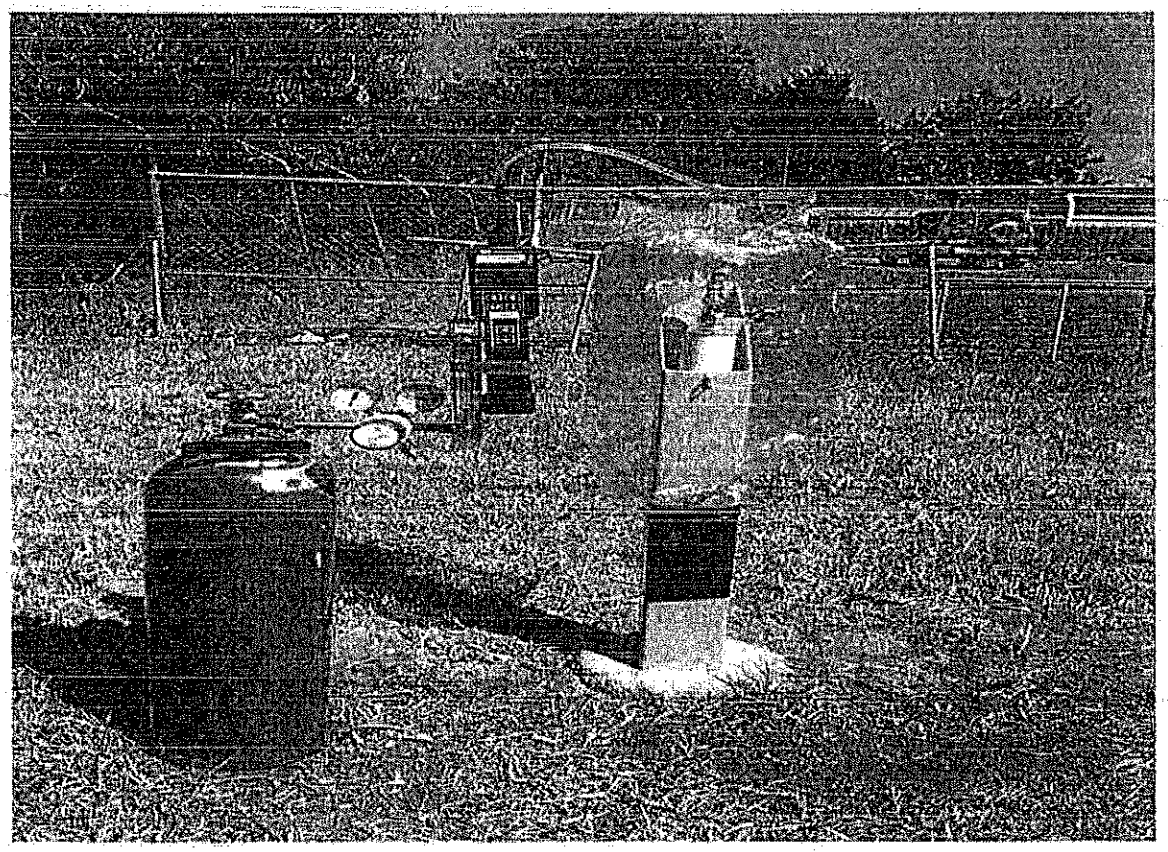
Landfill Gas Report – February 2014

Client : PRENSA

Site : Oakleigh South

Eurofins mgt Report No : 410381



Prepared for;
PRENSA
261-271 Wattletree Rd
Malvern, VIC 3144

Prepared by;
Eurofins | mgt
2-5 Kingston Town Close
Oakleigh, VIC 3166

eurofins | mgt

Table of Contents

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1 Quality Control

1.1 Distribution of Report:

Date Issued: 3rd March 2014
Delivery method: email

Copies	Recipient	Copies	Distributer
1	Sarah Fitzpatrick PRENSA 261-271 Wattletree Rd, Malvern, VIC 3144 sarah.fitzpatrick@prensa.com.au	1	Stephen Curwood Eurofins | mgt 2-5 Kingston Town Close Oakleigh, VIC 3166 StephenCurwood@eurofins.com.au

1.2 Authorising Signatures:

Report Prepared by: Stephen Curwood
Field Services Section Head - AIR

Report Authorised by: Peter Richardson
Field Services Manager.
NATA Signatory

2 Scope of Works

Eurofins mgt were engaged by PRENSA to conduct gas monitoring on a landfill site located at the Clayton West Landfill. As requested by PRENSA monitoring was conducted on the three gas bores on site. Monitoring was conducted in accordance with VIC EPA Draft Publication 1416 September 2011 - DRAFT LANDFILL GAS FUGITIVE EMISSIONS. The three bores were also leak tested on the day of sampling.

3 Test Methods

3.1 Subsurface Gas Monitoring

All soil gas Bores were sampled on the 28th February 2014 in accordance with VIC EPA Draft Publication 1416 September 2011 - DRAFT LANDFILL GAS FUGITIVE EMISSIONS, Section 7 SUBSURFACE GEOLOGY. The extractive landfill gas analyser that was used was the GA2000 – Refer Appendix 1: Buildings, Service Pits & Subsurface Monitoring Field Sheets.

3.2 Leak Testing of Gas Bores

All soil gas Bores were leak tested utilising Helium as a tracer in accordance with Eurofins mgt's In-House Method AISOP002.

3.3 Methane Laboratory Confirmation Gas Bag

Sampling as per Eurofins mgt Air Method AO4 – Tedlar bag collection. Analysis as per Eurofins mgt Method AO6 (Gas Bag - FID).

4 Instrumentation

4.1 Extractive landfill gas analyser

The extractive landfill gas analyser that was used to monitor the soil gas bores on site was the GA2000 Landfill Gas Analyser. It should be noted that the landfill gas analyser that was used does meet the performance specifications stated in Table 4.1 of the VIC EPA Draft Publication 1416 September 2011 - DRAFT LANDFILL GAS FUGITIVE EMISSIONS. Refer Appendix 6: Instrumentation Calibration Data.

4.2 Extractive Helium analyser

The Extractive Helium Analyser that we used for leak testing of the bores was the GasCheck 5000is. This unit was calibrated with certified calibration gas. Refer Appendix 6: Instrumentation Calibration Data.

5 Bore Construction

Each gas bore was constructed with 50mm diameter PVC casing and slotted PVC screen. The bores were covered by dedicated bore covers that were locked.. Each probe had its own dedicated end cap that was installed by Eurofins mgt 24 hours prior to sampling. Sampling was conducted using a quick connect fitting. No deficiencies of the bores were noticed that may have prevented a representative sample being taken.

6 Ground Conditions

The ground conditions encountered at the site on the day of sampling were quite dry. The grass coverage was mostly short to ankle high. No dead vegetation was observed around the gas bore locations on the day of sampling.

7 Weather Conditions

Reference to daily weather observations from the BOM website for the closest weather station to the Oakleigh South site (Moorabbin – see link below) show temperatures on the day of sampling ranging from 10°C (min) to 24°C (max) and barometric pressures of 1024hPa (9am) and 1021hPa (3pm). This decrease in pressure throughout the day can aid the upward flow of soil gas due to the pressure gradient between the vadose zone and the atmosphere. Winds speeds of 15 km/h & 22 km/h were recorded at 9am & 3pm respectively. No rain events were recorded in the three days prior to the sampling event.

		9am		3pm	
Date	Rain (mm)	Temperature (°C)	Barometric Press (hPa)	Temperature (°C)	Barometric Press (hPa)
28th February 2014	<1	15	1024	22	1021

Reference Link – http://www.bom.gov.au/climate/dwo/201402/html/IDCJDW3052.201402.shtml

8 Soil Gas Results Summary

8.1 Subsurface Gas Monitoring

Refer Appendix 1: Subsurface Monitoring Field Sheets for details.

8.2 Methane Laboratory Confirmation Results

Refer Appendix 3: Eurofins mgt Laboratory Confirmation Methane Results

8.3 Gas Bore Leak Test Results

Refer Appendix 2: Leak Testing Field Sheets

9 APPENDICES

APPENDIX 1 –

Subsurface Monitoring Field Sheets

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Eurofins mgt IN-SITU ANALYSER - Field Data Sheet

Client : Prensa

Site : 10 Alvina Street, Oakleigh South

Sample Date : 28.2.14

In-Situ Gas Analysers : GA2000

Barometric Pressure : 1024 (9am) & 1021 (3pm)

Weather Conditions : Sunny, Light Winds

Ground Conditions : Dry Grass Coverage

Probe Description : 50mm PVC with QC fitting

Soil Gas Probe	Sample Time (Hours)	Relative Pressure (mbar)	Flow Reading (l/hr)	In-Situ Readings via Portable Analyser												Comments (incl. Stabilisation Time)
				Ave. VOC's (ppm)	Peak VOC's (ppm)	Peak CH4 %v/v	Peak CO2 %v/v	Min. O2 %v/v	Stabilised Readings							
									CH4 %v/v	CO2 %v/v	O2 %v/v	Balance %v/v	CO ppm	H2S ppm		
GB1	1100	+0.01	0.1	-	-	0.1	1.8	19.3	<0.1	1.8	19.3	78.9	<1	<1		Stable at 60 secs
GB1	1118	-	-	-	-	0.1	1.8	19.3	<0.1	1.8	19.3	78.9	<1	<1		Stable at 45 secs
GB2	1144	+0.05	0.0	-	-	0.1	1.5	19.6	<0.1	1.5	19.6	78.9	<1	<1		Stable at 75 secs
GB2	1201	-	-	-	-	<0.1	1.5	19.4	<0.1	1.5	19.4	79.1	<1	<1		Stable at 30 secs
GB3	1127	+0.00	0.3	-	-	<0.1	0.8	20.1	<0.1	0.8	20.1	79.1	<1	<1		Stable at 80 secs
GB3	1139	-	-	-	-	<0.1	0.8	20.1	<0.1	0.8	20.1	79.1	<1	<1		Stable at 30 secs
Field/Trip Blank	1057	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	>95	<0.1	<0.1		-

Notes: Field/Trip Blank undertaken on tedlar bag containing instrument grade Nitrogen.

APPENDIX 2 –

Leak Testing Field Sheets

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Eurofins mgt GAS PROBE MONITORING - Helium Leak Test Field Data Sheet.

Client : Prensa
Site : 10 Alvina Street, Oakleigh South
Sample Date : 28.2.14
Barometric Pressure: 1024 (9am) & 1021 (3pm)

Soil Gas Probe	Sample Time (Hours)	Sample Depth (m)	Internal Diameter (mm)	Initial Pre-Purge Check (Pass / Fail)	Pre Purge He Probe Reading (% vol)	Helium Shroud Conc. (% vol)	Holding Volumes Removed	Purge Time (min)	Post Purge Helium Reading (% vol)	Helium Leak Check (Pass / Fail)	Comments
GB1	1108	1.8	50	Pass	<1	>95	>3	9	<1	Pass	
GB2	1150	2.0	50	Pass	<1	>95	>3	9	<1	Pass	
GB3	1130	1.9	50	Pass	<1	>95	>3	9	<1	Pass	

Purge Analyser: SKC PUMP

Helium Analyser : GAS CHECK G3

Notes:

APPENDIX 3 –

Eurofins mgt Laboratory Confirmation Methane Results

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Certificate of Analysis

Eurofins | mgt
2-5 Kingston Town Close
Oakleigh
VIC 3168

Attention: Stephen Curwood

Report 410306-A
Client Reference PRENSA
Received Date Feb 28, 2014

Client Sample ID			GB (1)	GB (2)	GB (3)	GB BLANK
Sample Matrix			Air	Air	Air	Air
Eurofins | mgt Sample No.			M14-Fe23460	M14-Fe23461	M14-Fe23462	M14-Fe23463
Date Sampled			Feb 28, 2014	Feb 28, 2014	Feb 28, 2014	Feb 28, 2014
Test/Reference	LOR	Unit				
Dissolved Gases						
Methane*	20	ppm	< 20	< 20	< 20	< 20

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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram
ug/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Dissolved Gases							
Methane*	ppm	< 20			20	Pass	
LCS - % Recovery							
Dissolved Gases							
Methane*	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Dissolved Gases				Result 1					
Methane*	M14-Fe23461	CP	%	80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Dissolved Gases				Result 1	Result 2	RPD			
Methane*	M14-Fe23461	CP	ppm	< 20	< 20	<1	30%	Pass	

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Comments

Sampling has been performed by Eurofins | mgt personnel - Eurofins | mgt is NATA accredited for the collection of water samples in accordance with AS 5667, Victorian EPA Publication 441 & Melbourne Water Publication - Sampling & analysis of Trade Wastes.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Authorised By

Peter Richardson	Client Services
Carroll Lee	Senior Analyst-Volatile (VIC)

Glenn Jackson
Laboratory Manager

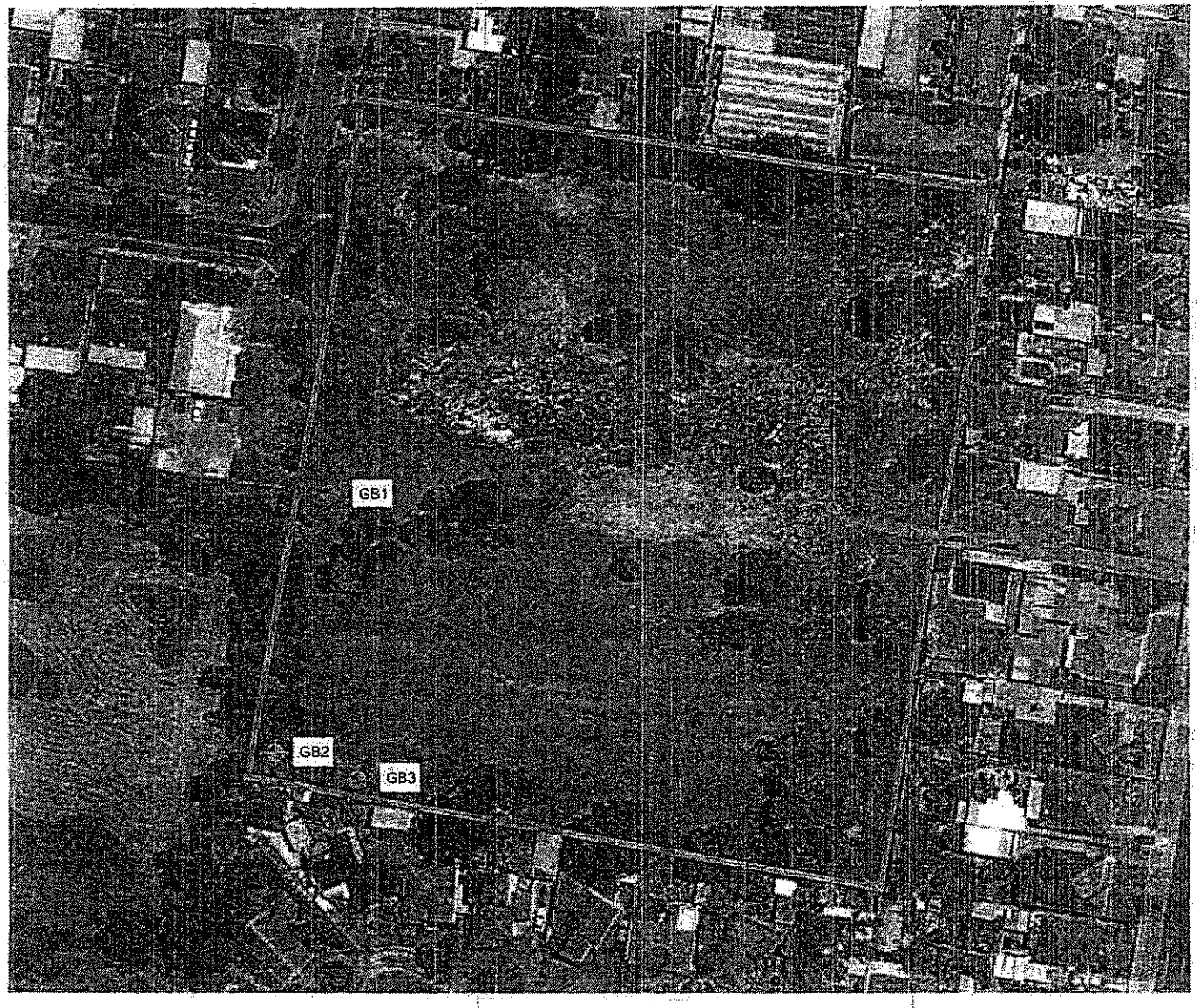
- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

APPENDIX 4 –

Site Map & Gas Bore Logs



prensa

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P: (03) 9509 0100
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www.prensa.com.au
admin@prensa.com.au

Client:
Department of Treasury and Finance

Project:
Landfill Gas Assessment

Address:
10 Alvina Street, Oakleigh South

Drawing Title:
Clayton West Landfill Gas Bore Locations

Job No.: 13991 | Client No.: 00003

Scale: 1:500 (A3) Metres

Legend

- Landfill Gas Bore
- Site Boundary

Image Source: Google Earth Pro Viewed: 17 Feb 2014

Note: All locations are approximate

Drawn by:	Date:	Checked by:	Date:
SPF	17/02/14	HAB	17/02/14

File name:	Figure number:	Revision:
13991 LFG Bore Location	1	A

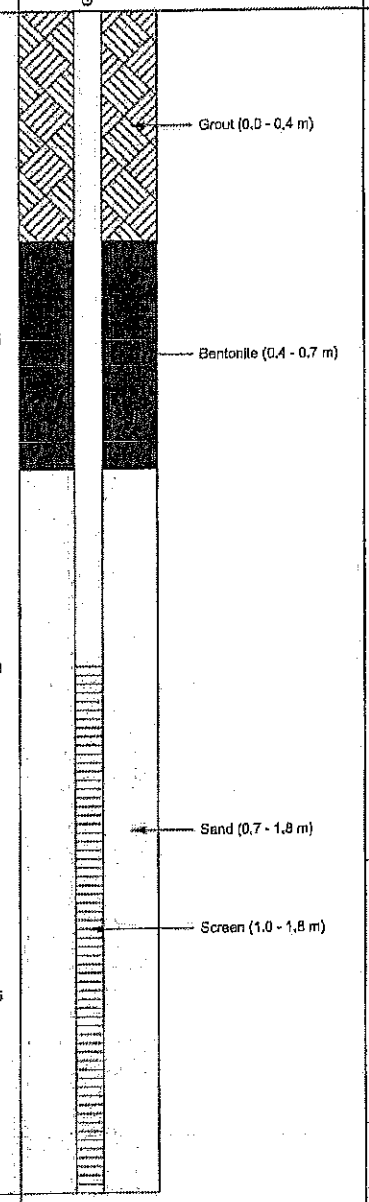
Borehole Log - GB1

prensa

Sheet: 1 of 1

Client: Department of Treasury and Finance **Job Number:** 13991 **Site Location:** 10 Alvina Street, Oakleigh South **Job Type:** Landfill Gas Investigation **Date:** 14/02/2014 **License Number:**	**Driller:** Star Drilling **Rig:** Drill Rig **Depth of Hole:** 1.8 m **Screened Depth:** 1.0 - 1.8 m **Casing/Screen Diameter:** 50 mm **Top of Casing (m AHD):**	**Standing Water Level:** **Easting:** **Northing:** **Coord. Sys.:** **Drawn By:** SPF **Approved By:** SSB

Comment:
Landfill gas bore



Method	Graphic Log	Subsurface Profile	Sample	PID
Hand auger		FILL: SAND (0 - 0.3 m) Brown, loose, dry, zero plasticity, coarse grained sand, organic matter, dark grey silty clay pockets, angular bluestone gravel fragments.		
		FILL: SAND (0.3 - 0.5 m) Light grey, loose, dry, zero plasticity, brown clay pockets.		
		NATURAL: SAND (0.5 - 0.6 m) Dark grey to black, loose, dry, zero plasticity, coarse grained, minor quartz fragments.		
		NATURAL: SAND (0.6 - 1.3 m) Light grey, loose, dry, zero plasticity, homogeneous.		
Solid auger		NATURAL: SAND (1.3 - 1.7 m) Light brown, loose, dry, zero plasticity.		
		NATURAL: SAND (1.7 - 1.8 m) Yellow, dense, slightly moist, zero plasticity, coarse grained.		
		End of borehole at 1.8 m at target depth in natural.		

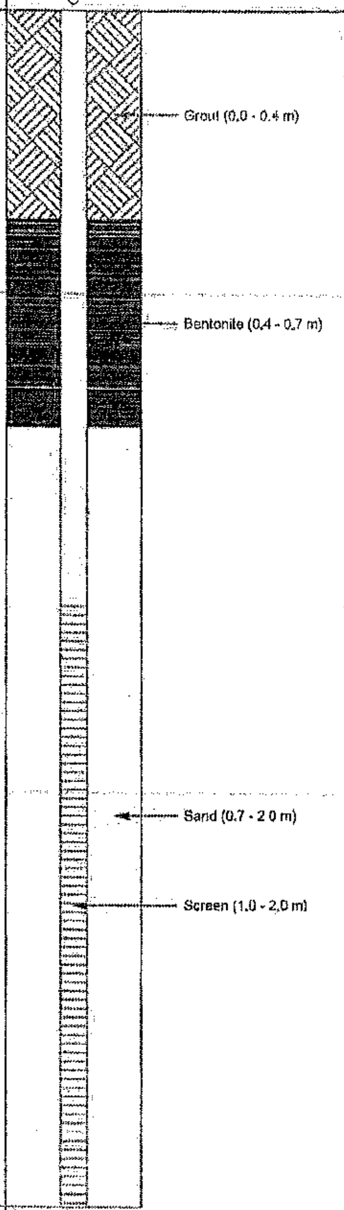
Borehole Log - GB2

Sheet: 1 of 1

prensa

Client: Department of Treasury and Finance	**Driller:** Star Drilling	**Standing Water Level:**
Job Number: 13991	**Rig:** Drill Rig	**Easting:**
Site Location: 10 Alvina Street, Oakleigh South	**Depth of Hole:** 2.0 m	**Northing:**
Job Type: Landfill Gas Investigation	**Screened Depth:** 1.0 - 2.0 m	**Coord. Sys.:**
Date: 14/02/2014	**Casing/Screen Diameter:** 50 mm	**Drawn By:** SPF
License Number:	**Top of Casing (m AHD):**	**Approved By:** SSB

Comment:
Landfill gas bore



Depth (m)	Method	Graphic Log	Subsurface Profile	Sample	PID
0.0 - 0.3	Hand auger		FILL: SAND (0 - 0.3 m) Brown, loose, dry, zero plasticity, coarse grained, dark grey silty clay pockets.		
0.3 - 0.5	Hand auger		FILL: SAND (0.3 - 0.5 m) Light grey, loose, dry, zero plasticity, brown clay pockets, minor concrete fragments.		
0.5 - 0.6	Hand auger		NATURAL: SAND (0.5 - 0.6 m) Black, dark grey, loose, dry, zero plasticity, coarse grained sand.		
0.6 - 1.3	Hand auger (to 1.0) / Solid auger		NATURAL: SAND (0.6 -1.3 m) Light grey, loose, dry, zero plasticity.		
1.3 - 1.6	Solid auger		NATURAL: SAND (1.3 - 1.6 m) Light brown, loose, dry, zero plasticity.		
1.6 - 2.0	Solid auger		NATURAL: SAND (1.6 - 2.0 m) Yellow, dense, slightly moist, zero plasticity, coarse grained.		
2.0			End of borehole at 2.0 m at target depth in natural.		

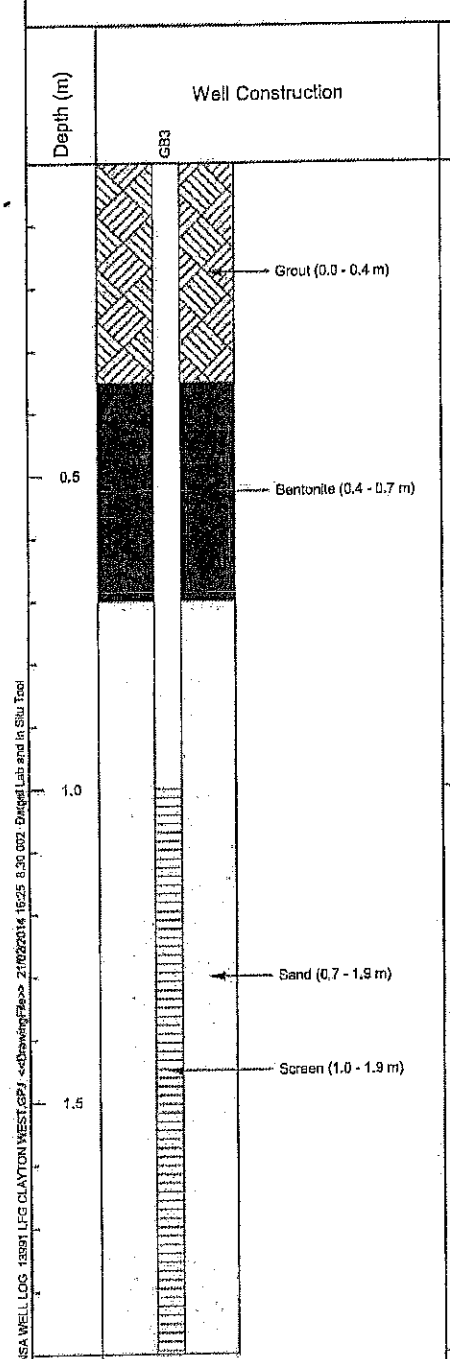
Borehole Log - GB3

prensa

Sheet: 1 of 1

Client: Department of Treasury and Finance **Job Number:** 13991 **Site Location:** 10 Alvina Street, Oakleigh South **Job Type:** Landfill Gas Investigation **Date:** 14/02/2014 **License Number:**	**Driller:** Star Drilling **Rig:** Drill Rig **Depth of Hole:** 1.9 m **Screened Depth:** 1.0 - 1.9 m **Casing/Screen Diameter:** 50 mm **Top of Casing (m AHD):**	**Standing Water Level:** **Easting:** **Northing:** **Coord. Sys.:** **Drawn By:** SPF **Approved By:** SSB

Comment:
Landfill gas bore



Method	Graphic Log	Subsurface Profile	Sample	PID
Hand auger		NATURAL: SAND (0 - 0.8 m) Dark grey to black, loose, dry, zero plasticity, homogeneous.		
		NATURAL: SAND (0.8 -1.5 m) Light grey, loose, dry, zero plasticity.		
Solid auger		NATURAL: SAND (1.5 - 1.9 m) Yellow, dense, slightly moist, zero plasticity, coarse grained.		
		End of borehole at 1.9 m at target depth in natural.		

APPENDIX 5 –

Photos of Sample Setup

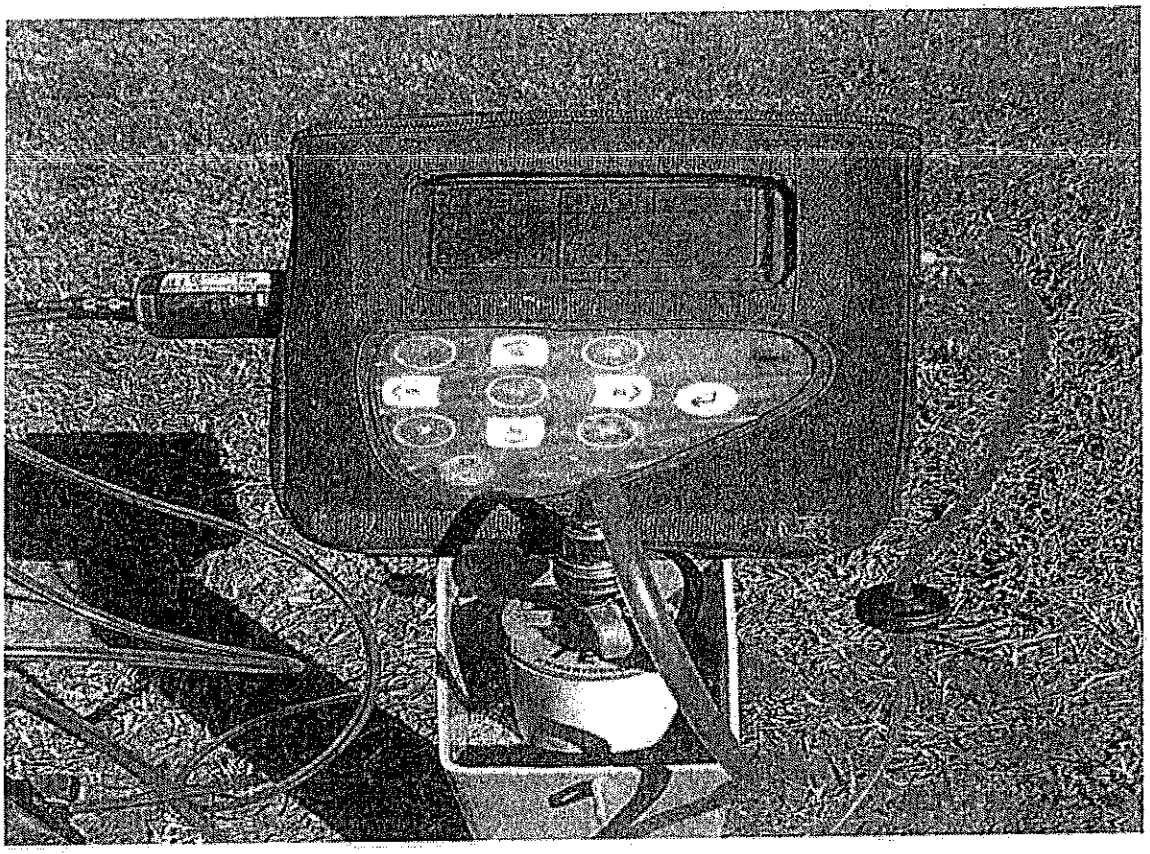


Photo 1 : Sampling with Landfill Gas Analyser

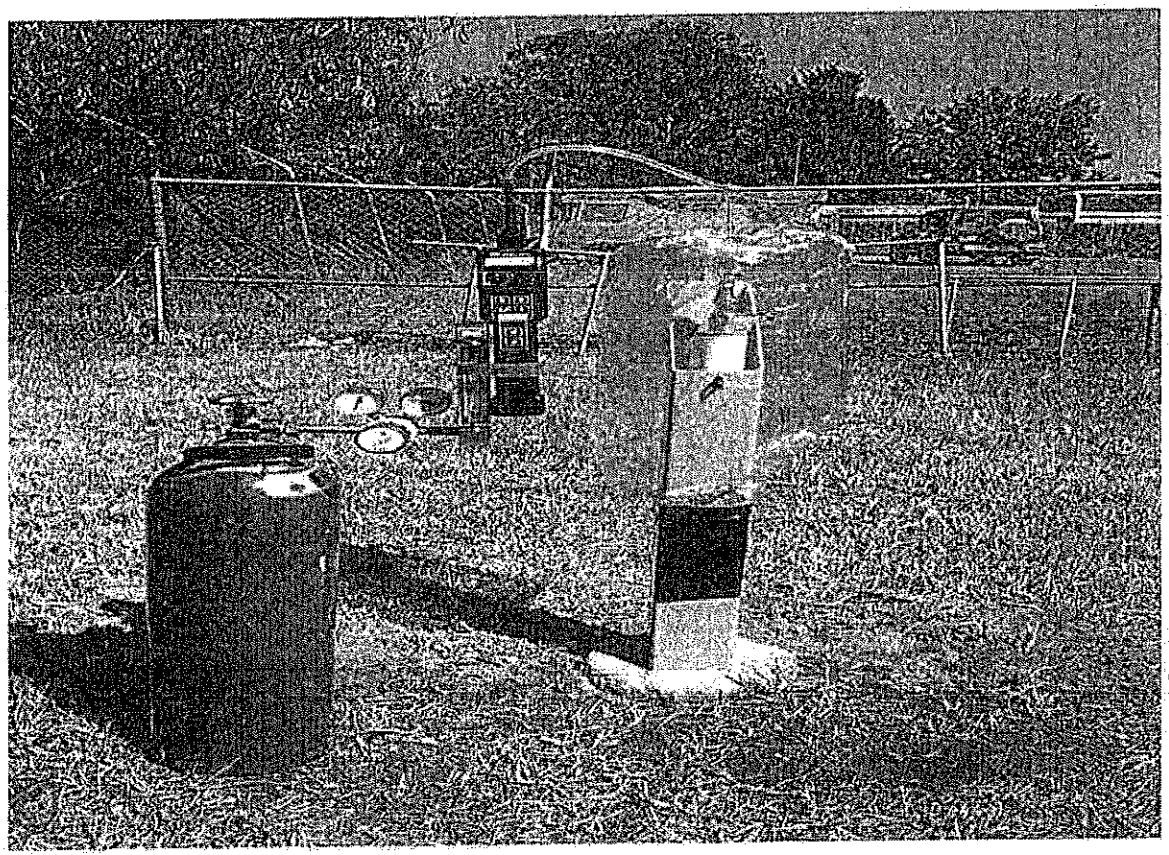


Photo 2 : Leak Testing of Gas Bore

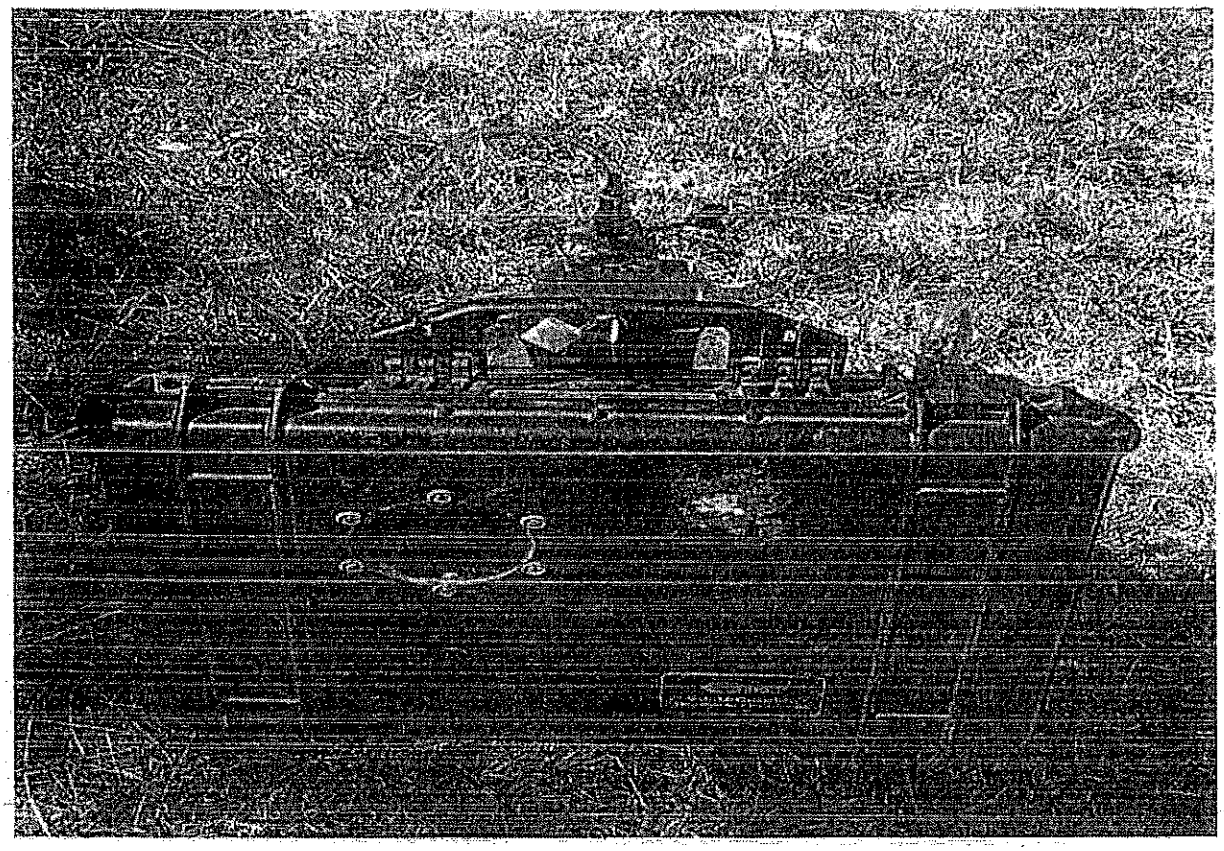


Photo 3 : Lab Confirmation Methane Gas Bag Sampling

APPENDIX 6 –

Instrumentation Calibration Data

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GA 2000 Serial Number: GA 11503/09 Calibrated by : SC

Calibration Date: 28/2/14 Calibration Time: 1055

Operations Check

In Line Filter Check ☑ Cleaned/Checked ☑ Battery Status 100 %

Calibration Gas Used

N2 - Lot Number: 1274596 Cylinder Number: 24

CO2 / CH4 - Lot Number: 1237007 Cylinder Number: 30

H2S / CO / CH4 / O2 - Lot Number: 1278129 Cylinder Number: 2

Calibrating Gas	Cal Value	Reading		Span Required	Reading	Pass
CH4	60% vol	60.4 %		Y	60.0 %	☑
CH4 - check Only	2.5% vol	2.5 %		N	— %	☑
H2S	25 ppm	26 ppm		Y	25 ppm	☑
O2	18.0% vol	18.1 %		Y	18.0 %	☑
CO	100 ppm	102 ppm		Y	100 ppm	☑
CO2	40% vol	40.4 %		Y	40.0 %	☑

Calibrating Gas	Cal Value	Reading		Span Required	Reading	Pass
CH4	0.0% vol	0.0 %		N	— %	☑
H2S	0 ppm	0 ppm		N	— ppm	☑
O2	0.0% vol	0.0 %		N	— %	☑
CO	0 ppm	1 ppm		Y	0 ppm	☑
CO2	0.0% vol	0.0 %		N	— %	☑

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The world leader in serving science

RENTALS

EQUIPMENT CERTIFICATION REPORT

GASCHECK 5000IS

This GasCheck 5000is Instrument has been performance checked as follows:

☑ Check fully charged
☑ Performance check against He

Date: 26/2/2014

Checked by: P.D.

Signature: P.D.

Please check that the following items are received and that all items are cleaned before return.
A minimum $30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Rec'd	Returned	Description
☑	☐	☐	GasCheck 5000is Unit with short probe and nozzle fitted
☑	☐	☐	GasCheck 5000is Unit Operation check / Battery Voltage, (min 5.0V) 5.3 V
☑	☐	☐	Spare battery holder with Spare Alkaline batteries, (min 5.0V) 6.0 V
☑	☐	☐	GasCheckis Manual
☑	☐	☐	Quick Guide
☑	☐	☐	Long Probe
☑	☐	☐	Box-Spanner
☑	☐	☐	Screwdriver
☑	☐	☐	Calibration Certificate – Due: 21 / 01 / 15
☑	☐	☐	Carry Case

Processor Signature/Initials: P.D.

Quote Reference	CM000526	Condition on return
Customer Ref	00146580	
Equipment ID	GC 5000MA	
Equipment serial no.		
Return Date	/ /	
Return Time		

Phone: (Free Call) 1300 735 295 | Fax: (Free Call) 1800 675 123 | Email: RentalsAU@Thermofisher.com

Melbourne Branch 5 Caribbean Drive Scoresby 3179

Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113

Adelaide Branch 27 Beulah Road, Norwood South Australia 5067

Brisbane Branch Unit 2/6 Rose St Newstead 4006

Perth Branch 121 Bellegrini Ave Malaga WA 6090