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Report Type:
Site Validation Report

Project Address:
Jordan Springs Boulevard, Jordan Springs, NSW
Lot 3991 in DP1190132

Client Name:
LLRL Management Services Pty Ltd as trustee of LLRL Management Services Trust

11 July 2018 2018
Report No: 7161-ER-1-6

We give you the right information to make the right decisions

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DOCUMENT CONTROL

Revision	Date	Author	Reviewer
Rev 0	11 July 2018	Jacob Walker / Craig Cowper	Craig Cowper

EXECUTIVE SUMMARY

Alliance Geotechnical Pty Ltd (AG) was engaged by LLRL Management Services Pty Ltd as trustee of LLRL Management Services Trust to prepare a site validation report (SVR) for a parcel of land located at Jordan Springs Boulevard, Jordan Springs, NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

AG has the following project appreciation:

- the site is defined as Lot 3991 in DP1190132;
- the site is proposed for a medium density residential land use development;
- the site was the subject of a site audit statement in 1999, which confirmed the site was suitable for a residential land use setting, subject to implementation of a contamination management plan (CMP);
- contamination assessments undertake by AG in 2018 identified 10 stockpiles on site, that presented a potentially unacceptable human health exposure risk, in the context of a residential land use setting;
- the stockpiles are to be removed (by others) from site;
- a validation report is required to assess the contamination status of the site following removal of the stockpiles, for inclusion with the development application to Council.

The objectives of this project are to:

- assess the potential for contamination to be present following removal of the stockpiles;
- provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and
- provide recommendations for further investigation, management and/or remediation (if warranted).

Alliance Geotechnical undertook the following scope of works to address the project objective:

- desktop review;
- fieldwork;
- laboratory analysis; and
- data assessment and reporting.

Stockpile removal works were undertaken on 5, 6 and 9 July 2018. Stockpiles SP02 and SP03 to SP11 were excavated using a hydraulic excavator and removed for offsite disposal. The stockpiles were removed down their respective bases.

A visual inspection and soil validation samples were collected from relevant stockpile removal locations. Soil samples were subjected to laboratory analysis for the relevant contaminants of potential concern.

The concentrations of naphthalene, benzo(a)pyrene TEQ and total PAH in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

There was no visual evidence observed of potential asbestos containing materials on the surface of the footprints of former stockpiles SP02 (AEC02) and SP03 to SP11 (AEC03).

Records provided by the client indicate that 152.88 tonnes of soil were reported as being removed for offsite.

Based on a review of the historical contamination assessment reports provided, observations made on site by AG, and an assessment of validation laboratory analytical data in the context of the proposed low density residential land use setting, AG makes the following conclusions:

- the contamination status of the broader site is considered unlikely to have materially changed since the issue of a site audit statement in 1999;
- stockpiles SP02 and SP03 to SP11 have been adequately removed from site;
- the site is suitable for the proposed land use setting (in the context of land contamination), subject to ongoing implementation of the URS 2008, 'Contamination Management Plan, Western Precinct Development Phase' dated 7 July 2008, ref: 4321 7287, as recommended in the site audit statement issued for the site.

This report must be read in conjunction with the limitations set out in **Section 12.**

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

LIST OF ABBREVIATIONS

A list of the common abbreviations used throughout this report is provided below:

ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
AG	Alliance Geotechnical Pty Ltd
AHD	Australian Height Datum
BTEX	Benzene, toluene, ethyl benzene, xylenes
COPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
DP	Deposited Plan
DSI	Detailed Site Investigation
EPA	Environment Protection Authority
LOR	Limit of reporting
m	metres
m^2	square metres
m bgs	metres below ground surface
mg/kg	milligrams per kilogram
NSW	New South Wales
OCP	Organochlorine pesticides
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
RPD	Relative percentage difference
SVR	Site Validation Report
TRH	Total recoverable hydrocarbons
UCL	Upper Confidence Limit

1. INTRODUCTION

1.1. Background

Alliance Geotechnical Pty Ltd (AG) was engaged by LLRL Management Services Pty Ltd as trustee of LLRL Management Services Trust to prepare a site validation report (SVR) for a parcel of land located at Jordan Springs Boulevard, Jordan Springs, NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

AG has the following project appreciation:

- the site is defined as Lot 3991 in DP1190132;
- the site is proposed for a medium density residential land use development;
- the site was the subject of a site audit statement in 1999, which confirmed the site was suitable for a residential land use setting, subject to implementation of a contamination management plan (CMP);
- contamination assessments undertake by AG in 2018 identified 10 stockpiles on site, that presented a potentially unacceptable human health exposure risk, in the context of a residential land use setting;
- the stockpiles are to be removed (by others) from site;
- a validation report is required to assess the contamination status of the site following removal of the stockpiles, for inclusion with the development application to Council.

1.2. Objectives

The objectives of this project are to:

- assess the potential for contamination to be present following removal of the stockpiles;
- provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and
- provide recommendations for further investigation, management and/or remediation (if warranted).

1.3. Scope of Work

Alliance Geotechnical undertook the following scope of works to address the project objective:

- desktop review;
- fieldwork;
- laboratory analysis; and
- data assessment and reporting.

2. SITE IDENTIFICATION

The site is identified as Lot 3991 in DP1190132.

The approximate geographic coordinates of the middle of the site, inferred from Google Earth were 33°43'45" S and 150°43'23" E.

The locality of the site is set out in **Figure 1**.

The general layout and boundary of the site is set out in **Figure 2**.

The site covers an area of approximately 3.633 hectares.

A copy of a detail and level survey is presented in **Appendix A**.

3. GEOLOGY, ACID SULPHATE SOILS, TOPOGRAPHY AND HYDROGEOLOGY

3.1. Geology

A review of the Sydney 1:100,000 Geological Series Sheet 9130 (Edition 1) 1983, indicated that the site is likely to be underlain by Middle Triassic, Wianamatta Group, Bringelly Shale, defined as shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff.

3.2. Acid Sulphate Soils

The Australian Soil Resource Information System website (http://www.asris.csiro.au/mapping/viewer.htm) indicates that the site is in an area mapped as 'Extremely Low Probability / Low Confidence', with respect to acid sulfate soils.

Further assessment of acid sulphate soils in the context of this project is considered by AG as not warranted.

3.3. Topography

The site topography was generally flat, with some minor localised undulations, and some south east facing slopes.

A detail and level survey indicated that the site surface was located at an elevation of approximately 42m Australian Height Datum (AHD) in the north west, to approximately 35m AHD in the south east.

3.4. Hydrogeology

Surface water courses proximal to the site include an unnamed dam/lake located adjacent to central western boundary of the site, and a small dam located adjacent to the eastern boundary of the site. The Penrith Lakes precinct is located approximately 2.5km to the west of the site, and the Nepean River is located approximately 4km to the west of the site. South Creek is located approximately 3.6km to the east of the site, with minor tributaries to South Creek located between the site and South Creek.

4. PREVIOUS CONTAMINATION ASSESSMENTS

The following reports were considered during the undertaking of this project:

- URS 2008, 'Contamination Management Plan, Western Precinct Development Phase' dated 7 July 2008, ref: 4321 7287.
- Douglas Partners 2017, 'Site Walkover Contamination Report, Proposed Lots 3989, 3990 and 3991, DP1190132, Jordan Springs, NSW', dated 21 September 2017, ref: 92245.00.
- AG 2018a, 'Supplementary Contamination Assessment, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 20 April 2018, ref: 7161-ER-1-3.
- AG 2018b, 'Stockpile Contamination Assessment, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 17 May 2018, ref: 7161-ER-1-4.
- AG 2018c, 'Waste Classification, Stockpiles SP02 to SP11, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 22 May 2018, ref: 7161-ER-1-5.

A summary of these reports is presented in **Section 4.1 to 4.5**. A copy of URS (2008) and Douglas Partners (2017) is presented in **Appendix C.**

4.1. URS (2008)

The objective of URS (2008) was to provide a framework for identifying and addressing any discovery of chemical contamination or potentially explosive ordnance so as to ensure a safe working environment for workers during development and to avoid unacceptable impact on the nature environment.

URS (2008) was prepared for a parcel of land referred to as the Western Precinct. AG understands the Western Precinct fell within the former Australia Defence Industries (ADI) facility in St Marys.

An assessment by AG of Figure 2 in URS (2008) indicated that the subject site falls within the south western corner of the Western Precinct.

Section 1.2 of URS (2008) noted that the majority of the Western Precinct was assessed by a NSW EPA Accredited Site Auditor (Site Auditor), to pose a negligible risk to the public or the environment with regard to chemical contamination and/or explosive ordnance. A number of site audit statements (SASs) for parcels of land across the Western Precinct were included in Appendix A of URS (2008).

URS (2008) noted that:

- unexpected finds may occur in areas which, although searched extensively, contain remnant materials which were obscured by the local topography, the type of surface cover (e.g. building) or at a depth preventing detection; and
- the Site Auditor considered that, while explosive ordnance may be uncovered during earthworks, it is unlikely that these will present an unacceptable risk provided appropriate procedures for the safe handling and disposal of such material are adopted.

A copy of a Site Audit Statement (SAS), prepared by the Site Auditor (Mr Christopher Kidd of HLA-Envirosciences), dated 7 June 1999, reference CHK001/1 was presented in Appendix A of URS (2008). An assessment of the SAS by AG indicated that the subject site fell within the boundaries of the land that SAS CHK001/1 applied to. AG also found that the SAS certified that land as suitable for residential, including substantial vegetable garden and poultry, residential with minimal, opportunity for soil access including units, day care centre, preschool, primary schools, secondary school, park, recreational open space, playing field and commercial / industrial land use settings, subject to a number of conditions, including:

- the exclusion of specific parcels of land, as marked on the plan attached to the SAS; and
- an appropriate management plan, including procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks, being lodged prior to the commencement of development earthworks.

AG assessed the plan attached to the SAS and considered that:

- the subject site did not appear to fall within the shaded areas excluded from SAS CHK001/1; and
- land located immediately adjacent to the subject site, did not appear to fall within the shaded areas excluded from SAS CHK001/1.

4.2. Douglas Partners (2017)

The objective of Douglas Partners (2017) was to identify additional activities or sources that have occurred/appeared on site since the sale of the property in June 2013.

The scope of work undertaken to address the project objective included a document review and site walkover.

Douglas Partners (2017) reported the following conclusions, considered relevant to the subject Lot 3990 and Lot 3991:

- Limited review of historical aerial imagery and site walkover completed on 19 September 2017, identified the following potential sources appearing onsite in recent years that have the potential for contamination of the site:
    - Five small stockpiles or soil observed on the unsealed area immediately adjacent to the south eastern corner of the asphalt carpark on Lot 3991. Given the small volume (15-20m^3) of the stockpiles, likely origins from bulk earthworks associated with the nearby carpark and observed contents, the soil within the stockpiles poses a low contamination risk to the site.

Douglas Partners (2017) recommended that:

- further investigations be completed within the soil stockpiles on Lot 3991, to confirm the absence/presence of contaminants of potential concern associated with fill of an unknown origin; and

the recommended further assessment should build on the information presented in Douglas Partners (2017) with reference to NEPC (1999) and should include intrusive investigation, sampling and analysis.

4.3. AG (2018a)

The objectives of this project were to:

- assess the potential for contamination to be present on the site as a result of past and current land use activities;
- provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting;
- provide recommendations for further investigation, management and/or remediation (if warranted).

The scope of works undertaken to address the project objectives, included:

- a limited desktop review;
- a site walkover;
- limited soil sampling and laboratory analysis; and
- data assessment and reporting.

Based on AG's assessment of the desktop review information, fieldwork data and laboratory analytical data, in the context of the assessment objectives and current commercial / industrial land use setting, AG makes the following conclusions:

- the contamination status of the broader site is considered unlikely to have materially changed since the issue of a site audit statement in 1999;
- the concentrations of identified contaminants of potential concern in stockpile SP01 and SP02 are considered unlikely to present an unacceptable direct contact human health exposure risk;
- the concentrations of identified contaminants of potential concern in stockpile SP01 and SP02 are considered unlikely to present an unacceptable inhalation / vapour intrusion human health exposure risk;
- stockpile SP01 (in AEC01) would be suitable (in the context of human health and land contamination) for beneficial reuse on site;
- the estimated concentration of bonded asbestos in soil detected in AEC02 (stockpile SP02), may present an unacceptable human health exposure risk and unacceptable aesthetics risk;
- chemical contaminants of concern, asbestos fines and friable asbestos in AEC03 (stockpiles SP03, SP04, SP05, SP06, SP07, SP08, SP09, SP10 and SP11) require further investigation, to assess whether they may present an unacceptable human health exposure risk;
- the site could be made suitable for the proposed land use setting (in the context of land contamination), subject to:
    - management and/or remediation of bonded asbestos in stockpile SP02;
    - further assessment, management and/or remediation of potential unacceptable human health exposure risks in SP03, SP04, SP05, SP06, SP07, SP08, SP09, SP10 and SP11;
    - ongoing implementation of the URS 2008, 'Contamination Management Plan, Western Precinct Development Phase' dated 7 July 2008, ref: 4321 7287, as recommended in the site audit statement issued for the sites; and

Further assessment, management and/or remediation planning works should be undertaken by a suitably experienced environmental consultant.

4.4. AG (2018b)

The objectives of this project were to:

- assess the nature and extent of contamination to be present in nine stockpiles on the site;
- provide advice on whether the stockpiles be suitable (in the context human health exposure risks) for the proposed land use setting;
- provide recommendations for further investigation, management and/or remediation (if warranted).

The scope of works undertaken to address the project objectives, included:

- a limited desktop review;
- a site walkover;
- stockpile soil sampling and laboratory analysis; and
- data assessment and reporting.

Based on AG's assessment of the desktop review information, fieldwork data and laboratory analytical data, in the context of the assessment objectives and current commercial / industrial land use setting, AG made the following conclusions:

- the concentrations of identified contaminants of potential concern in stockpile SP03 to SP11 are considered unlikely to present an unacceptable direct contact human health exposure risk, with the exception of benzo(a)pyrene TEQ in stockpiles SP03, SP06, SP07, SP08, SP09, SP10 and SP11;

- the concentrations of identified contaminants of potential concern in stockpiles SP03 to SP11 are considered unlikely to present an unacceptable inhalation / vapour intrusion human health exposure risk;

- the concentrations of bonded asbestos in soil in stockpiles SP03 to SP11 may present an unacceptable human health exposure risk;

- the visible presence of asbestos containing materials in SP03 to SP11 may present an unacceptable aesthetics risk; and

- management and/or remediation of stockpiles SP03 to SP11 is required.

Based on these conclusions, AG made the following recommendations:

- stockpiles SP03, SP06, SP07, SP08, SP09, SP10 and SP11 should be excavated, transported and disposed of to a suitably licensed landfill facility. The excavation and transportation works should be undertaken by a suitably licensed and experienced contractor, under an asbestos removal control plan;

- stockpiles SP04 and SP05 could be either remediated to remove the identified bonded asbestos human health and aesthetics risks, or excavated, transported and disposed of to a suitably licensed landfill facility. The remediation and/or excavation and transportation works should be undertaken by a suitably licensed and experienced contractor, under an asbestos removal control plan;

- a waste classification should be prepared for materials proposed for offsite disposal, with reference to relevant NSW EPA waste classification guidelines. The waste classification should be prepared by a suitably experienced environmental consultant; and

a validation report should be prepared following removal and/or remedial works, that assesses whether the identified human health and aesthetics risks have been appropriate managed and/or remediated. The validation report should be prepared by a suitably experienced environmental consultant.

4.5. AG (2018c)

The objective of AG (2018c) was to assess the waste classification of stockpiles SP02 to SP11.

Based on AG's assessment of fieldwork observations and laboratory analytical data, and as of the date of this report, the material assessed was classified as GENERAL SOLID WASTE non-putrescible, managed as SPECIAL WASTE (asbestos).

5. CONCEPTUAL SITE MODEL

5.1. Areas of Environmental Concern and Contaminants of Potential Concern

The site history data collected and site walkover observations made were assessed within the objectives of this investigation and in the context of the proposed development works. That assessment identified areas of environmental concern (AEC) and contaminants of potential concern (COPC) which have the potential to be present on site. The AEC identified are presented in attached **Figure 3** and associated COPC are presented in **Table 5.1**.

Table 5.1: AEC and COPC

ID	Areas of Environmental Concern	Land Use Activity	Contaminants of Potential Concern
AEC02	Stockpile located in north eastern portion (<20m^3)	Uncontrolled filling	Asbestos
AEC03	Nine stockpiles located adjacent to western boundary (~10m^3 each)	Uncontrolled filling	Benzo(a)pyrene TEQ and asbestos

5.2. Land Use Setting

AG understands that the proposed development works includes a low density residential development.

Based on the proposed development works and guidance provided in Section 2.2 of NEPC (1999a), AG considers it reasonable to adopt the 'HIL A – residential with accessible soils' land use setting, for the purpose of assessing land contamination exposure risks.

5.3. Direct Contact – Human Health

The proposed land use setting is likely to include accessible soils. In these areas, it is considered that a direct contact exposure pathway may be complete.

5.4. Inhalation / Vapour Intrusion – Human Health

In order for a potentially unacceptable inhalation / vapour intrusion human health exposure risk to exist, a primary vapour source (e.g. underground storage tank) or secondary vapour source (e.g. significantly contaminated soil or groundwater).

The historical evidence reviewed indicated the concentrations of identified volatile contaminants of potential concern in the stockpiles did not present an unacceptable inhalation / vapour intrusion human health exposure risk, based on the proposed land use setting.

Further assessment of this exposure pathway is considered not warranted.

5.5. Management Limits for Petroleum Hydrocarbon Compounds

NEPC (1999a) notes that there are a number of policy considerations which reflect the nature and properties of petroleum hydrocarbons:

- formation of observable light non-aqueous phase liquids (LNAPL);
- fire and explosive hazards; and
- effects on buried infrastructure (e.g. penetration of or damage to, in-ground services by hydrocarbons).

NEPC (1999a) includes 'management limits' to avoid or minimise these potential effects. Application of the management limits requires consideration of site-specific factors such as the depth of building basements and services and depth to groundwater, to determine the maximum depth to which the limits should apply. NEPC (1999a) also notes that management limits may have less relevance at operating industrial sites which have no or limited sensitive receptors in the area of potential impact, and when management limits are exceeded, further site-specific assessment and management may enable any identified risk to be addressed.

Given the nature of the identified contaminants of potential concern at the site, further assessment against these management limits is considered not warranted.

5.6. Aesthetics – Human Health

Section 3.6.3 of NEPC (1999a) advises that there are no specific numeric aesthetic guidelines, however site assessment requires a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity.

Further assessment of aesthetics (in the context of visible fragments of asbestos containing materials) is considered warranted.

5.7. Terrestrial Ecosystems

NEPC (1999) requires a pragmatic risk-based approach should be taken in applying ecological investigation and screening levels in residential and commercial / industrial land use settings.

It is noted that:

- vegetation on site and on adjacent properties did not display evidence of significant or widespread phytotoxic impact (i.e. plant stress or dieback); and
- the stockpiles are being removed from site.

Further assessment of unacceptable risk to terrestrial ecosystems is considered not warranted.

6. DATA QUALITY OBJECTIVES

Appendix B of NEPC (1999b) provides guidance on the development of data quality objectives (DQO) using a seven-step process.

The DQO for this project are set out in **Sections 6.1** to **6.7** of this report.

6.1. Step 1: State the problem

The first step involves summarising the contamination problem that requires new environmental data and identifying resources available to solve the problem.

The objectives of this project are to:

- assess the potential for contamination to be present following removal of the stockpiles;
- provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and
- provide recommendations for further investigation, management and/or remediation (if warranted).

The assessment is being undertaken because:

- advice is required on the suitability of the site in the context of land contamination and human health exposure risks) for the proposed land use setting.

The project team identified for this project is comprised primarily of suitably experienced environmental consultants from Alliance Geotechnical Pty Ltd.

The regulatory authorities identified for this project include NSW EPA and the local Council.

6.2. Step 2: Identify the decision/goal of the study

The second step involves identifying decisions that need to be made about the contamination problem and the new environmental data required to make them.

The decisions that need to be made during this project include:

- Is the environmental data collected for the project, suitable for assessing relevant human health exposure risks?
- Do the concentrations of identified contaminants of potential concern (COPC) present an unacceptable exposure risk to identified receptors, for the proposed land use setting?
- Are the stockpiles suitable for the proposed land use setting, in the context of human health exposure risks?

6.3. Step 3: Identify the information inputs

The third step involves identifying the information needed to support decisions and whether new environmental data will be needed.

The inputs required to make the decisions set out in **Section 6.2** for this project, will include:

- the nature and extent of sampling at the site, including both density and distribution;
- samples of relevant site media;
- the measured physical and/or chemical parameters of the site media samples (including field screening and laboratory analysis, where relevant); and
- assessment criteria adopted for each of the media sampled.

Taking into consideration the objectives of this project, and the conceptual site model and land use setting presented in Section 5.2 of this project, the assessment criteria relevant to the proposed land use setting have been adopted for this project.

- Human health direct contact – HILs in Table 1A (1) in NEPC (1999a) and HSLs in Table B4 of Friebel, E & Nadebaum, P (2011);
- Aesthetics – no visible asbestos containing materials observed on the surface of the stockpile removal areas.

6.4. Step 4: Define the boundaries of the study

The fourth step involves specifying the spatial and temporal aspects of the environmental media that the data must represent to support decisions.

The spatial extent of the project will be limited to the stockpile footprints.

The lateral extent that contamination is expected to be distributed across, based on the conceptual site model, is defined by the inferred boundaries of the areas of environmental concern (AEC).

The vertical extent that contamination is expected to be distributed across, based on the conceptual site model and the project scope, is limited to the inferred base of the identified AEC.

The scale of the decisions required will be based on the stockpiles.

The temporal boundaries of the project include

- the project timeframe presented in the AG proposal for this project,
- unacceptable weather conditions at the time of undertaking fieldwork, including rainfall, cold and/or heat;
- access availability of the site (to be defined by the site owner/representative); and
- availability of AG field staff (typically normal daylight working hours, Monday to Friday).

Constraints which may affect the carrying out of this project may include access limitations, presence of above and below ground infrastructure, and hazards creating health and safety risks.

6.5. Step 5: Develop the analytical approach (or decision rule)

The fifth step involves defining the parameter of interest, specifying the action level, and integrating information from Steps 1 to 4 into a single statement that gives a logical basis for choosing between alternative actions.

6.5.1. Rinsate Blanks

One rinsate blank will be collected and scheduled for analysis, for each day of sampling undertaken, if non-disposable sampling equipment was used on that day. The rinsate blank will be analysed for at

least one of the analytes the sample/s collected that day are being scheduled for analysis for (with the exception of asbestos).

6.5.2. Trip Spikes and Trip Blank Samples

One trip spike and trip blank sample will be used and scheduled for analysis, for each day of sampling undertaken, if site samples being collected that day are being analysed for volatile contaminants of concern (typically BTEX and/or TRH C_6-C_{10}).

6.5.3. Field Duplicates

Field duplicates will be collected at a rate of one per twenty (5%) site samples collected. The duplicates collected will be analysed for at least one of the analytes that the parent sample of the duplicate/triplicate is being scheduled for analysis for (with the exception of asbestos).

The relevant percent difference (RPD) of concentrations of relevant analytes, between the parent sample and the duplicate will be calculated.

6.5.4. Laboratory Analysis Quality Assurance / Quality Control

The analytical laboratory QA/QC program will typically include laboratory method blank samples, matrix spike samples, surrogate spike samples, laboratory control samples, and laboratory duplicate samples.

6.5.5. If/Then Decision Rules

AG has adopted the following 'if/then' decision rules for this project:

- If the result of the assessment of field data and laboratory analytical data is considered acceptable, then that field data and laboratory analytical data is suitable for interpretation within the scope of this project; and
- If the field data and laboratory analytical data is within the constraints of the assessment criteria adopted for this project (refer **Section 6.3**), then the contamination exposure risks to identified receptors, are considered acceptable.

In the event the assessment of field data and/or laboratory analytical data results in the data being not suitable for interpretation, then AG will determine if additional data is required to allow interpretation to be undertaken.

In the event that field data and/or laboratory analytical data exceeds the assessment criteria adopted for this project (refer **Section 6.3**), AG will undertake an assessment of the exceedance in the context of the project objectives to determine if additional data is required and whether management and/or remediation is required.

6.6. Step 6: Specify the performance or acceptance criteria

The sixth step involves specifying the decision maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. When assessing contaminated land, there are generally two types of errors in decision making:

- Contamination exposure risks for a specific land use setting are acceptable, when they are not; and

- Contamination exposure risks for a specific land use setting are not acceptable when they are.

AG will mitigate the risk of decision error by:

- Calculation of the 95% upper confidence limit (UCL) statistic to assess the mean concentration of relevant contaminants of potential concern;
- Assignment of fieldwork tasks to suitably experienced AG consulting staff, and suitably experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories;
- Assignment of data interpretation tasks to suitably experienced AG consulting staff and outsourcing to technical experts where required.

AG will also adopt a range of data quality indicators (DQI) to facilitate assessment of the completeness, comparability, representativeness, precision and accuracy (bias).

Completeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Critical locations sampled	Refer **Section 6.7.1**	Critical samples analysed according to DQO	Refer **Section 6.7.6**
Critical samples collected	Refer **Section 6.7.1**	Analytes analysed according to DQO	Refer **Section 6.7.6**
SOPs appropriate and complied with	100%	Appropriate laboratory analytical methods and LORs	Refer **Section 6.7.6**
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	Sample documentation complete	All sample receipt advices, all certificates of analysis
		Sample extraction and holding times complied with	Refer **Section 6.7.7**
Comparability			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Same SOPs used on each occasion	100%	Same analytical methods used by primary laboratory	Refer **Section 6.7.7**
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	Same LORs at primary laboratory	Refer **Section 6.7.7**

Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	Same laboratory for primary sample analysis	All primary samples to SGS Environmental
		Same analytical measurement units	Refer **Section 6.7.7**
Representativeness			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Appropriate media sampled according to DQO	Refer **Section 6.4**	Samples analysed according to DQO	Refer **Section 6.7.6**
Media identified in DQO sampled	Refer **Section 6.4**		
Precision			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Field duplicate RPD	Minimum 5% duplicates No limit for analytical results <10 times LOR 50% for analytical results 10-20 times LOR 30% for analytical results >20 times LOR	Laboratory duplicates	No exceedances of laboratory acceptance criteria
SOPs appropriate and complied with	100%		
Accuracy (bias)			
Field Considerations	**Assessment Criterion**	**Laboratory Considerations**	**Assessment Criterion**
Rinsate blanks	Less than laboratory limit of reporting	Laboratory method blank	No exceedances of laboratory acceptance criteria
Field trip spikes	Recoveries between 60% and 140%	Matrix spike recovery	No exceedances of laboratory acceptance criteria

Field trip blanks	Analyte concentration <LOR	Surrogate spike recovery	No exceedances of laboratory acceptance criteria
		Laboratory control sample recovery	No exceedances of laboratory acceptance criteria

6.7. Step 7: Develop the plan for obtaining data

The seventh step involves identifying the most resource effective sampling and analysis design for generating the data that is required to satisfy the DQOs.

6.7.1. Sampling Point Density and Locations

Section 6.2.1 of NEPC (1999b) states that the number and location or sampling points is based on knowledge of the site and professional judgement. Sampling should be localised to known or potentially contaminated areas identified from knowledge of the site either from site history or an earlier phase of site investigation. Judgemental sampling can be used to investigate sub-surface contamination issues in site assessment. Section 7.5.2 of NEPC (1999b) provides guidance on the quantity of samples to be collected form stockpiles.

Given AG's understanding of site history, and the nature and extent of the identified AEC, AG considers a judgemental sampling strategy is appropriate for this project.

6.7.2. Sampling Methodology

The sampling point methodology presented in **Table 6.7.2** will be used for this assessment. The methodology is based on a range of factors considered relevant to this project, including:

- the identified contaminants of potential concern;
- the suspected laydown mechanisms for those contaminants of concern;
- the suspected likely depth of contamination; and
- site specific constraints which affect the type of sampling techniques suited to the site.

Table 6.7.2 Proposed Sampling Methodology

AEC	Sampling Point ID	Method	Target Depth of Sampling Point (m bgs)
AEC02	Not applicable	Not applicable	Walkover of surface soils in footprint of former stockpile for visual evidence of potential asbestos containing materials. Collect photographic record.
AEC03	SP03-11/01 to SP03-11/09	Grab Sample	Collect up to nine surface soil samples across the footprint of the former stockpiles SP03 to SP11 Walkover of surface soils in footprint of former stockpile for visual evidence of potential asbestos containing materials. Collect photographic record.

6.7.3. Identification, Storage and Handling of Samples

Sample identifiers will be used for each sample collected, based on the sampling point number and the depth the sample was collected from.

Project samples will be stored in laboratory prepared containers (and zip lock bags if collected for asbestos or acid sulfate soil assessment). Filled containers will be placed in insulated container/s with ice.

Samples will be transported to the relevant analytical laboratory, with chain of custody (COC) documentation that includes the following information:

AG project identification number

- Each sample identifier
- Date each sample was collected
- Sample type (e.g. soil or water)
- Container type/s for each sample collected
- Preservation method used for each sample (e.g. ice)
- Analytical requirements for each sample and turnaround times
- Date and time of dispatch and receipt of samples (including signatures)

6.7.4. Decontamination

In the event that non-disposable sampling equipment is used, that equipment will be decontaminated before and in between sampling events, to mitigate potential for cross contamination between samples collected. The decontamination methodology to be adopted for this project will include:

- Washing relevant sampling equipment using potable water with a phosphate free detergent (i.e. Decon 90 or similar) mixed into the water;
- Rinsing the washed non-disposable sampling equipment with distilled or de-ionised water; and
- Air drying as required.

6.7.5. Laboratory Selection

The analytical laboratories used for this project will be NATA accredited for the analysis undertaken.

6.7.6. Laboratory Analytical Schedule

Project samples will be scheduled for NATA accredited laboratory analysis, using a combination of:

- Observations made in the field of the media sampled;
- The contaminants of potential concern (COPC) identified for the area of environmental concern that the sample was collected from.

Based on site history, AG has adopted the laboratory analytical schedule (and associated upper limiting quantities) presented in **Table 6.7.6** for this project.

Table 6.7.6 Laboratory Analytical Schedule

AEC	Sampling Point ID	TRH/BTEX	PAH	OCP	PCB	Metals	Asbestos (0.001%)	Asbestos ID
AEC02	Not applicable	-	-	-	-	-	-	-
AEC03	SP03-11/01 to 09	-	9	-	-	-	-	-

6.7.7. Laboratory Holding Times, Analytical Methods and Limits of Reporting

The laboratory holding times, analytical methods and limits of reporting (LOR) being used for this project, are presented in **Table 6.7.7**.

Table 6.7.7 Laboratory Holding Times, Analytical Methods and Limits of Reporting

Analyte	Holding Time	Analytical Method	Limit of Reporting (mg/kg)
PAH	14 days	USEPA 8270	0.1-0.5

7. STOCKPILE REMOVAL WORKS SUMMARY

7.1. Notifications

AG was provided with a copy of a WorkCover NSW notification summary, addressing the asbestos removal associated with the stockpile removal works. AG notes that the works date in the summary does not align with the dates the work was actually undertaken. AG understands the works were delayed as a result of rainfall adversely affecting truck and plant access/egress at the site.

A copy of the summary is presented in **Appendix D**.

7.2. AEC02 – Removal of Stockpile SP02

Stockpile removal works in AEC02 were undertaken on 5 July 2018 by Multi Services Solutions Pty Ltd (and its sub-contractor, Summerfield Pty Ltd). The stockpiled material was excavated using a hydraulic excavator, loaded into a truck and removed for offsite disposal. Observations made on site by AG indicated that the stockpile had been removed to its base, covering a nominal area of 6.5m by 6m.

The residual surface of the stockpile SP02 foot print was visually assessed by AG on 6 July 2018, by undertaking walkover along north-south and east-west transects across the foot print. No observations were made of potential asbestos containing materials across the surface of the former stockpile SP02 footprint.

Image 7.1.1 View of stockpile SP02 removal footprint, facing south

Image 7.1.2 View of stockpile SP02 removal footprint, facing north

7.3. AEC03 – Removal of Stockpiles SP03 to SP11

Stockpile removal works in AEC02 were undertaken on 6 and 9 July 2018 by Multi Services Solutions Pty Ltd (and its sub-contractor, Summerfield Pty Ltd).

The stockpiled material was excavated using a hydraulic excavator, loaded into a truck and removed for offsite disposal. Observations made on site by AG indicated that the stockpiles had been removed to their bases.

The residual surface of the stockpiles SP03 to SP11 foot prints were visually assessed by AG on 9 July 2018, by undertaking walkover along north-south and east-west transects across the stockpile foot prints. No observations were made of potential asbestos containing materials across the surface of the former stockpile SP03 to SP11 footprints.

Nine soil validation samples (SP03-11/01 to SP03-11/09) were collected from across the remediation surface of the site. The locations of the sampling points are presented in **Figure 4.**

Image 7.1.2 View of stockpile SP03-SP11 removal footprint, facing south

Image 7.1.2 View of stockpile SP02 removal footprint, facing north

7.4. Waste Disposal

Records provided by Multi Services Solutions and its sub-contractor, Summerfield Pty Ltd) that 152.88 tonnes of soil were reported as being removed for offsite disposal during stockpile removal works, as 'contaminated asbestos soil'. Waste disposal records indicate that the waste was transported to the Elizabeth Drive Waste Management Centre at 1725 Elizabeth Drive, Kemps Creek, NSW.

A copy of the waste tracking records is presented in **Appendix A**.

8. LABORATORY

The samples collected were transported to the analytical laboratory, using chain of custody (COC) protocols. A selection of these samples was scheduled for analysis, with reference to the relevant COPC identified for the AEC that the samples were collected from.

A copy of the analytical laboratory certificates of analysis, is presented in **Appendix B**.

The sample analytical results were tabulated and presented in the attached **Table LAR1**

9. DATA QUALITY INDICATOR ASSESSMENT

9.1. Completeness

An assessment of the completeness of data collected was undertaken, and the results presented in **Table 9.1**.

Table 9.1 Completeness DQI

Field Considerations	Target	Actual	Comment
Critical locations sampled	9	9	Performance against indicator considered acceptable.
Critical samples collected	9	9	Performance against indicator considered acceptable.
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	All sampling point logs, calibration logs and chain of custody forms	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Critical samples analysed according to DQO	9	100%	Performance against indicator considered acceptable.
Analytes analysed according to DQO	100%	100%	Performance against indicator considered acceptable.
Appropriate laboratory analytical methods and LORs	100%	100%	Performance against indicator considered acceptable.
Sample documentation complete	All sample receipt advices, all certificates of analysis	100%	Performance against indicator considered acceptable.
Sample extraction and holding times complied with	100%	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

9.2. Comparability

An assessment of the comparability of data collected was undertaken, and the results presented in **Table 9.2**.

Table 9.2 Comparability DQI

Field Considerations	Target	Actual	Comment
Same SOPs used on each occasion	100%	100%	Performance against indicator considered acceptable.
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	100%	Performance against indicator considered acceptable.
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Same analytical methods used by primary laboratory	100%	100%	Performance against indicator considered acceptable.
Same LORs at primary laboratory	100%	100%	Performance against indicator considered acceptable.
Same laboratory for primary sample analysis	All primary samples to SGS Environmental	100%	Performance against indicator considered acceptable.
Same analytical measurement units	100%	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately comparable.

9.3. Representativeness

An assessment of the representativeness of data collected was undertaken, and the results presented in **Table 9.3**.

Table 9.3 Representativeness DQI

Field Considerations	Target	Actual	Comment
Appropriate media sampled according to DQO	100%	100%	Performance against indicator considered acceptable.
Media identified in DQO sampled	100%	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Samples analysed according to DQO	100%	Refer comments	Performance against indicator considered acceptable.

The data collected is considered to be adequately representative within the objectives and constraints of the project.

9.4. Precision

An assessment of the precision of data collected was undertaken, and the results presented in **Table 9.4**.

Table 9.4 Precision DQI

Field Considerations	Target	Actual	Comment
Field duplicate RPD	Minimum 5% duplicates	11% duplicates	Performance against indicator considered acceptable.
	No limit for analytical results <10 times LOR	Nil	
	50% for analytical results 10-20 times LOR	Nil	
	30% for analytical results >20 times LOR	Nil	
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Laboratory duplicates	No exceedances of laboratory acceptance criteria	Nil	RPD failed acceptance criteria due to sample heterogeneity.
			Performance against indicator considered acceptable.

The data collected is considered to be adequately precise.

9.5. Accuracy

An assessment of the precision of data collected was undertaken, and the results presented in **Table 9.5**.

Table 9.5 Accuracy DQI

Field Considerations	Target	Actual	Comment
Rinsate blanks	Less than laboratory limit of reporting	Not applicable.	Not applicable.
Field trip spikes	Recoveries between 60% and 140%	Not applicable.	Not applicable.

Field trip blanks	Analyte concentration <LOR	Not applicable.	Not applicable.
Laboratory Considerations	**Target**	**Actual**	**Comment**
Laboratory method blank	No exceedances of laboratory acceptance criteria	Nil	Performance against indicator considered acceptable.
Matrix spike recovery	No exceedances of laboratory acceptance criteria	Four exceedances	Performance against indicator considered acceptable.
Surrogate spike recovery	No exceedances of laboratory acceptance criteria	Nil	Performance against indicator considered acceptable.
Laboratory control sample recovery	No exceedances of laboratory acceptance criteria	Nil	Performance against indicator considered acceptable.

The data collected is considered to be adequately accurate

10. DISCUSSION

A discussion on comparison of laboratory analytical results and field observations, in the context of the assessment criteria adopted for this project, is presented in **Sections 10.1.**

10.1. Human Health - Direct Contact

10.1.1. PAH

The concentrations of naphthalene, benzo(a)pyrene TEQ and total PAH in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

10.1.2. Asbestos

There was no visual evidence observed of potential asbestos containing materials on the surface of the footprints of former stockpiles SP02 (AEC02) and SP03 to SP11 (AEC03).

11. CONCLUSIONS

Based on a review of the historical contamination assessment reports provided, observations made on site by AG, and an assessment of validation laboratory analytical data in the context of the proposed low density residential land use setting, AG makes the following conclusions:

- the contamination status of the broader site is considered unlikely to have materially changed since the issue of a site audit statement in 1999;
- stockpiles SP02 and SP03 to SP11 have been adequately removed from site;
- the site is suitable for the proposed land use setting (in the context of land contamination), subject to ongoing implementation of the URS 2008, 'Contamination Management Plan, Western Precinct Development Phase' dated 7 July 2008, ref: 4321 7287, as recommended in the site audit statement issued for the site.

This report must be read in conjunction with the limitations set out in This report must be read in conjunction with the limitations set out in **Section 12.**

12. STATEMENT OF LIMITATIONS

The findings presented in this report are based on specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client to whom it is addressed and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Alliance Geotechnical Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, AG reserves the right to review the report in the context of the additional information.

This report must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to AG's engagement. The report must not be used for any purpose other than the purpose specified at the time AG was engaged to prepare the report.

Logs, figures, and drawings are generated for this report based on individual AG consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other reports, plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, AG reserves the right to review and amend this report.

13. REFERENCES

URS 2008, 'Contamination Management Plan, Western Precinct Development Phase' dated 7 July 2008, ref: 4321 7287.

Douglas Partners 2017, 'Site Walkover Contamination Report, Proposed Lots 3989, 3990 and 3991, DP1190132, Jordan Springs, NSW', dated 21 September 2017, ref: 92245.00.

AG 2018a, 'Supplementary Contamination Assessment, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 20 April 2018, ref: 7161-ER-1-3.

AG 2018b, 'Stockpile Contamination Assessment, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 17 May 2018, ref: 7161-ER-1-4.

AG 2018c, 'Waste Classification, Stockpiles SP02 to SP11, Lot 3991 in DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW', dated 22 May 2018, ref: 7161-ER-1-5.

National Environment Protection Council (NEPC) 1999a, 'Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'.

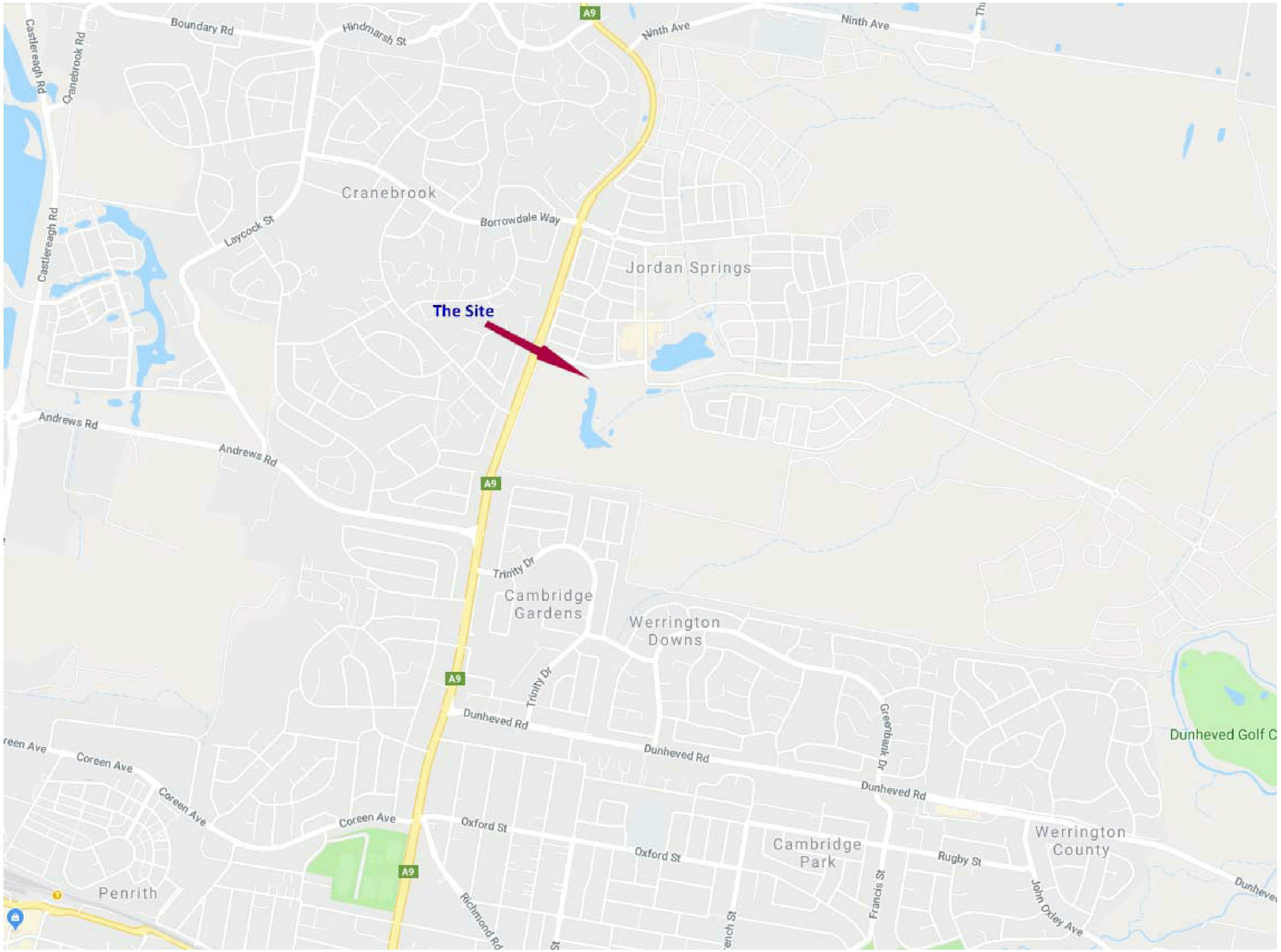
National Environment Protection Council (NEPC) 1999b, 'Schedule B(2) Guideline on Site Characterisation, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013'.

NSW EPA 2017, 'Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)'.

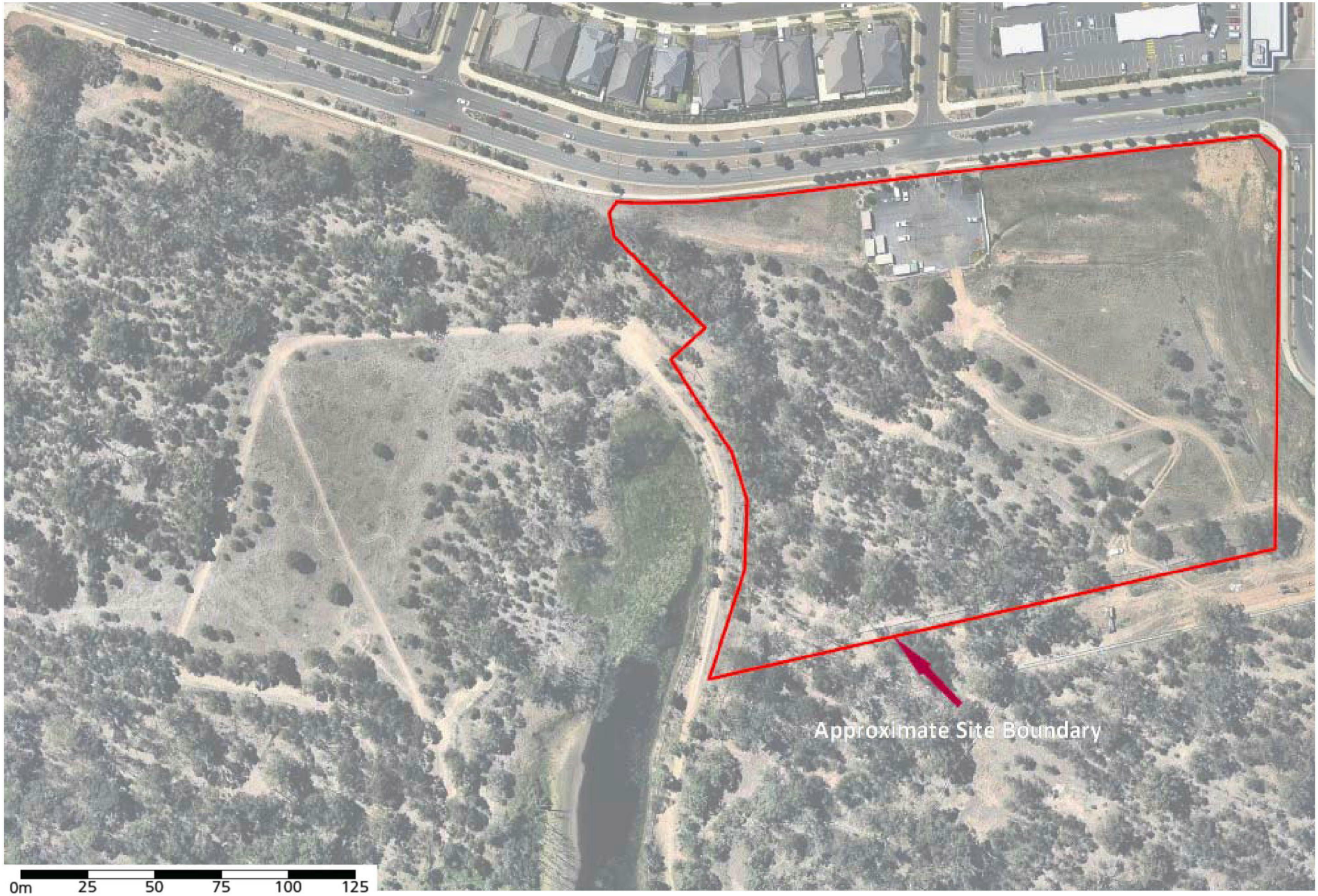
NSW EPA 1995, 'Contaminated Sites: Sampling Design Guidelines'.

NSW OEH 2011, 'Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites'.

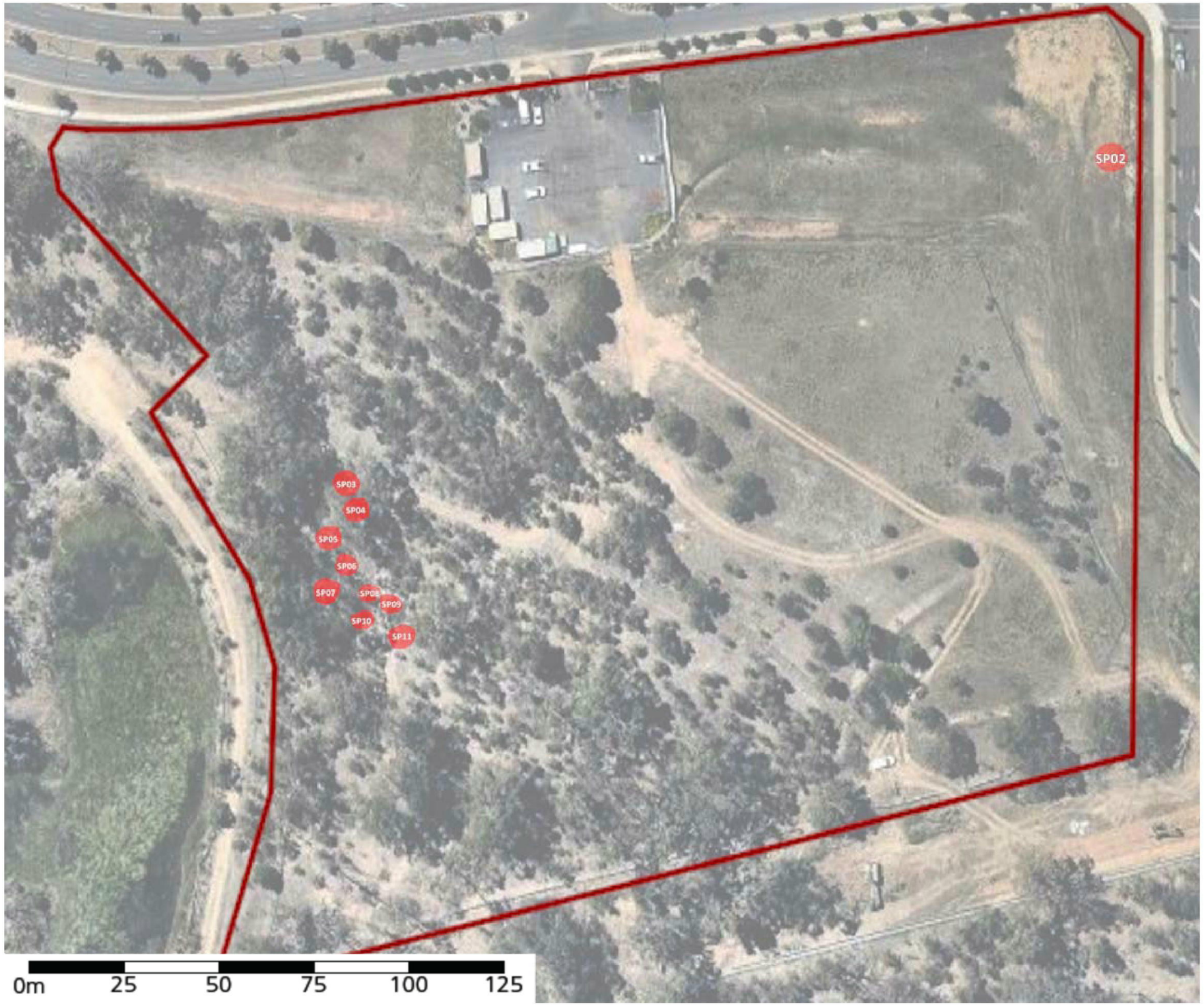
FIGURES



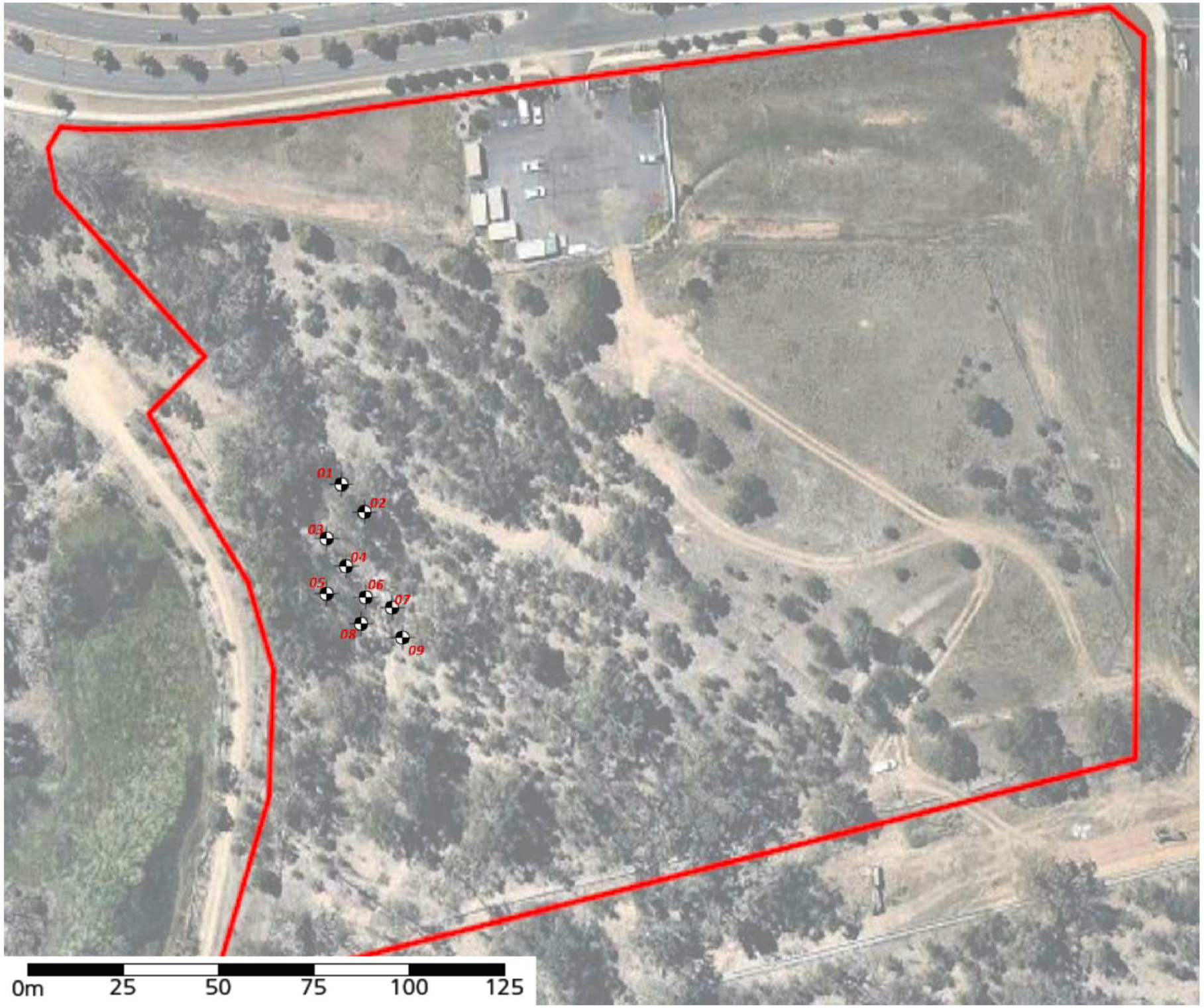
Alliance Geotechnical Pty Ltd ENGINEERING | ENVIRONMENTAL | TESTING **10 Welder Road, Seven Hills, NSW** **T: 1800 288 188 E: enviro@allgeo.com.au**	**Project Address:** Lot 3991 in DP1190132 Jordan Springs Boulevard, Jordan Springs, NSW	**Client:** LLRL Management Services as Trustee of LLRL Management Services Trust	**Project Name:** Site Validation Report	**Report No:** 7161-ER-1-6 **Figure Date:** 10 July 2018	N	**Figure No:** 1	**Figure Title:** Site Locality Plan



Alliance Geotechnical Pty Ltd ENGINEERING | ENVIRONMENTAL | TESTING **10 Welder Road, Seven Hills, NSW** **T: 1800 288 188 E: enviro@allgeo.com.au**	**Project Address:** Lot 3991 in DP1190132 Jordan Springs Boulevard, Jordan Springs, NSW	**Client:** LLRL Management Services as Trustee of LLRL Management Services Trust	**Project Name:** Site Validation Report	**Report No:** 7161-ER-1-6 **Figure Date:** 10 July 2018	N	**Figure No:** 2	**Figure Title:** Site Layout Plan



Alliance Geotechnical Pty Ltd ENGINEERING | ENVIRONMENTAL | TESTING 10 Welder Road, Seven Hills, NSW T: 1800 288 188 E: enviro@allgeo.com.au	**Project Address:** Lot 3991 in DP1190132 Jordan Springs Boulevard, Jordan Springs, NSW	**Client:** LLRL Management Services as Trustee of LLRL Management Services Trust	**Project Name:** Site Validation Report	**Report No:** 7161-ER-1-6 **Figure Date:** 10 July 2018	N	**Figure No:** 3	**Figure Title:** Stockpile Locations Plan



Alliance Geotechnical Pty Ltd ENGINEERING | ENVIRONMENTAL | TESTING 10 Welder Road, Seven Hills, NSW T: 1800 288 188 E: enviro@allgeo.com.au	Project Address: Lot 3991 in DP1190132 Jordan Springs Boulevard, Jordan Springs, NSW	Client: LLRL Management Services as Trustee of LLRL Management Services Trust	Project Name: Site Validation Report	Report No: 7161-ER-1-6 Figure Date: 10 July 2018	N	Figure No: 4	Figure Title: Sampling Point Layout Plan

TABLES

7161 Lot 3991, Jordan Springs Boulevard, Jordan Springs, NSW
7161-ER-1-6
Table LAR1 - Laboratory Analytical Results - Soils

			Sample Name	SE181230.001	SE181230.002	SE181230.003	SE181230.004	SE181230.005	SE181230.006	SE181230.007	SE181230.008	SE181230.009	SE181230.010
			Description	SP03-11/01	SP03-11/02	SP03-11/03	SP03-11/04	SP03-11/05	SP03-11/06	SP03-11/07	SP03-11/08	SP03-11/09	DUP01
			Sample Date	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018	9/7/2018
			Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Analyte Name	Units	Direct Contact HIL-A & HSL-A Residential (mg/kg)	Reporting Limit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
PAH in Soil													
Naphthalene	mg/kg	1400	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)		0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg		0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	300	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8

APPENDIX A

WASTE

SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Ticket No: ED310506503.0
Time In: 5/07/2018 10:58:20 AM
Time Out: 5/07/2018 11:10:55 AM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref:

Contaminated Asbestos Soil - 8032

7.46t@
Source: External
Dest: Elizabeth Drive General Waste

GROSS	19.26t
TARE	11.80t
NET Weight:	7.46t
Chargeable Weight:	7.46t
Each Item Weight:	0.00t

SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

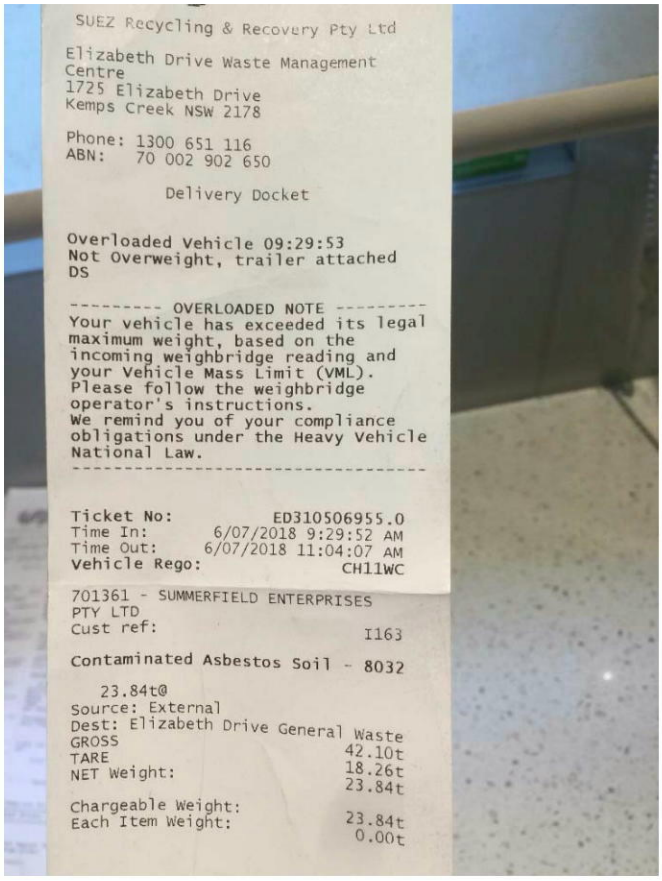
Ticket No: ED310506700.0
Time In: 5/07/2018 2:34:54 PM
Time Out: 5/07/2018 2:45:12 PM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

10.44t@
Source: External
Dest: Elizabeth Drive General Waste

GROSS	22.12t
TARE	11.68t
NET Weight:	10.44t
Chargeable Weight:	10.44t
Each Item Weight:	0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 09:29:53
Not Overweight, trailer attached
DS

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

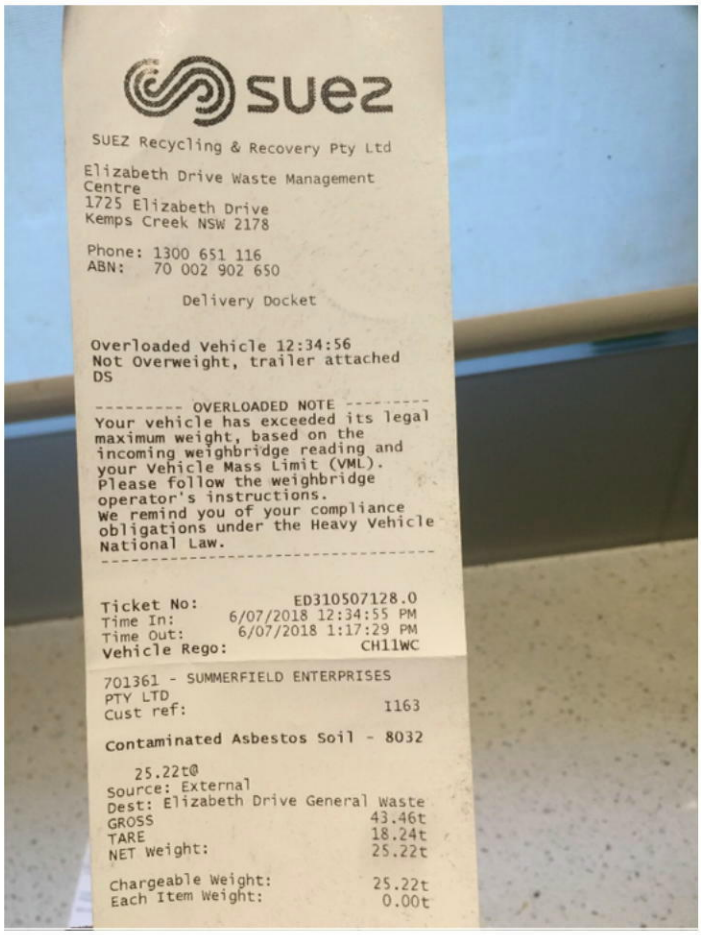
Ticket No: ED310506955.0
Time In: 6/07/2018 9:29:52 AM
Time Out: 6/07/2018 11:04:07 AM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

23.84t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 42.10t
TARE 18.26t
NET Weight: 23.84t

Chargeable Weight: 23.84t
Each Item Weight: 0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 12:34:56
Not Overweight, trailer attached
DS

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

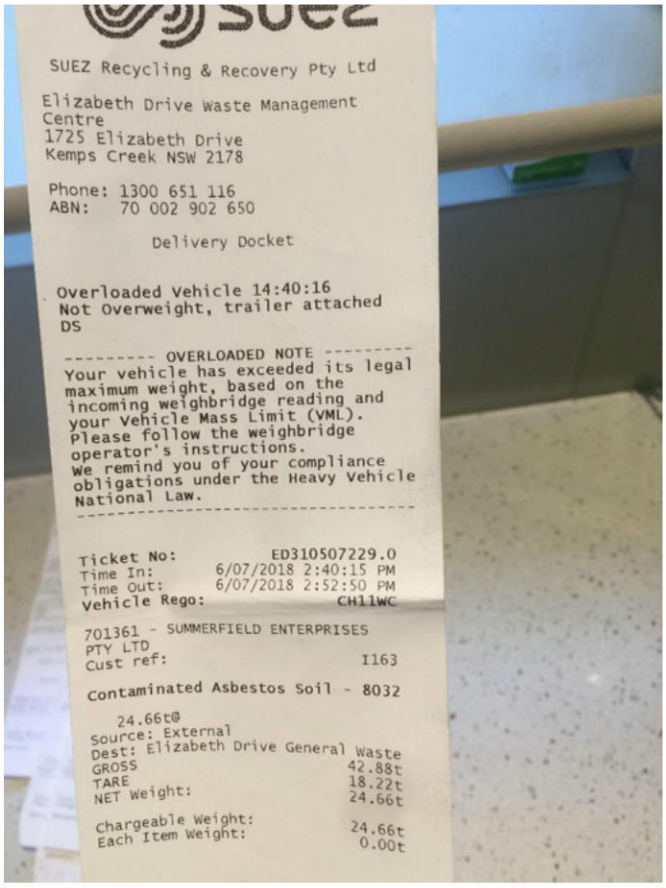
Ticket No: ED310507128.0
Time In: 6/07/2018 12:34:55 PM
Time Out: 6/07/2018 1:17:29 PM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: 1163

Contaminated Asbestos Soil - 8032

25.22t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 43.46t
TARE 18.24t
NET Weight: 25.22t

Chargeable Weight: 25.22t
Each Item Weight: 0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 14:40:16
Not Overweight, trailer attached
DS

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

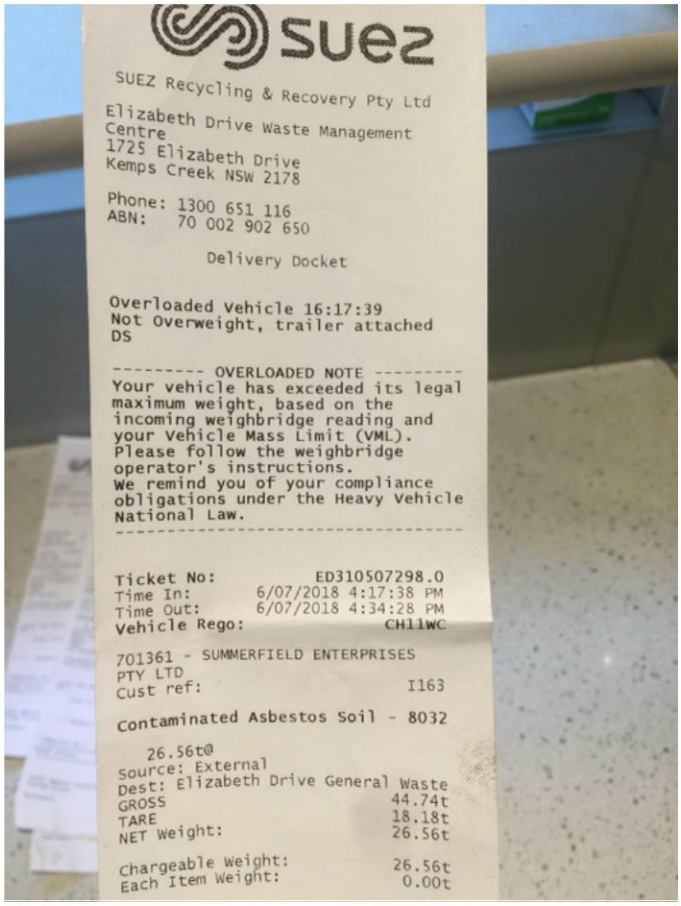
Ticket No: ED310507229.0
Time In: 6/07/2018 2:40:15 PM
Time Out: 6/07/2018 2:52:50 PM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

24.66t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 42.88t
TARE 18.22t
NET Weight: 24.66t

Chargeable Weight: 24.66t
Each Item Weight: 0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 16:17:39
Not Overweight, trailer attached
DS

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

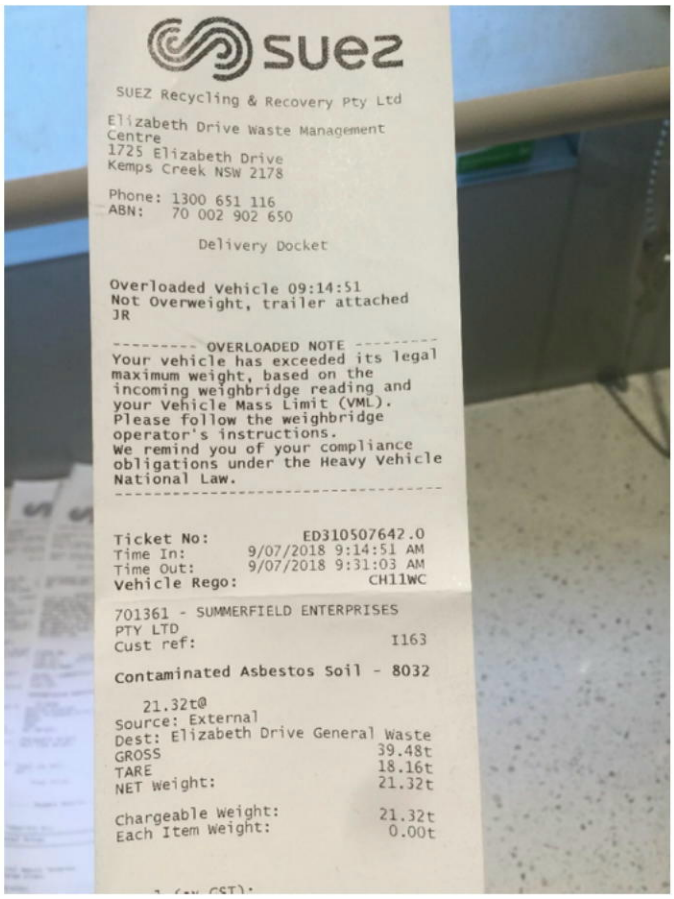
Ticket No: ED310507298.0
Time In: 6/07/2018 4:17:38 PM
Time Out: 6/07/2018 4:34:28 PM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

26.56t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 44.74t
TARE 18.18t
NET Weight: 26.56t

Chargeable Weight: 26.56t
Each Item Weight: 0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 09:14:51
Not Overweight, trailer attached
JR

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

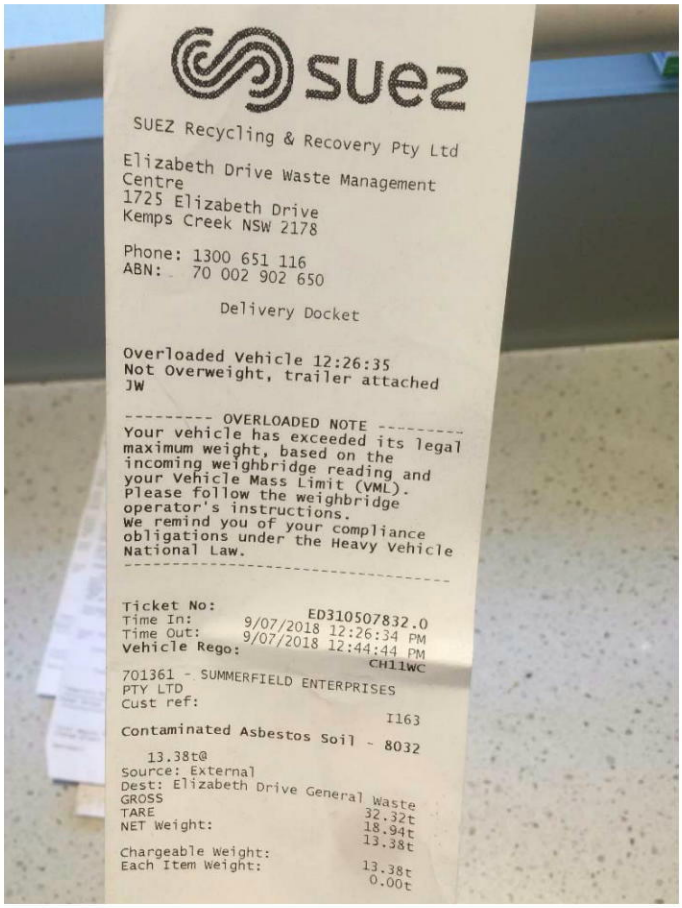
Ticket No: ED310507642.0
Time In: 9/07/2018 9:14:51 AM
Time Out: 9/07/2018 9:31:03 AM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

21.32t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 39.48t
TARE 18.16t
NET Weight: 21.32t

Chargeable Weight: 21.32t
Each Item Weight: 0.00t



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Overloaded Vehicle 12:26:35
Not Overweight, trailer attached
JW

--------- OVERLOADED NOTE ---------
Your vehicle has exceeded its legal maximum weight, based on the incoming weighbridge reading and your Vehicle Mass Limit (VML).
Please follow the weighbridge operator's instructions.
We remind you of your compliance obligations under the Heavy Vehicle National Law.

Ticket No: ED310507832.0
Time In: 9/07/2018 12:26:34 PM
Time Out: 9/07/2018 12:44:44 PM
Vehicle Rego: CH11WC

701361 - SUMMERFIELD ENTERPRISES PTY LTD
Cust ref: I163

Contaminated Asbestos Soil - 8032

13.38t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 32.32t
TARE 18.94t
NET Weight: 13.38t

Chargeable Weight: 13.38t
Each Item Weight: 0.00t

APPENDIX B

LABORATORY

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Craig Cowper	Manager	Huong Crawford
Client	ALLIANCE GEOTECHNICAL PTY LTD	Laboratory	SGS Alexandria Environmental
Address	10 Welder Road Seven Hills NSW 2147	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	0407 989 885	Telephone	+61 2 8594 0400
Facsimile	02 9675 1888	Facsimile	+61 2 8594 0499
Email	c.cowper@allgeo.com.au	Email	au.environmental.sydney@sgs.com
Project	**7161 Jordan Springs**	SGS Reference	**SE181230 R0**
Order Number	**P1501**	Date Received	09 Jul 2018
Samples	10	Date Reported	10 Jul 2018

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Ly Kim Ha
Organic Section Head

Parameter	Units	LOR	Sample Number: SE181230.001 Sample Matrix: Soil Sample Date: 09 Jul 2018 Sample Name: SP03-11/01	SE181230.002 Soil 09 Jul 2018 SP03-11/02	SE181230.003 Soil 09 Jul 2018 SP03-11/03	SE181230.004 Soil 09 Jul 2018 SP03-11/04
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 10/7/2018						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	84	98	90	96
2-fluorobiphenyl (Surrogate)	%	-	82	92	88	88
d14-p-terphenyl (Surrogate)	%	-	74	86	84	86
Moisture Content Method: AN002 Tested: 9/7/2018						
% Moisture	%w/w	0.5	8.7	12	7.8	11

Parameter	Units	LOR	Sample Number: SE181230.005 Sample Matrix: Soil Sample Date: 09 Jul 2018 Sample Name: SP03-11/05	SE181230.006 Soil 09 Jul 2018 SP03-11/06	SE181230.007 Soil 09 Jul 2018 SP03-11/07	SE181230.008 Soil 09 Jul 2018 SP03-11/08
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 10/7/2018						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	92	92	96	88
2-fluorobiphenyl (Surrogate)	%	-	90	94	90	88
d14-p-terphenyl (Surrogate)	%	-	88	84	86	80
Moisture Content Method: AN002 Tested: 9/7/2018						
% Moisture	%w/w	0.5	6.2	8.3	7.5	11

Parameter	Units	LOR	Sample Number: SE181230.009 Sample Matrix: Soil Sample Date: 09 Jul 2018 Sample Name: SP03-11/09	Sample Number: SE181230.010 Sample Matrix: Soil Sample Date: 09 Jul 2018 Sample Name: DUP01
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 10/7/2018				
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8
Surrogates				
d5-nitrobenzene (Surrogate)	%	-	86	90
2-fluorobiphenyl (Surrogate)	%	-	84	84
d14-p-terphenyl (Surrogate)	%	-	82	84
Moisture Content Method: AN002 Tested: 9/7/2018				
% Moisture	%w/w	0.5	8.1	7.2

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Moisture Content Method: ME-(AU)-[ENV]AN002

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB151547	%w/w	0.5	8 - 14%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Naphthalene	LB151576	mg/kg	0.1	<0.1	0%	99%
2-methylnaphthalene	LB151576	mg/kg	0.1	<0.1	0%	NA
1-methylnaphthalene	LB151576	mg/kg	0.1	<0.1	0%	NA
Acenaphthylene	LB151576	mg/kg	0.1	<0.1	0%	100%
Acenaphthene	LB151576	mg/kg	0.1	<0.1	0%	98%
Fluorene	LB151576	mg/kg	0.1	<0.1	0%	NA
Phenanthrene	LB151576	mg/kg	0.1	<0.1	0 - 78%	94%
Anthracene	LB151576	mg/kg	0.1	<0.1	0%	107%
Fluoranthene	LB151576	mg/kg	0.1	<0.1	0 - 81%	97%
Pyrene	LB151576	mg/kg	0.1	<0.1	0 - 79%	91%
Benzo(a)anthracene	LB151576	mg/kg	0.1	<0.1	0 - 18%	NA
Chrysene	LB151576	mg/kg	0.1	<0.1	0 - 18%	NA
Benzo(b&j)fluoranthene	LB151576	mg/kg	0.1	<0.1	0 - 18%	NA
Benzo(k)fluoranthene	LB151576	mg/kg	0.1	<0.1	0%	NA
Benzo(a)pyrene	LB151576	mg/kg	0.1	<0.1	0%	115%
Indeno(1,2,3-cd)pyrene	LB151576	mg/kg	0.1	<0.1	0%	NA
Dibenzo(ah)anthracene	LB151576	mg/kg	0.1	<0.1	0%	NA
Benzo(ghi)perylene	LB151576	mg/kg	0.1	<0.1	0%	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB151576	TEQ (mg/kg)	0.2	<0.2	0%	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB151576	TEQ (mg/kg)	0.3	<0.3	0%	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB151576	TEQ (mg/kg)	0.2	<0.2	0%	NA
Total PAH (18)	LB151576	mg/kg	0.8	<0.8	0 - 37%	NA
Total PAH (NEPM/WHO 16)	LB151576	mg/kg	0.8	<0.8		

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB151576	%	-	92%	2 - 8%	102%
2-fluorobiphenyl (Surrogate)	LB151576	%	-	90%	7 - 25%	102%
d14-p-terphenyl (Surrogate)	LB151576	%	-	90%	5 - 15%	102%

METHOD SUMMARY

SE181230 R0

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
		NVL	Not Validated

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

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

STATEMENT OF QA/QC PERFORMANCE

SE181230 R0

CLIENT DETAILS

Contact	Craig Cowper
Client	ALLIANCE GEOTECHNICAL PTY LTD
Address	10 Welder Road Seven Hills NSW 2147
Telephone	0407 989 885
Facsimile	02 9675 1888
Email	c.cowper@allgeo.com.au
Project	**7161 Jordan Springs**
Order Number	**P1501**
Samples	10

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE181230 R0**
Date Received	09 Jul 2018
Date Reported	10 Jul 2018

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	10 Soil
Date documentation received	9/7/2018	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.3°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

HOLDING TIME SUMMARY

SE181230 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Moisture Content — Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SP03-11/01	SE181230.001	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/02	SE181230.002	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/03	SE181230.003	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/04	SE181230.004	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/05	SE181230.005	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/06	SE181230.006	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/07	SE181230.007	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/08	SE181230.008	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
SP03-11/09	SE181230.009	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018
DUP01	SE181230.010	LB151547	09 Jul 2018	09 Jul 2018	23 Jul 2018	09 Jul 2018	14 Jul 2018	10 Jul 2018

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SP03-11/01	SE181230.001	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/02	SE181230.002	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/03	SE181230.003	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/04	SE181230.004	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/05	SE181230.005	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/06	SE181230.006	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/07	SE181230.007	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/08	SE181230.008	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
SP03-11/09	SE181230.009	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018
DUP01	SE181230.010	LB151576	09 Jul 2018	09 Jul 2018	23 Jul 2018	10 Jul 2018	19 Aug 2018	10 Jul 2018

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	SP03-11/01	SE181230.001	%	70 - 130%	82
	SP03-11/02	SE181230.002	%	70 - 130%	92
	SP03-11/03	SE181230.003	%	70 - 130%	88
	SP03-11/04	SE181230.004	%	70 - 130%	88
	SP03-11/05	SE181230.005	%	70 - 130%	90
	SP03-11/06	SE181230.006	%	70 - 130%	94
	SP03-11/07	SE181230.007	%	70 - 130%	90
	SP03-11/08	SE181230.008	%	70 - 130%	86
	SP03-11/09	SE181230.009	%	70 - 130%	84
	DUP01	SE181230.010	%	70 - 130%	84
d14-p-terphenyl (Surrogate)	SP03-11/01	SE181230.001	%	70 - 130%	74
	SP03-11/02	SE181230.002	%	70 - 130%	86
	SP03-11/03	SE181230.003	%	70 - 130%	84
	SP03-11/04	SE181230.004	%	70 - 130%	86
	SP03-11/05	SE181230.005	%	70 - 130%	88
	SP03-11/06	SE181230.006	%	70 - 130%	84
	SP03-11/07	SE181230.007	%	70 - 130%	86
	SP03-11/08	SE181230.008	%	70 - 130%	80
	SP03-11/09	SE181230.009	%	70 - 130%	82
	DUP01	SE181230.010	%	70 - 130%	84
d5-nitrobenzene (Surrogate)	SP03-11/01	SE181230.001	%	70 - 130%	84
	SP03-11/02	SE181230.002	%	70 - 130%	98
	SP03-11/03	SE181230.003	%	70 - 130%	90
	SP03-11/04	SE181230.004	%	70 - 130%	96
	SP03-11/05	SE181230.005	%	70 - 130%	92
	SP03-11/06	SE181230.006	%	70 - 130%	92
	SP03-11/07	SE181230.007	%	70 - 130%	96
	SP03-11/08	SE181230.008	%	70 - 130%	86
	SP03-11/09	SE181230.009	%	70 - 130%	86
	DUP01	SE181230.010	%	70 - 130%	90

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB151576.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	90
		d14-p-terphenyl (Surrogate)	%	-	90

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE181229A.021	LB151547.011	% Moisture	%w/w	0.5	5.1	4.4	51	14
SE181230.009	LB151547.022	% Moisture	%w/w	0.5	8.1	8.7	42	8
SE181233.004	LB151547.028	% Moisture	%w/w	0.5	7.82190132379.0445859872		42	14

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE181230.010	LB151578.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
SE181233.004	LB151578.019		Naphthalene	mg/kg	0.1	0.01	0.01	200	0
			2-methylnaphthalene	mg/kg	0.1	0.02	0.01	200	0
			1-methylnaphthalene	mg/kg	0.1	0.01	0.01	200	0
			Acenaphthylene	mg/kg	0.1	0.01	0.04	200	0
			Acenaphthene	mg/kg	0.1	0	0	200	0
			Fluorene	mg/kg	0.1	0	0.03	200	0
			Phenanthrene	mg/kg	0.1	0.09	0.23	93	79
			Anthracene	mg/kg	0.1	0.01	0.06	200	0
			Fluoranthene	mg/kg	0.1	0.11	0.26	84	81
			Pyrene	mg/kg	0.1	0.1	0.23	91	79
			Benzo(a)anthracene	mg/kg	0.1	0.06	0.12	141	18
			Chrysene	mg/kg	0.1	0.07	0.12	135	18
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.08	0.12	130	18
			Benzo(k)fluoranthene	mg/kg	0.1	0.04	0.07	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.05	0.09	173	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.05	0.09	173	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0.01	0.01	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.05	0.08	184	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0	0.0332	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.242	0.2442	133	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.121	0.1387	164	0
			Total PAH (18)	mg/kg	0.8	0.21	1.16	147	37
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.38	0.41	30	8
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.45	0.35	30	25
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.49	0.42	30	15

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB151576.002		Naphthalene	mg/kg	0.1	4.0	4	60 - 140	99
		Acenaphthylene	mg/kg	0.1	4.0	4	60 - 140	100
		Acenaphthene	mg/kg	0.1	3.9	4	60 - 140	98
		Phenanthrene	mg/kg	0.1	3.8	4	60 - 140	94
		Anthracene	mg/kg	0.1	4.3	4	60 - 140	107
		Fluoranthene	mg/kg	0.1	3.9	4	60 - 140	97
		Pyrene	mg/kg	0.1	3.7	4	60 - 140	91
		Benzo(a)pyrene	mg/kg	0.1	4.6	4	60 - 140	115
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

MATRIX SPIKE DUPLICATES

SE181230 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

SAMPLE RECEIPT ADVICE

SE181230

CLIENT DETAILS

Contact	Craig Cowper
Client	ALLIANCE GEOTECHNICAL PTY LTD
Address	10 Welder Road Seven Hills NSW 2147
Telephone	0407 989 885
Facsimile	02 9675 1888
Email	c.cowper@allgeo.com.au
Project	**7161 Jordan Springs**
Order Number	**P1501**
Samples	10

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Mon 9/7/2018
Report Due	Tue 10/7/2018
SGS Reference	**SE181230**

SUBMISSION DETAILS

This is to confirm that 10 samples were received on Monday 9/7/2018. Results are expected to be ready by COB Tuesday 10/7/2018. Please quote SGS reference SE181230 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	10 Soil
Date documentation received	9/7/2018	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.3°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

1 Sample on hold

SAMPLE RECEIPT ADVICE

SE181230

CLIENT DETAILS

Client ALLIANCE GEOTECHNICAL PTY LTD

Project 7161 Jordan Springs

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content	PAH (Polynuclear Aromatic Hydrocarbons) in Soil
001	SP03-11/01	1	26
002	SP03-11/02	1	26
003	SP03-11/03	1	26
004	SP03-11/04	1	26
005	SP03-11/05	1	26
006	SP03-11/06	1	26
007	SP03-11/07	1	26
008	SP03-11/08	1	26
009	SP03-11/09	1	26
010	DUP01	1	26

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name:	Alliance Geotechnical Pty Ltd	Project Name/No:	7161 Jordan Springs
Address:	10 Welder Road,	Purchase Order No:	P1501
	Seven Hills NSW	Results Required By:	24 Hour T/A
		Telephone:	0407 989 885
Contact Name:	Craig Cowper	Facsimile:	
		Email Results:	envro@allgeo.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	Sulfates	Chlorides	pH	Resistivity	Exchangeable Sodium %	Conductivity	PAH
SP03-11/01	09/07/18	1		X	ICE	1							X
SP03-11/02		2		X		1							X
SP03-11/03		3		X		1							X
SP03-11/04		4		X		1							X
SP03-11/05		5		X		1							X
SP03-11/06		6		X		1							X
SP03-11/07		7		X		1							X
SP03-11/08		8		X		1							X
SP03-11/09		9		X		1							X
DUP01		10		X		1							X

SGS EHS Alexandria Laboratory

SE181230 COC
Received: 09 – Jul – 2018

Relinquished By:	Date/Time: 09/07/12 @ 1230	Received By: Ness	Date/Time 9/7/18 2:50
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: Yes/ No	Temperature: Ambient / Chilled	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 2 of 2

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name:	Alliance Geotechnical Pty Ltd	Project Name/No:	7161 - Jordan Springs
Address:	10 Welder Road,	Purchase Order No:	P1501
	Seven Hills NSW	Results Required By:	24 HOUR T/A
		Telephone:	0407 989 885
Contact Name:	Craig Cowper	Facsimile:	
		Email Results:	enviro@allgeo.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	Sulfates	Chlorides	pH	Resistivity	Exchangeable Sodium %	Conductivity	PAH								
DUP01A	09/07/18			X	ICE	1															HOLD

Relinquished By:	Date/Time: 09/07/18 @ 1230	Received By: Ness	Date/Time 9/7/18 2:50
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: Yes/ No	Temperature: Ambient / Chilled	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

APPENDIX C

PREVIOUS REPORTS

Contamination Management Plan
Western Precinct
Development Phase

Prepared for

Maryland Development Company

Private Road
Off Forrester Road
St Marys 2760

JULY 2008

URS

Project Director: .....

Seth Molinari
Senior Principal

URS Australia Pty Ltd
Level 3, 116 Miller Street
North Sydney, NSW 2060 Australia
Tel: 61 2 8925 5500
Fax: 61 2 8925 5555

Author: .....

David Smith
Principal

Date: **7th July 2008**
Reference: 4321 7287
Status: Final

Contents

FIGURES

APPENDICES

Glossary of Abbreviations and Terms

Abbreviation	Term	Definition
Ammunition	Ammunition	A device charged with explosives, propellants, pyrotechnics, initiating composition, or nuclear, biological or chemical material for use in connection with defence or offence including demolitions. Certain ammunition can be used for training, ceremonial or other non-operational purposes.
Category A	Category A ordnance items	An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and containing explosive filling, but excluding small arms ammunition.
Category B	Category B ordnance items -	An item clearly of a military nature and which might readily be recognised by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and not containing explosive filling, but excluding small arms ammunition.
CMP (2003)	Contamination Management Plan for the Eastern Precinct	The Contamination Management Plan prepared in 2003 and submitted to Blacktown City Council and other authorities as required by the Site Audit Statements issued in the Stage 2 Decontamination Audit of ADI St Marys Munitions Factory, dated 7th June 1999.
CMP	Contamination Management Plan	The Contamination Management Plan issued to support Precinct Plan(s).
DPP	Dunheved Precinct Plan	The Dunheved Precinct Plans set out the future pattern of development for the Dunheved Precinct. The Plan was adopted by Penrith City Council on 11 December 2006 and by Blacktown City Council on 12 January 2007.
DUXOP	Defence Unexploded Ordnance Panel	The panel of contractors and consultants from whom the Department of Defence selects members for UXO related tasks.

Abbreviation	Term	Definition
EPP	Eastern Precinct Plan	The Eastern Precinct Plan sets out the future pattern of development for the Eastern Precinct. The Plan was adopted by Blacktown City Council on 4 February 2004.
Induction	Site Specific Induction	Section 8(2) of the OHS Act requires employers to ensure that persons other than their workers are not exposed to risks while in the employer's workplace. These persons include contractors, customers and visitors. If there are significant risks in the workplace, there may be a need for site induction training and procedures for managing people while on the premises.[1]
Property	Property	The whole of the landholding by St Marys Land Limited and which is sometimes called the St Marys Property for the purposes of its rezoning and redevelopment.
Site	Site	The subject area, where potential contamination has been found.
UXO	Unexploded Ordnance	Explosive ordnance that has been primed, fused, armed or otherwise prepared for action and which has been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installations, personnel or material but remains unexploded either by malfunction or design or for any cause. UXO includes items of military ammunition or explosives removed from their original resting-place for any reason, including souveniring.

[1] **"http://www.workcover.nsw.gov.au/Employers/LegalResponsibility/default.htm"** WorkCover's webpage on 18th September 2006

1.1 General Introduction

The former Australian Defence Industries (ADI) Property (the Property) at St Marys was endorsed by the NSW Government for inclusion on the Urban Development Program in 1993. The Property was seen to present an opportunity to provide housing for Sydney's growing population within an environmentally sustainable framework.

The Property is located approximately 45km west of the Sydney CBD, 5km north-east of the Penrith City Centre and 12km west of the Blacktown City Centre. The main western railway is located approximately 2.5km south of the Property. The Great Western Highway is located another 1 km south and the M4 Motorway a further 1.5km south.

The Property has an area of 1,545ha, and stretches roughly 7 kilometres from east to west and nearly 3 kilometres from north to south, from Forrester Road, St Marys in the east to The Northern Road, Cranebrook in the west, and is bounded by Llandilo and Willmot in the north and Cambridge Gardens / Werrington County and the Dunheved Industrial Area in the south. Figure 1, following, illustrates the location of the Property.

Figure 1 Aerial photograph of the St Marys Property

Given that the Property straddles the boundary between two local government areas (Blacktown and Penrith), the NSW Government decided that a regional environmental plan should be prepared covering development of the Property. Technical investigations into the environmental values and development capability of the land were commenced in 1994, and the Regional Environmental Plan for St Marys (Sydney Regional Environmental Plan No. 30 (SREP 30)) was gazetted in January, 2001. SREP 30 zoned the land for a combination of "urban", "employment", "regional open space", and "regional park" uses.

A package of documents was prepared to guide and control development comprising SREP 30 (maps and a written instrument) and an Environmental Planning Strategy (EPS) which sets out performance objectives and strategies to address key constraints associated with the Property, including: conservation, cultural heritage, water and soils, transport, urban form, energy and waste, human services, employment and land contamination.

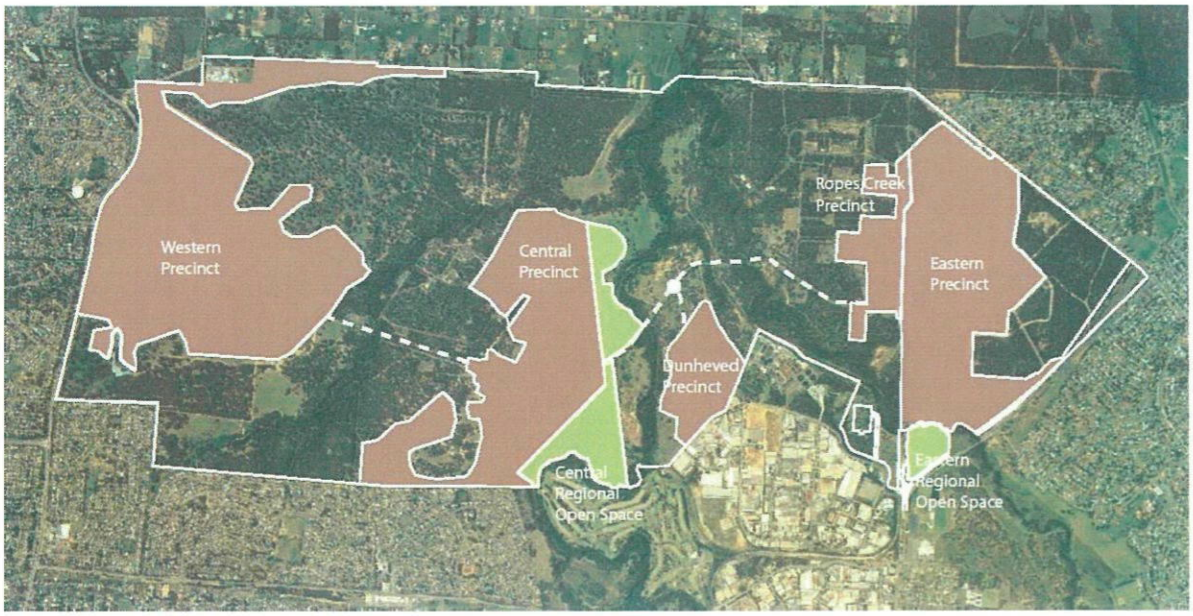
In December 2002, a Deed of Agreement was entered into between the landowner and developers of the land (a Joint Venture comprising ComLand and Lend Lease Development) and the NSW Government setting out the developer's and State Government's responsibilities in providing services and infrastructure.

SREP 30 identified six development "precincts" (known as the Western Precinct, Central Precinct, North and South Dunheved Precincts, Ropes Creek Precinct and Eastern Precinct) within the Property.

SREP 30 requires that a Precinct Plan, addressing the issues in SREP 30 and the EPS (including preparation of management plans for a range of key issues), be adopted by Council prior to any development taking place.

In March 2002, the Commonwealth Government advised that those areas of the Property listed on the Register of the National Estate should be excluded from urban development. This had the effect of changing the boundaries of the areas to be set aside for conservation. SREP 30 was subsequently amended in April 2006 to reflect these boundary changes. The precincts available for development are shown in Figure 2 below.

Figure 2 Western Precinct (with other developable areas)



On 29 September 2006, the Minister for Planning declared the Western Precinct a Release Area, paving the way for the preparation of a Precinct Plan for this area. The Western Precinct, the subject of this CMP, occupies an area of approximately 229 hectares. Although currently zoned under SREP 30 for both Urban and Employment uses, there is a draft amendment to SREP 30 currently being prepared under which the entire Western Precinct is zoned Urban.

A Precinct Plan for the Eastern Precinct (FPP) was adopted by Blacktown City Council (BCC) on 4 February 2004. The EPP incorporated a Contamination Management Plan (CMP) prepared by URS in 2003, and other management plans, and an accompanying Development Control Strategy (DCS). The Dunheved Precinct Plans have since been adopted by Penrith City Council and Blacktown City Council.

Since completion of the CMP (2003), development of the Eastern Precinct Release Area has progressed and additional site investigations have been completed as required by Site Audit Statements.

In addition, the Department of Environment and Conservation (DEC) (incorporating the NSW Environment Protection Authority and now known as the NSW Department of Environment and Climate Change (DECC)) has provided advice to Site Auditors that "*auditors should be able to rely on expert opinion* [Department of Defence Unexploded Ordnance panel (DUXOP) consultants] *to form a view about site suitability*" when assessing a site for munitions contamination. Further deliberations by the DEC and Site Auditors have determined that the presence of munitions items on a site is not likely to be within the ambit purview of a Site Auditor accredited under the Contaminated Land Management Act (1997) – but rather a suitably qualified expert in procedures for the location, handling and disposal of munitions items. Such experts can be found in, but are not limited to, the DUXOP.

Notwithstanding this change in process, the 1999 Site Audit Statements for the St Marys property have addressed the issue of potential UXO contamination.

Bulk earthworks commenced in the Eastern Precinct on 8 December 2004. Development applications for the construction of the Ropes Creek Bridge and the Southern Entry Road into the site have been submitted to BCC and Penrith City Council.

Subsequently, CMPs have been prepared by URS for the North and South Dunheved Precincts (2004), Ropes Creek and Eastern Precincts (2006) and the Eastern Regional Park (2006).

This CMP (Western Precinct Contamination Management Plan) has been prepared to support the lodgement of the Western Precinct Plan and takes into account current site knowledge including and DECC guidance relating to the reliance on specialist consultants for use in the development phase prior to sub-division.

1.2 Introduction to the Contamination Management Plan

The Western Precinct was the subject of extensive investigation during the 1990s. The investigation work was undertaken with the full involvement of the EPA and subsequently an independent NSW EPA accredited Site Auditor who produced and issued Site Audit Statements for the whole of the St Marys Property (*Stage 2 Decontamination Audit of ADI St Marys Munitions Factory*, dated 7 June 1999).

The investigation and remediation programme for the Property commenced in 1990, with the objective of assessing the nature, degree of chemical contamination and remediating to a level suitable for redevelopment for a variety of land uses including residential. For the purposes of the remediation and validation, the Property was divided into nine sectors. The Western Precinct covers part of the following sectors as follows:

- Part Western Sector — Covered by SAS CHK001/1.
- Part Southern West Sector — Covered by SASs CHK001/1, CHK001/6 and CHK001/7.

The information presented in the remediation and validation reports for these sectors has been considered, along with other relevant information for the Property, to develop this CMP (Western Precinct).

The majority of the Western Precinct was assessed by the Site Auditor to pose a negligible risk to the public or the environment with regard to chemical contamination and/or explosive ordnance (See SASs as listed above in Appendix A). Conditions on the SASs required investigation and assessment of areas underlying roadways which had not been investigated at the date of the SASs.

1.3 Contamination Management Plan Objectives

The objective of this CMP is to provide a framework for identifying and addressing any discovery of chemical contamination or potentially explosive ordnance so as to ensure a safe working environment for workers during development and to avoid unacceptable impact on the natural environment.

Unexpected finds may occur in areas which, although searched extensively, contain remnant materials which were obscured by the local topography, the type of surface cover (e.g. building) or at a depth preventing detection. The Site Auditor considered that, while explosive ordnance may be uncovered during earthworks, it is unlikely that these will present an unacceptable risk provided appropriate procedures for the safe handling and disposal of such material are adopted.

The successful implementation of the CMP requires the appropriate briefing and Site Specific OHS Induction of Site Operatives who may uncover potential chemical contamination (including potential asbestos containing materials) and/or explosive ordnance. It is proposed this briefing will include the review of this CMP and the associated flow chart (Figure 3 on p2-4).

This CMP describes reporting procedures and lines of responsibility (See Section 3). These experts should include those with detailed knowledge of the remediation which has been undertaken at the Property and details on the location of, and access to, the supporting documents related to the assessment and remediation of the Western Precinct.

The Property has been remediated, audited and declared suitable for its intended land uses, and remnant contamination, if present, is most likely to be discovered during the development earthworks which will occur prior to subdivision.

The approaches included in this CMP are intended for use only during the site preparation phase of development, during which structures may be demolished and disposed of, land levels may be altered and redundant infrastructure is removed and new infrastructure is installed.

Subsequent plans, if required, will be administered through the relevant local government authority.

The operation of the CMP is described in the attached flow-chart (Figure 3).

The objective of the CMP is to provide clear guidance on the safe and appropriate actions in the event of encountering potential chemical or explosive ordnance contamination during site development works. Where such material is uncovered the CMP prescribes the quarantining of the relevant area of concern, allowing other site works to proceed unhindered, while the area of concern is assessed and, if necessary, remediated and validated.

Where required, reference should be made to the extensive library of documents containing information on the historic assessment and remediation of the site. This library provides a valuable source of information which can be drawn on to provide support for development of remedial and/or assessment approaches.

Two classes of potential contamination are discussed separately below: chemical (including potential asbestos containing materials) and ordnance.

2.1 Potential Chemical Contamination

Potential chemical contamination may be indicated in the field by:

- Discoloured soils;
- Odorous soils;
- Potentially asbestos containing sheeting, fragments or insulation materials; or
- The presence of other foreign materials, such as drums, waste dumps or building rubble which could be a source of contamination.

If the Site Manager considers material to be potential chemical contamination the area will be quarantined and a suitably qualified Environmental Consultant will be contacted. The Environmental Consultant will be responsible for assessing the findings, taking samples to characterise and delineate the extent of the potential contamination and defining appropriate remedial actions, if required.

Suspected asbestos containing materials should be managed in accordance with relevant WorkCover requirements and a site specific Asbestos Management Plan.

If deemed necessary by the Environmental Consultant, the contamination will be removed for disposal at a suitably licensed facility in accordance with *Waste Classification Guidelines* (NSW DECC, April 2008). The resultant excavation will be validated by the Environmental Consultant and a report on the remediation and subsequent validation will be completed and, if appropriate, be reviewed and approved by an independent NSW EPA accredited Site Auditor. The quarantine barriers can be removed and the earthworks continued upon receipt of advice from the Environmental Consultant, issue of an SAS, or preliminary advice from the Site Auditor.

If the area is determined by the Environmental Consultant to not be contaminated or the analyses meet the relevant site validation criteria, the Environmental Consultant should notify the Site Manager that the quarantine restrictions on the area can be lifted and the works in that area may resume. The Environmental Consultant will prepare a report on the investigation and the conclusions drawn.

Extensive Contamination

In the event that assessment by the Environmental Consultant identifies that the contamination is extensive[2] in its lateral and/or vertical extent, then the Environmental Consultant will prepare a sampling and analysis plan to delineate the contamination and assess the extent of any remediation required. The sampling and analysis plan must be reviewed by the independent Site Auditor, who would be engaged to review the works and issue a new SAS, on successful completion of the works.

2.2 Potential Explosive Ordnance Materials

Potential explosive ordnance material may be indicated in the field by:

- Munitions shells;
- Flares;
- Ammunition packaging;
- Grenade components; or
- Metal debris not identifiable as non-munitions or of uncertain origin.

Should potential ordnance material be uncovered, the earthworks will cease immediately and the Site Manager informed. The area should be quarantined, by means of some appropriate barrier to prevent access to the area to protect the workforce from potential injury.

The Site Manager will make a preliminary assessment of the find and determine whether it is some miscellaneous debris, a fragment of ordnance or a potentially explosive device.

Where the Site Manager can identify the item as non-ordnance debris or a minor harmless fragment of ordnance debris, the material should be removed from the excavation and disposed of appropriately.

Where it is considered to be a potentially explosive device, the Site Manager shall contact an appropriately qualified Ordnance Contractor, to assess the item and the area.

Should the Ordnance Contractor consider the object(s) to be non-ordnance or harmless fragments of ordnance, the object(s) can be removed and disposed of appropriately. The quarantine restrictions can be lifted and the earthworks continued.

[2] When the area is sufficiently large to warrant audit of the remediation and issue of a replacement Site Audit Statement, the Environmental Consultant will advise when to engage an Auditor reflecting contemporary industry practise Less than 1000 m^2 would not immediately qualify.

If the Ordnance Contractor identifies the object(s) as potential explosive ordnance, the Ordnance Contractor shall inform the Site Manager, and arrange disposal.

Based on the nature of find, it may be recommended that a geophysical survey of the area be undertaken to establish whether the item was an individual piece, one of a number of pieces or a disposal pit. The survey would be undertaken by the Ordnance Contractor using appropriate equipment. Further surveys are mandatory if the explosive ordnance is considered a Category A item or more than three readily identifiable Category B items are found at one location.

- **Category A** - An item clearly of a military nature and which might readily be recognized by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and containing explosive filling, but excluding small arms ammunition.

- **Category B** - An item clearly of a military nature and which might readily be recognized by a member of the public as such (e.g. in effect complete in appearance as a projectile of 20 mm calibre or greater, hand grenade, mortar, bomb, etc) and not containing explosive filling, but excluding small arms ammunition.

This is in accordance with the validation procedures for the earlier site assessments, remediation and audit, and maintains the same level of confidence for the whole Property.

The Ordnance Contractor will prepare a report on the investigations undertaken, remediation works undertaken and validation surveys completed. Subject to review of the Ordnance Contractor's report by a suitably qualified consultant, the quarantine restrictions on the area can be removed and the earthworks resumed. The Site Auditor will be provided with a copy of the Clearance Report for the area issued by the Ordnance Consultant.

Further Explosive Ordnance Surveys

Any additional ordnance surveys should be designed to characterise the extent and character of the ordnance contamination and then (or concurrently) to remove the contaminant so that the area is safe for the development activities to resume. These surveys should be undertaken by an Ordnance Contractor, with the objective of characterising and delineating the extent of the explosive ordnance contamination. Such surveys may, as appropriate, utilise magnetic, electromagnetic or other diagnostic techniques.

In the event that further explosive ordnance is discovered the search area may need to be extended to ensure a suitable buffer zone is searched. A remediation and sampling strategy for the area is to be developed in consultation with the Ordnance Consultant.

All additional finds should be logged and disposed of appropriately. Once the investigation is complete a report on the scope of the investigation, remedial work and results should be produced by the Ordnance Contractor, approved by the Ordnance Consultant and provided to the independent Site Auditor. The quarantine restrictions on the area can be removed and the earthworks resumed.

2.3 Temporary Stockpiling of Materials

Earthworks in the development phase are likely to, temporarily, generate excess material which may be stockpiled for re-use. Unless some event or observation indicates that the material excavated and placed into the stockpile is potentially contaminated, no particular treatment is required other than normal dust suppression, and erosion controls in accordance with relevant Council requirements.

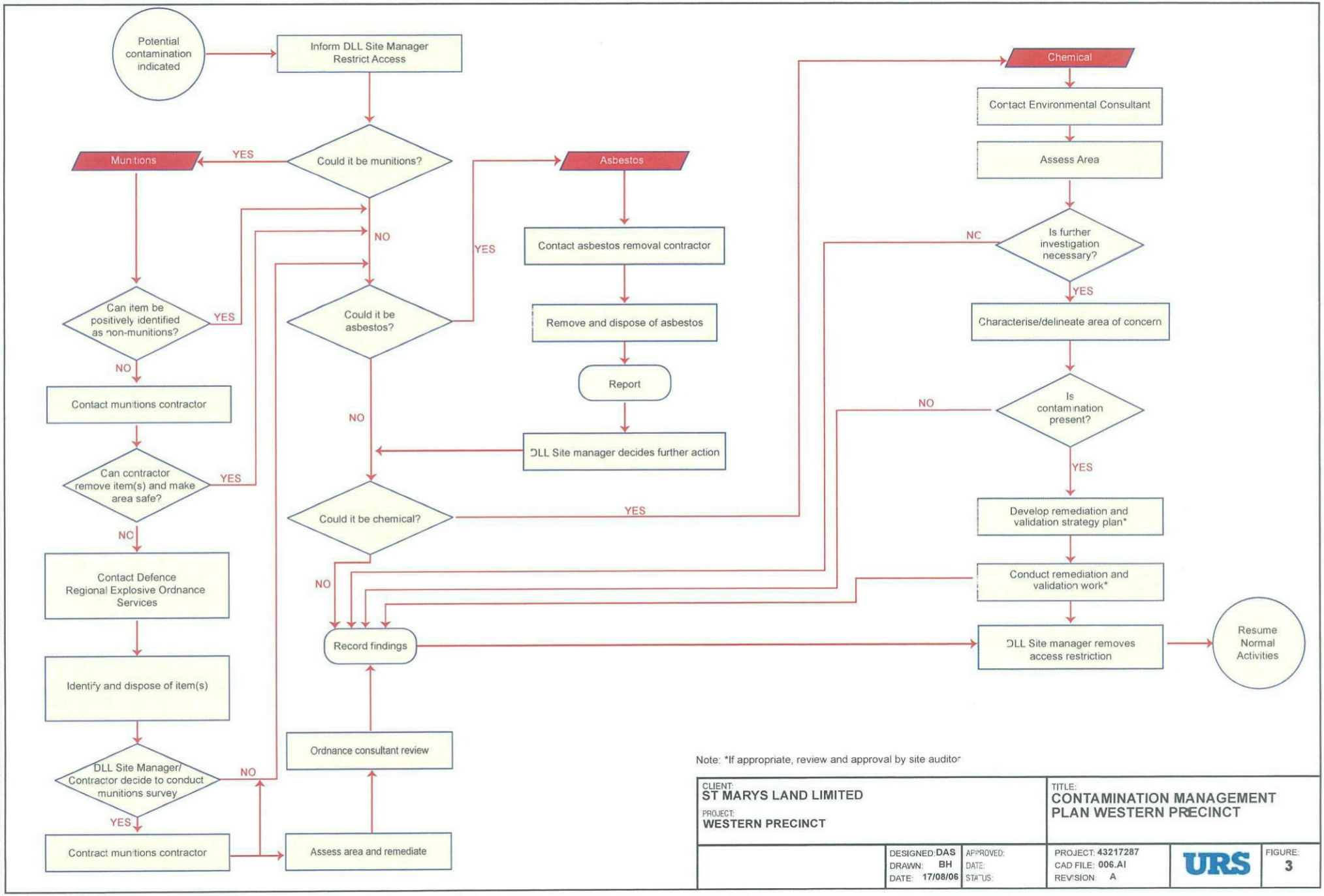
If assessment by the Environmental Consultant or the Ordnance Contractor identifies contamination that is extensive in its lateral and/or vertical extent, or a stockpile is observed to be contaminated, then the Environmental Consultant will prepare a sampling and analysis or survey plan to delineate the contamination and assess the extent of remediation required. The sampling and analysis plan or survey plan should, as appropriate, be reviewed by the Site Auditor or the Ordnance Consultant.

Subject to the agreement of the relevant Consultant, it may be possible to move and stockpile the affected material. Where temporary stockpiling is permitted such stockpiles shall be installed and maintained to eliminate risk to workers and other people due to exposure to contaminants in dust or vapours and risk to the environment as a result of silt or contamination of stormwater.

Validation sampling or surveying of the contaminated area or stockpile would be required before earthworks continue in that area.

2.4 Contaminated Management Plan Flowchart

Figure 3, following, describes the decision processes in the implementation of this CMP.



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Summary of Roles & Responsibilities

SECTION 3

The key roles[3] and responsibilities with respect to this CMP are as follows:

Title	Role
Asbestos Consultant	Responsible for reviewing the assessment of areas contaminated by potential asbestos containing materials. The Asbestos Consultant will provide a brief report which certifies the subject area is free of asbestos and suitable for residential development.
Asbestos or Environmental Contractor	Responsible for removal or treatment of contaminated material in accordance with this procedure and direction by the Environmental Consultant and the Site Manager.
Environmental Consultant	Once called to the site, the Environmental Consultant will be responsible for assessing the potential chemical contamination find, undertaking any necessary sampling and delineation, if required, developing a remedial scope and validating remediation to render the site suitable for residential development. The Environmental Consultant may, as appropriate, have expertise in environmental assessment and/or asbestos assessment. All findings and conclusions will be reported, as appropriate, to the satisfaction of the Site Manager and/or the Site Auditor or asbestos consultant if a Site Audit is not required.
Site Manager:	Responsible for the preliminary assessment of potential contamination and/or ordnance materials discovered and assessing whether further action is required. The Site Manager is responsible for ensuring the induction of Site Operatives, assessing the adequacy of quarantine measures and contacting the relevant Consultant and/or Ordnance Contractors and Site Auditor where appropriate. Once an area is declared free of the contamination, the Site Manager's role will be to remove the quarantine and allow site works to proceed.
Ordnance Consultant	Responsible for reviewing the survey and assessment of areas contaminated by suspected ordnance which is undertaken either as a consequence of discovery of suspect materials or as a requirement of the Site Audit Statements. The Ordnance Consultant, who will be independent of the Ordnance Contractor and be a member of DUXOP, will, when satisfied with information provided by the Ordnance Contractor, provide a letter which confirms the site is suitable for recommencement of development activities.

[3] Contact details are updated as required and can be seen in Appendix A

Title	Role
Ordnance Contractor	Once called to the site, the Ordnance Contractor will be responsible for assessing the ordnance find, undertaking any surveying sampling and delineation, developing any necessary remedial scope and validating any remediation necessary to render the site suitable for residential development. The Ordnance Contractor shall complete a clearance report on each area investigated and/or remediated and provide a copy for review by the Ordnance Consultant. As necessary, the Ordnance Contractor will conduct surveys of the site and complete reports to validate the remediation of areas where ordnance is discovered for review by the Ordnance Consultant.
Site Auditor	Responsible for reviewing the remediation and assessment of areas contaminated by chemicals which is undertaken either as a consequence of discovery of suspect materials or as a requirement of the Site Audit Statements. The Site Auditor, who will be independent of the Environmental Consultant and accredited by the NSW EPA, will then, when satisfied by the information provided and relying on clearance reports provided by the Ordnance Consultant, issue further Site Audit Statements which certify the site is suitable for residential development.
Site Operatives:	During the works, the Site Operative will be vigilant for potential contamination and/or ordnance. Where potential contamination and/or ordnance is identified, Site Operatives will quarantine the area and inform the Site Manager

Limitations

SECTION 4

URS Australia Pty Ltd (URS) has prepared this report for the use of Maryland Development Company in accordance with the usual care and thoroughness of the consulting profession. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 12 July 2007.

The methodology adopted and sources of information used by URS are outlined in this report. URS has made no independent verification of this information beyond the agreed scope of works and URS assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to URS was false.

This report was prepared in the period up to 7th 2008 and is based on the information reviewed at the time of preparation. URS disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal vice. Legal advice can only be given by qualified legal practitioners.

Appendix A
SITE AUDIT STATEMENTS

NSW Environment Protection Authority
SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/1

Site Auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property – excluding Eastern Sector, QEL, Site 6 and Site 23, buildings and concrete stockpile.

Address: Forrester Road, St. Marys	Postcode: 2760
Lot and DP Number:	Lot 2 in DP803832 Lot 2 and 3 in DP223888 (part of) Lot 3 in DP789196 Lot 3 in DP598653 (see attached map for excluded areas)
Local Government Area:	Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton	Company: Department of Urban Affairs and Planning
Address:	Sydney Region West Level 8, Signature Tower 2-10 Wentworth Street Parramatta NSW 2150 Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

• ADI Limited	Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990 - 1999
• Mackie Martin & Associates	Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

1. Historical Report – St Marys Property, ADI Limited, 1996,
2. Validation Report for the Western Sector, ADI St Marys Facility, ADI Limited November 1994;
3. Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
4. Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;

5. Validation Report for the Southern Sector East of the St Marys Property, Report No. 498810, ADI Limited 1996;
6. Validation Report for the Northern Sector of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
7. Validation Report for the Cental Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
8. Validation Report for the Central Sector West of the ADI St Marys Property, Report No 498840, ADI Limited 1996,
9. Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996;
10. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

1. Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
2. Remediation Action Plan for the Northern Sector, ADI St Marys Facility, Report No. 498820, ADI Limited 1996;
3. Remediation Action Plan for Central Eastern Sector, ADI St Marys Facility, Report No. 498840, ADI Limited 1996;
4. Remediation Action Plan for the Eastern Sector of the ADI St Marys Property, Report No. 498830, ADI Limited 1996;
5. Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick **all** appropriate boxes)

(a) is suitable for the following use(s):

- ✓ residential, including substantial vegetable garden and poultry;
- ~~☐ residential, including substantial vegetable garden, excluding poultry;~~
- ~~☐ residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ✓ residential with minimal opportunity for soil access including units;
- ✓ daycare centre, preschool, primary school;
- ✓ secondary school;
- ✓ park, recreational open space, playing field;
- ✓ commercial/industrial use;
- ~~☐ Other~~

subject to

✓ Conditions

1. Excludes Eastern Sector, QEL, Site 6 and Site 23 which are covered by separate site audit statements, namely CHK001/2, CHK001/3, CHK001/4 and CHK001/5.
2. Excludes areas not yet investigated including the footprint of original buildings, car parks and roads, mainly around former Administration Centre Buildings CHK001/6) and the concrete stockpile in Central Sector West. (Stockpile CHK001/7)
3. An appropriate management plan, including procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).

~~(b) is not suitable for any beneficial use due to risk of harm from contamination~~

~~☐ (comments):~~

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a site auditor (Accreditation No. 9813).

I Certify that:

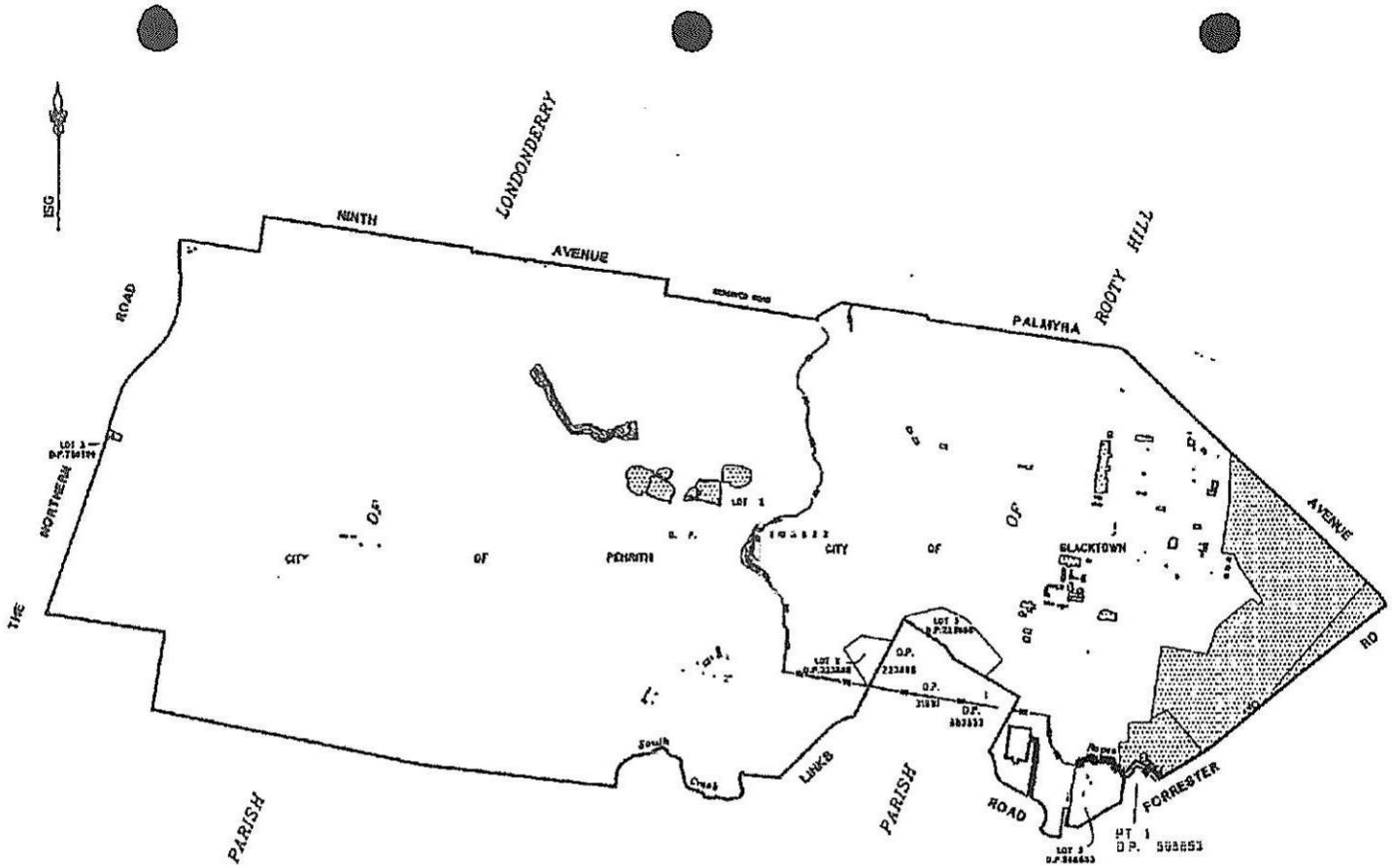
(a) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(b) this statement is to the best of my knowledge, true, accurate and complete. and

(c) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



SHADED AREAS ARE EXCLUDED FROM AUDIT STATEMENT CHK001/1

NOTE :

GEOMETRY SHOWN AS SUPPLIED BY ADI LIMITED TO DNR OFFICE 12.5.1998

FOR SITE DETAILS ON EXCLUDED AREAS PLEASE REFER TO DRAWINGS

5467-123
5467-125
5467-126
5467-127
5467-128
5467-129
5467-130
5467-131
5467-132
5467-133
5467-134
5467-135

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:
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2000 Australia
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Facsimile 02) 9261 5012

Parramatta Office:
Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/1

ORIGINAL SIZE: A3	
SCALE HOR: 1 : 25,000	VERT: -
CO-ORDS: ISG	DATUM: -
DATE OF SURVEY	DATE OF PLAN: 11 May 1998
SURVEY -	DRAWN Asud/MTB
CHECKED: MTB	DATE 24.5.1998
APPROVED: PW	DATE 24.5.1998
JOB REF: 8662	
CAD REF: 5467-122.DWG	SHEET 1 OF 13 SHEETS

NSW Environment Protection Authority
SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/6

Site Auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property – existing buildings and paved areas scattered about the site.
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832
Lot 2 and 3 in DP223888 (part of)
Lot 3 in DP789196
Lot 3 in DP598653
(see attached 7 maps)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
2-10 Wentworth Street
Parramatta NSW 2150
Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above:

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990 - 1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

11. Historical Report St Marys Property, ADI Limited, 1996;
12. Validation Report for the Western Sector, ADI St Marys Facility, ADI Limited November 1994;
13. Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
14. Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;

15. Validation Report for the Southern Sector East of the St Marys Property, Report No. 498810, ADI Limited 1996;
16. Validation Report for the Northern Sector of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
17. Validation Report for the Cental Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
18. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
19. Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996;
20. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

6. Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
7. Remediation Action Plan for the Northern Sector, ADI St Marys Facility, Report No. 498820, ADI Limited 1996;
8. Remediation Action Plan for Central Eastern Sector, ADI St Marys Facility, Report No. 498840, ADI Limited 1996;
9. Remediation Action Plan for the Eastern Sector of the ADI St Marys Property, Report No. 498830, ADI Limited 1996;
10. Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick all appropriate boxes)

(a) is suitable for the following use(s):

- ☐ ~~residential, including substantial vegetable garden and poultry;~~
- ☐ ~~residential, including substantial vegetable garden, excluding poultry;~~
- ☐ ~~residential with accessible soil, including garden (minimal home grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ☐ ~~residential with minimal opportunity for soil access including units;~~
- ☐ ~~daycare centre, preschool, primary school;~~
- ☐ ~~secondary school;~~
- ☐ ~~park, recreational open space, playing field;~~
- ✓ commercial/industrial use;
- ✓ Other – May continue to be used for existing commercial use and carparks, but underlying soils need to be tested for chemical and ordnance contamination after demolition.

subject to

✓ Conditions

1. Soils under existing buildings, car parks, roads and the concrete stockpile shall be tested for ordnance and/or chemical contamination when these facilities are removed; site audits statements for these areas will also be required.
2. An appropriate management plan, including procedures for the safe handling and disposal of any items of ordnance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).

~~(b) is not suitable for any beneficial use due to risk of harm from contamination~~ ☐ ~~(comments):~~

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a Site Auditor (Accreditation No. 9813).

I Certify that:

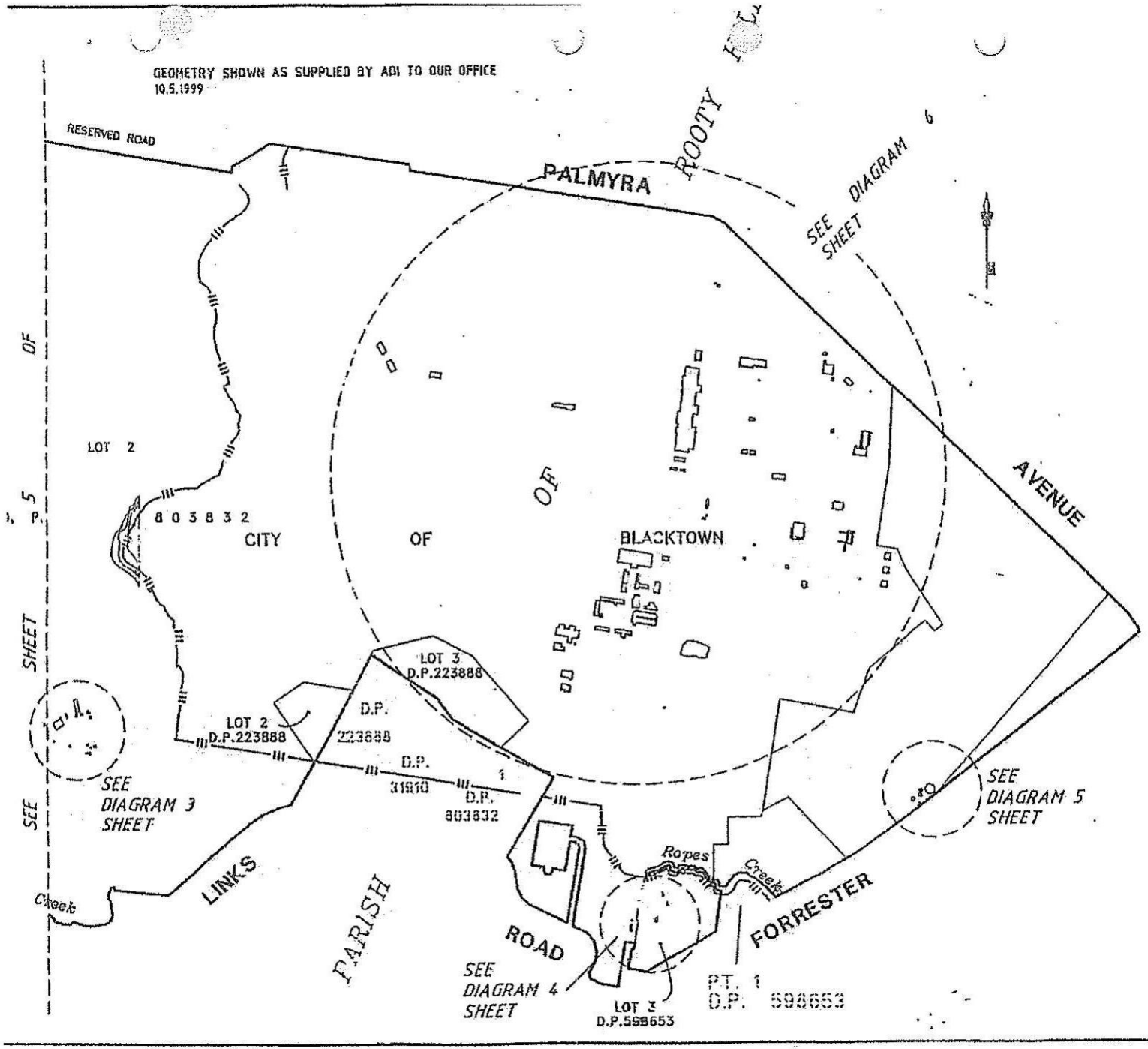
(a) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(b) this statement is to the best of my knowledge, true, accurate and complete, and

(c) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:

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Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
Telephone 02) 9283 2400
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Parramatta Office:

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12 Victoria Road, Parramatta.
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Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3	
SCALE HOR: 1:2500	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: 10 MAY 1999
SURVEY	DRAWN DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8502	
CAD REF: 5487-125	SHEET 8 OF 13 SHEETS

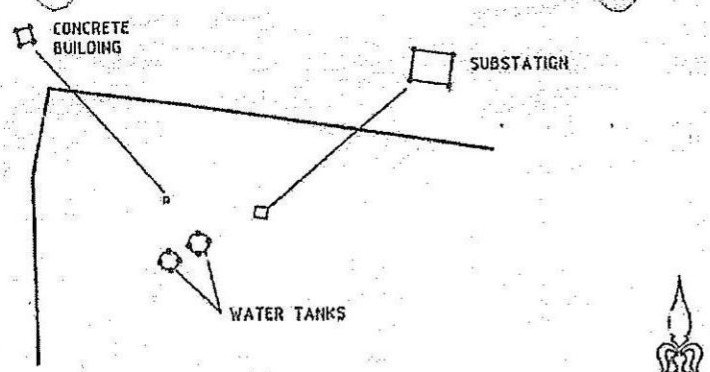

DIAGRAM 1

CONCRETE BUILDING	274588 1267987 274590 1267987 274590 1267985 274588 1267985
SUBSTATION	274625 1267979 274626 1267983 274631 1267982 274630 1267978
WATERTANK	274606 1267968 274603 1267964 274598 1267968 274602 1267972.
WATERTANK	274589 1267965 274586 1267960 274591 1267957 274594 1267960
K6	275465 1266407 275425 1266410 275426 1266422 275466 1266419
K2	275507 1266403 275487 1266407 275488 1266416 275508 1266413
CARETAKERS SHED	275532 1266368 275537 1266377 275546 1266373 275541 1266364
K4	275642 1266357 275635 1266360 275637 1266367 275645 1266364

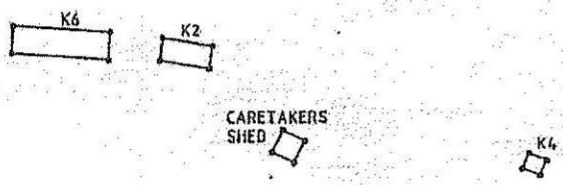

DIAGRAM 2

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatics Engineers

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Facsimile 02) 9630 4599

PREPARED FOR:
ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

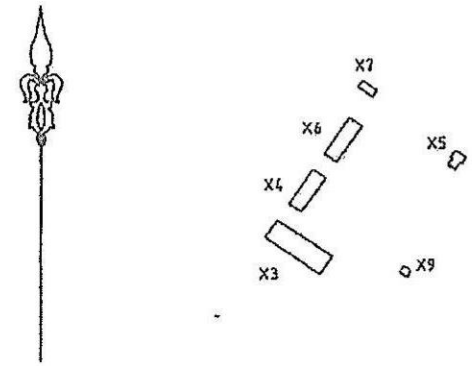
ORIGINAL SIZE: A3	
SCALE HOR: 2000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN: ODW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-127	SHEET 9 OF 13 SHEETS

BDG No	EASTING	NORTHING
X7	277113	1265596
	277111	1265594
	277105	1265598
	277107	1265601
X6	277106	1265581
	277101	1265585
	277091	1265570
	277096	1265566
X4	277076	1265549
	277082	1265545
	277091	1265559
	277086	1265563
X3	277067	1265535
	277072	1265542
	277094	1265527
	277089	1265520
X9	277127	1265521
	277125	1265518
	277122	1265520
	277124	1265523
X5	277142	1265565
	277145	1265563
	277150	1265568
	277145	1265571

BDG No	EASTING	NORTHING
W01	277452	1265655
	277456	1265654
	277457	1265658
	277453	1265658
	277475	1265762
	277481	1265760
	277479	1265755
	277474	1265756
	277493	1265765
	277500	1265764
	277499	1265759
	277492	1265760
W04	277433	1265729
	277407	1265712
	277395	1265731
	277418	1265746
	277444	1265749
	277440	1265755
	277444	1265758
	277448	1265751
W05	277399	1265671
	277397	1265674
	277395	1265672
	277396	1265670
	277360	1265728
	277365	1265731
	277368	1265726
	277363	1265723

BDG No	EASTING	NORTHING
TOILET	277519	1265773
	277521	1265766
	277516	1265765
	277514	1265772
POWER	277283	1265688
	277285	1265686
	277287	1265685
	277286	1265691
W11	277477	1265767
	277468	1265805
	277480	1265811
	277489	1265770
SHED	277439	1265759
	277437	1265763
	277439	1265764
	277441	1265761
CONTROL TOWER	277453	1265658
	277511	1265634
	277527	1265632
	277526	1265626

BDG No	EASTING	NORTHING
W09	277529	1265648
	277530	1265651
	277524	1265652
	277524	1265650
	277513	1265658
	277513	1265661
	277520	1265662
	277520	1265659
W02	277453	1265658
	277511	1265634
	277527	1265632
	277526	1265626
	277536	1265658
	277536	1265652
	277546	1265653
	277546	1265659



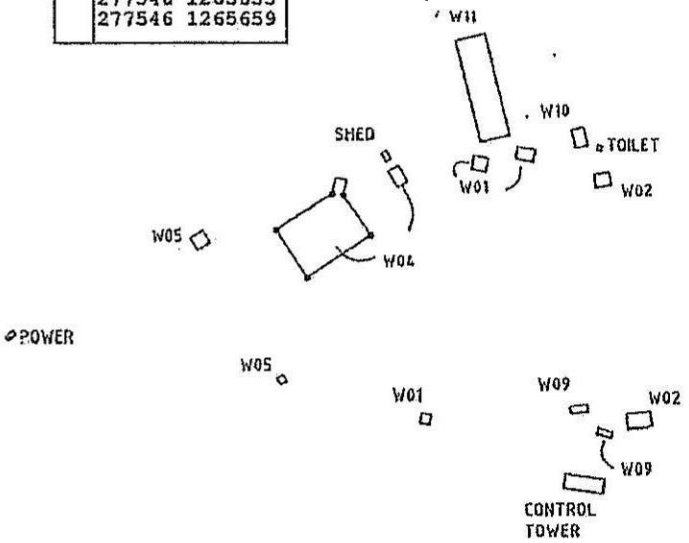


DIAGRAM 3

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatics Engineers

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Facsimile 02) 9630 4599

PREPARED FOR:
ADI PROPERTY

ADI ST MARYS PROPPERTY
RETAINED BUILDINGS & PAVED AREA
PLAN TO ACCOMPANY SITE
AUDIT STATEMENT CHK001/2

ORIGINAL SIZE: A3	
SCALE HOR: 2000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-128	SHEET 10 OF 13 SHEETS

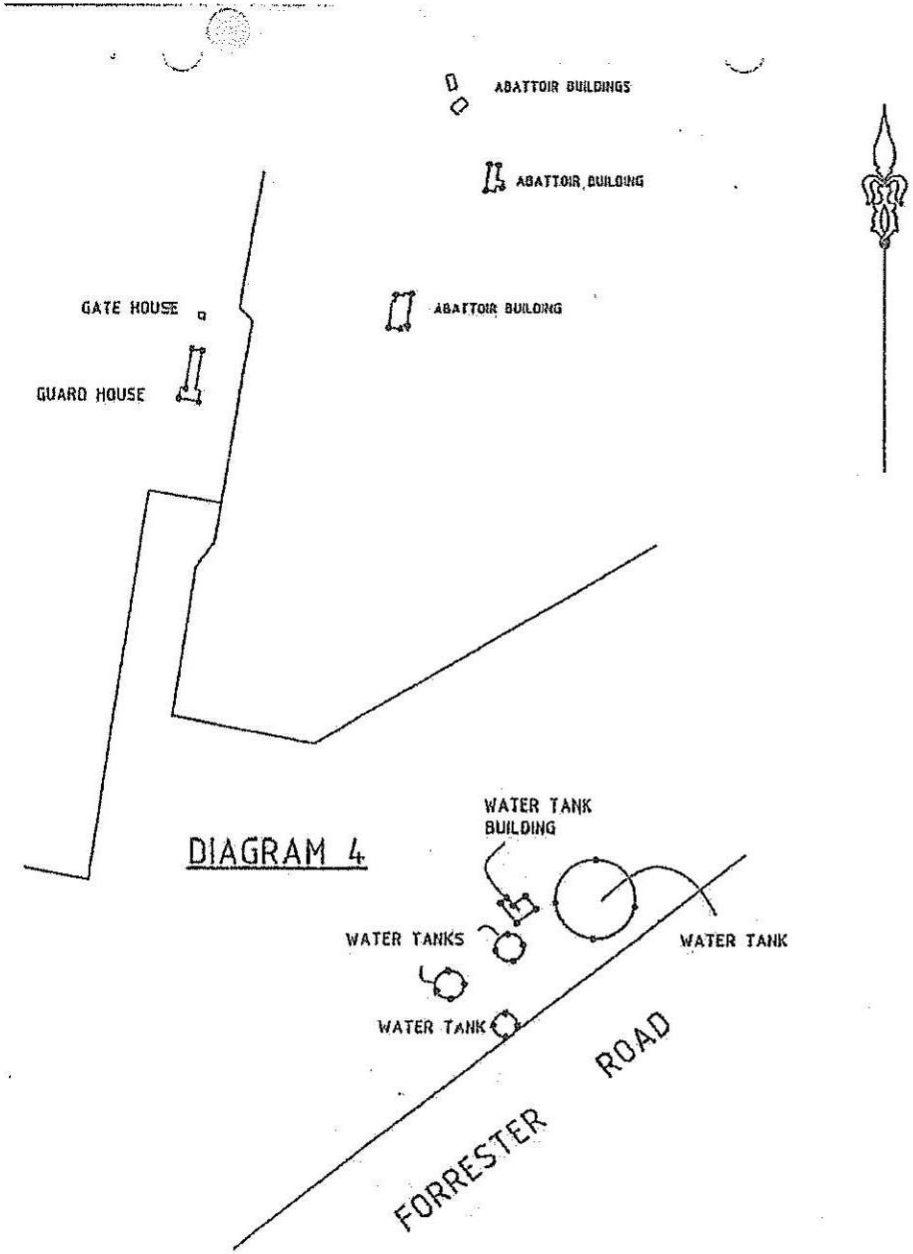

DIAGRAM 4

DIAGRAM 5

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

BOG No	EASTING	NORTHING
WATER TANK BUILDING	[illegible]	1265484
	280349	1265492
	280351	1265494
	280354	1265491
	280359	1265495
WATER TANKS	280389	1265510
	280403	1265494
	280385	1265477
	280371	1265496
	280357	1265477
	280358	1265474
	280350	1265468
	280347	1265475
	280326	1265452
	280322	1265458
	280334	1265459
	280330	1265464
	280354	1265445
	280356	1265441
	280347	1265444
	280349	1265436
GATE HOUSE	279372	1265033
	279375	1265032
	279372	1265030
	279374	1265030
GUARD HOUSE	279369	1265017
	279374	1265016
	279372	1264995
	279364	1264997
	279366	1265001
ABATTOIR BUILDINGS	279459	1265041
	279453	1265040
	279450	1265027
	279454	1265026
	279457	1265027
	279491	1265094
	279495	1265093
	279489	1265083
	279496	1265084
	279473	1265130
	279476	1265131
	279478	1265125
	279475	1265124
	279475	1265117
	279480	1265121
	279482	1265118
	279478	1265114

NOTES:

PREPARED BY:

Whelans
Surveyors
Planners
Cremalia Engineers
Whelans Australia Pty Ltd

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Telephone 02) 9630 4199
Facsimile 02) 9630 4599

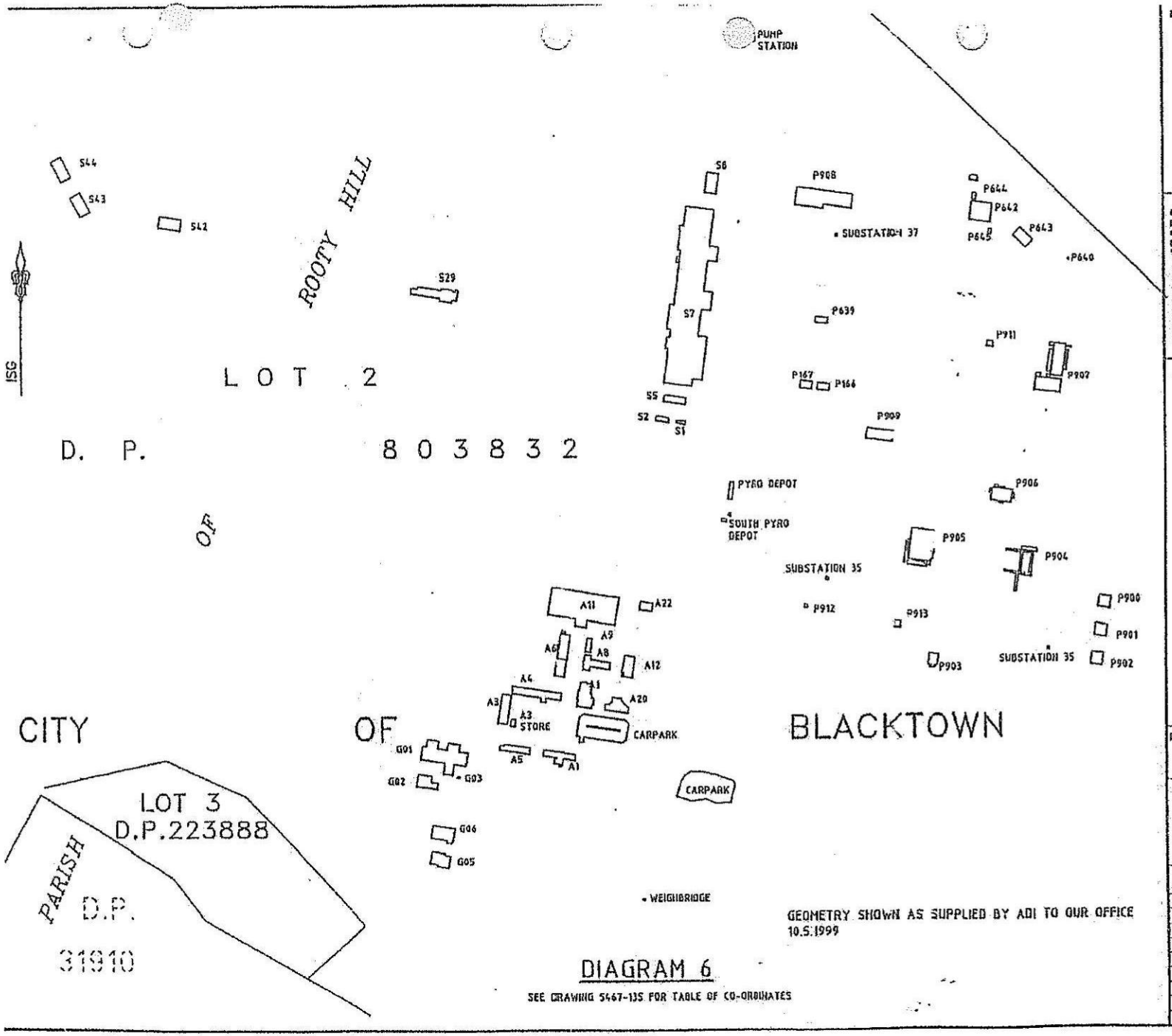
PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3

SCALE HOR: 2000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN ACAD/DDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-129	SHEET 11 OF 13 SHEETS



NOTES:

PREPARED BY:

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Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:
ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3	
SCALE HOR: 6000	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN ACAD/GDW
CHECKED: DDW	DATE 24.5.1999
APPROVED: PW	DATE 24.5.1999
JOB REF: 8662	
CAD REF: 5467-13A	SHEET 12 OF 13 SHEETS

BDG NO	EASTING NORTHING
A11	279334 1266254 279340 1266297 279449 1266279 279442 1266237
A22	279484 1266274 279505 1266270 279503 1266258 279482 1266261
A9	279398 1266217 279406 1266215 279403 1266194 279394 1266195
A8	279394 1266191 279435 1266178 279402 1266172 279390 1266168
A6	279344 1266158 279359 1266155 279370 1266222 279354 1266224
A4	279276 1266141 279274 1266129 279353 1266117 279355 1266128
A3	279260 1266128 279274 1266126 279266 1266077 279252 1266079
A3 STORE	279273 1266086 279271 1266074 279281 1266085 279279 1266073
A5	279302 1266026 279304 1266037 279262 1266043 279254 1266033
A1	279324 1266023 279326 1266033 279377 1266025 279357 1266017 279342 1266010
A7	279380 1266107 279404 1266108 279405 1266143 279387 1266146
A22	279454 1266162 279455 1266155 279470 1266153 279475 1266167
A12	279425 1266100 279462 1266094 279453 1266119 279437 1266113

BDG NO	EASTING NORTHING
CAR/ PARK	279567 1265995 279556 1265990 279542 1265953 279567 1265945 279606 1265940 279631 1265942 279640 1265975 279609 1265990
CAR/ PARK	279391 1266093 279384 1266089 279379 1266056 279383 1266046 279453 1266044 279464 1266076
G01	279203 1266029 279200 1266006 279178 1265991 279126 1266018 279138 1266052
G02	279144 1265979 279145 1265969 279122 1265993 279119 1265972 279153 1265966
G06	279142 1265881 279146 1265903 279182 1265897 279177 1265871
G05	279174 1265850 279171 1265829 279141 1265838 279144 1265854
S42	278527 1267007 278511 1266998 278529 1266966 278545 1266974
S43	278578 1266916 278560 1266949 278544 1266939 278562 1266907
S44	278729 1266884 278732 1266903 278696 1266909 278693 1266890
S29	279324 1266023 279326 1266033 279377 1266025 279376 1266015
S8	279618 1266979 279614 1266941 279595 1266944 279600 1266976
S7	279564 1266923 279611 1266916 279524 1266631 279588 1266639

BDG NO	EASTING NORTHING
S5	279525 1266609 279523 1266598 279560 1266592 279561 1266604
S2	279533 1266570 279511 1266573 279510 1266565 279531 1266562
S1	279192 1266788 279189 1266769 279114 1266781 279115 1266791
RAIL/ WAY	279599 1266565 279580 1266465 279575 1266465 279605 1266652
P908	279750 1266952 279746 1266923 279837 1266917 279840 1266939
SUB/ ST 37	279810 1266872 279814 1266872 279814 1266876 279814 1266876
P639	279593 1266784 279608 1266782 279604 1266751 279589 1266753
P167	279772 1266631 279770 1266618 279752 1266621 279753 1266634
P166	279799 1266627 279798 1266615 279779 1266617 279781 1266630
P909	279860 1266552 279858 1266533 279900 1266528 279902 1266546
P900	280258 1266276 280239 1266278 280236 1266259 280255 1266257
P901	280251 1266231 280232 1266234 280229 1266215 280248 1266212
P902	280245 1266186 280242 1266167 280223 1266170 280226 1266189
P903	279973 1266187 279959 1266189 279971 1266170 279957 1266172

BDG NO	EASTING NORTHING
SUBSTATION 35	280151 1266194 280155 1266193 280156 1266197 280152 1266198 279792 1266307 279792 1266311 279796 1266310 279796 1266306
P913	279910 1266231 279902 1266231 279903 1266241 279913 1266240
P912	279763 1266268 279763 1266262 279757 1266263 279758 1266268
P904	280136 1266352 280111 1266355 280105 1266311 280125 1266309
P905	279931 1266385 279967 1266380 279924 1266329 279960 1266327
P906	280063 1266452 280096 1266448 280093 1266427 280060 1266431
P907	280186 1266690 280135 1266636 280178 1266637 280178 1266637 280135 1266636 280177 1266631 280174 1266609 280165 1266681
P911	280056 1266698 280066 1266697 280065 1266687 280055 1266689
P640	280192 1266831 280190 1266832 280189 1266831 280190 1266829
P642	280063 1266923 280032 1266927 280028 1266896 280058 1266892
P643	280111 1266883 280133 1266862 280120 1266850 280099 1266870
P644	280039 1266929 280032 1266930 280034 1266940 280040 1266939 280041 1266958 280029 1266960 280030 1266966 280031 1266966

NO	EASTING NORTHING
P645	280059 1266871 280060 1266881 280065 1266880 279799 1266627
PYRO DEPOT	279634 1266465 279630 1266436 279637 1266435 279641 1266464
SOUTH PYRO DEPOT	279634 1266408 279631 1266408 279631 1266413 279635 1266412 279619 1266399 279628 1266398 279629 1266402 279619 1266404
WEIGH/ BRIDGE	279487 1265773 279484 1265774 279485 1265777 279488 1265776

COORDINATES ARE APPROXIMATE ONLY

TABLE OF CO-ORDINATES OF RETAINED BUILDINGS AND PAVED AREA

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Geomatic Engineers

Whelans Australia Pty Ltd

Head Office:
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Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI PROPERTY

ADI ST MARYS PROPERTY RETAINED BUILDINGS/PAVED AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/6

ORIGINAL SIZE: A3

SCALE: HOR:	VERT:
CO-ORDS:	DATUM:
DATE OF SURVEY	DATE OF PLAN: MAY 1999
SURVEY	DRAWN: ACAD/DDW
CHECKED: DDW	DATE: 24.5.1999
APPROVED: PW	DATE: 24.5.1999
JOB REF: 8662	
CAD REF: 5467-135	SHEET 13 OF 13 SHEETS

NSW Environment Protection Authority

SITE AUDIT STATEMENT (SAS)

Site Audit Statement No.: CHK001/7

Site auditor (accredited under NSW Contaminated Land Management Act 1997):

Name: Christopher H Kidd Company: HLA-Envirosciences Pty Limited
Address: 55-65 Grandview Street, Pymble, NSW Postcode: 2076
Phone: (02) 9988 4422 Fax: (02) 9988 4441

Site Details

ADI St. Marys Property –Concrete Stockpile
Address: Forrester Road, St. Marys Postcode: 2760
Lot and DP Number: Lot 2 in DP803832 (part of)
(see attached map)
Local Government Area: Penrith and Blacktown

Site Audit requested by:

Name: Mr P Newton Company: Department of Urban Affairs and Planning
Address: Sydney Region West
Level 8, Signature Tower
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Phone: (02) 9895 7142 - Fax: (02) 9895 6270

Name of contact person (if different from above

Consultancy(ies) who conducted the site investigation(s) and/or remediation:

- ADI Limited — Chemical and Explosives Ordnance Investigations, Remediation and Validation 1990-1999
- Mackie Martin & Associates — Groundwater Investigations, 1991

Title(s) of Report(s) reviewed:

4. Historical Report – St Marys Property, ADI Limited, 1996;
5. Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
6. QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited, 1999.

Other Information reviewed:

3 Site Investigation Report of St Marys Facility Ammunition and Missiles Division, Volume 4 – Discussions and Conclusions, ADI, June 1991.
4 Stage I Decontamination Audit, ADI St Marys CMPS&F, 1997.

Summary Site Audit Report Title:

Stage 2 Decontamination Audit Report for ADI Site, St Marys.

I have completed a site audit (as defined in the Contaminated Land Management Act 1997) and reviewed the reports and information referred to above with due regard to relevant laws and guidelines. I certify that the site (tick all appropriate boxes)

(a) is suitable for the following use(s):

- ~~☐ residential, including substantial vegetable garden and poultry;~~
- ~~☐ residential, including substantial vegetable garden, excluding poultry;~~
- ~~☐ residential with accessible soil, including garden (minimal home grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;~~
- ~~☐ residential with minimal opportunity for soil access including units;~~
- ~~☐ daycare centre, preschool, primary school;~~
- ~~☐ secondary school;~~
- ~~☐ park, recreational open space, playing field;~~
- ~~☐ commercial/industrial use;~~
- ✓ Other – May continue to be used as stockpile for crushed concrete, but underlying soils need to be tested for chemical and ordnance contamination after stockpile removed.

subject to

- ✓ Conditions

1. On removal of all or part of the stockpile the underlying ground should be tested for both chemical and ordnance contamination. The testing should follow similar methods and levels of quality assurance as other parts of the ADI St Marys site. Appropriate remediation and validation should be performed (if necessary) the work reviewed by a site auitor.
3. Appropriate management plan including procedures for the safe handling and disposal of any items of explosive ordnance, shall be in place before development earthworks commences and shall remain in place to cover any excavation on the site during its ongoing use. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI (see Appendix E of the Site Audit Report).
4. The final surface of any earthworks in areas which are to be used for active recreational land uses, e.g. sports grounds, school grounds and picnic areas, or low density residential use, should, on completion of the earthworks, be surveyed with a metal detector by appropriately qualified and experienced personnel and the work reviewed by an independent site auditor.

~~(c) is not suitable for any beneficial use due to risk of harm from contamination~~

~~☐ (comments): .....~~

I am accredited by the NSW Environment Protection Authority under the Contaminated Land Management Act, 1997 as a Site Auditor (Accreditation No. 9813).

I Certify that:

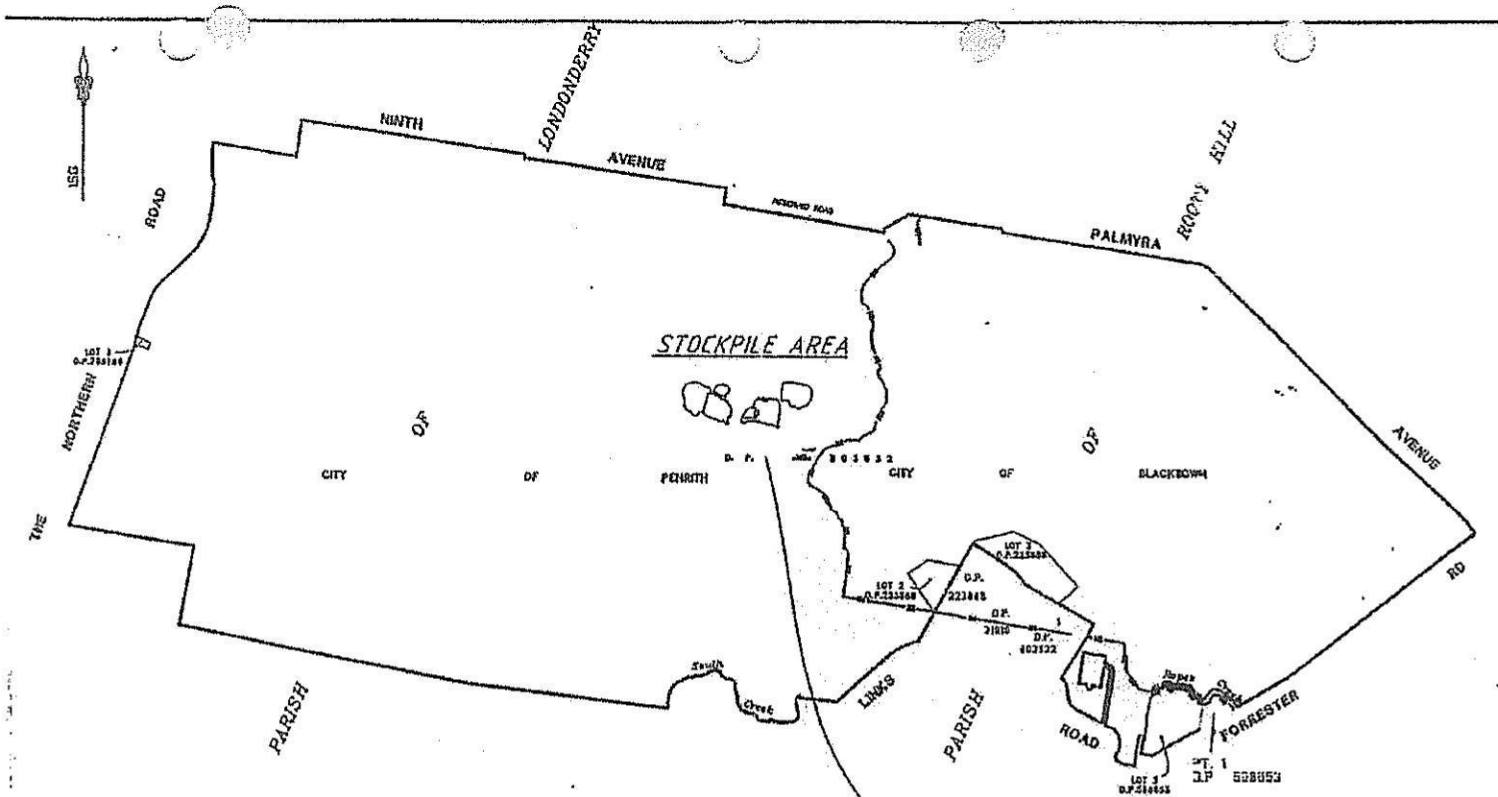
(g) I have personally examined and am familiar with the information contained in this statement, including the reports and information referred to in this statement, and

(h) this statement is to the best of my knowledge, true, accurate and complete, and

(i) on the basis of my inquiries made to those individuals immediately responsible for making the reports, and obtaining the information, referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties for wilfully submitting false, inaccurate or incomplete information.

Signed: _____ Date: 7/6/99



No	EASTING	NORTHING
	277 000	1 266 663
	277 000	1 266 664
	277 003	1 266 607
	276 991	1 266 727
	277 005	1 266 779
	277 056	1 266 793
	277 098	1 266 775
	277 133	1 266 759
	277 140	1 266 738
	277 127	1 266 730
	277 101	1 266 639
	277 070	1 266 639
	277 060	1 266 624
	277 039	1 266 635
	277 151	1 266 751
	277 184	1 266 744
	277 208	1 266 715
	277 220	1 266 733
	277 235	1 266 761
	277 222	1 266 744
	277 188	1 266 780
	277 123	1 266 730
	277 201	1 266 704
	277 245	1 266 656
	277 254	1 266 602
	277 254	1 266 602
	277 219	1 266 583
	277 206	1 266 599
	277 186	1 266 595
	277 113	1 266 627

No	EASTING	NORTHING
31	277 099	1 266 642
32	277 309	1 266 632
33	277 326	1 266 657
34	277 344	1 266 668
35	277 358	1 266 664
36	277 368	1 266 647
37	277 362	1 266 636
38	277 371	1 266 661
39	277 371	1 266 613
40	277 312	1 266 614
41	277 299	1 266 620
42	277 298	1 266 624
43	277 375	1 266 709
44	277 385	1 266 709
45	277 447	1 266 711
46	277 458	1 266 711
47	277 479	1 266 706
48	277 493	1 266 691
49	277 492	1 266 664
50	277 484	1 266 562
51	277 456	1 266 581
52	277 419	1 266 588
53	277 324	1 266 600
54	277 315	1 266 590
55	277 303	1 266 591
56	277 297	1 266 599
57	277 321	1 266 613
58	277 385	1 266 650
59	277 356	1 266 670
60	277 400	1 266 703

No	EASTING	NORTHING
61	277 504	1 266 725
62	277 504	1 266 757
63	277 514	1 266 793
64	277 523	1 266 797
65	277 530	1 266 793
66	277 528	1 266 791
67	277 652	1 266 766
68	277 655	1 266 717
69	277 603	1 266 670
70	277 590	1 266 664
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73	277 528	1 266 701
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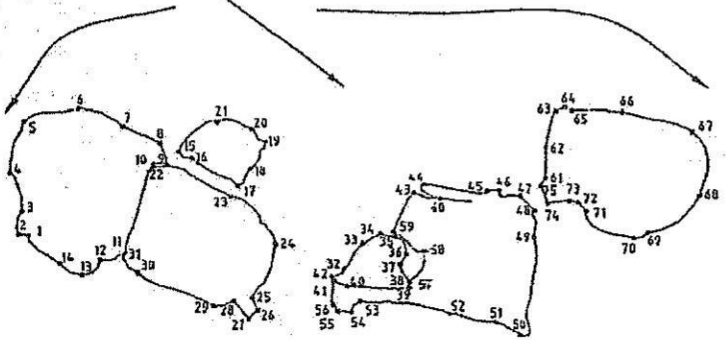
75	277 499	1 266 716



STOCKPILE AREA
NOT TO SCALE

COORDINATES ARE APPROXIMATE ONLY

GEOMETRY SHOWN AS SUPPLIED BY ADI TO OUR OFFICE 10.5.1999

NOTES:

PREPARED BY:

Whelans — Surveyors, Planners, Civil & Structural Engineers

Whelans Australia Pty Ltd

Head Office:
Whelans Australia Pty Ltd
Level 5, 141 Elizabeth Street
Sydney, New South Wales.
2000 Australia
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Facsimile 02) 9261 5012

Parramatta Office:
Level 1, Suite 2
12 Victoria Road, Parramatta.
NSW 2150
Telephone 02) 9630 4199
Facsimile 02) 9630 4599

PREPARED FOR:

ADI Property

ADI ST MARYS PROPERTY STOCKPILE AREA PLAN TO ACCOMPANY SITE AUDIT STATEMENT CHK001/7

ORIGINAL SIZE:	A3		
SCALE HOR:	1 : 25,000	VERT:	–
CO-ORDS:	ISG	DATUM:	–
DATE OF SURVEY		DATE OF PLAN:	11 May 1999
SURVEY	–	DRAWN	Acad/DW
CHECKED:	DDW	DATE	24.5.1999
APPROVED:	PW	DATE	24.5.1999
JOB REF:	8662		
CAD REF:	8662-133.DWG	SHEET 6	OF 13 SHEETS

Douglas Partners
Geotechnics / Environment / Groundwater

Douglas Partners Pty Ltd
ABN 75 053 980 117
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18 Waler Crescent
Smeaton Grange NSW 2567
Phone (02) 4647 0075
Fax (02) 4646 1886

Lend Lease Communities (Australia) Pty Ltd
Level 2, 88 Phillip Street
PARRAMATTA NSW 21254

Project 92245.00
21 September 2017
R.001.Rev0
GAR

Attention: Mr Paul Thomspon

Email: paul.thompson@lendlease.com

Dear Sirs

Site Walkover Contamination Report
Proposed Residential Subdivision
Proposed Lots 3989, 3990 and 3991, DP 1190132, Jordan Springs, NSW

1. Introduction

Douglas Partners Pty Ltd (DP) was commissioned by Lend Lease Communities (Australia) Pty Ltd (LLC) to complete a Site Walkover Contamination Report for the property comprising Lots 3989, 3990 and 3991 in Deposited Plan (DP) 1190132 at Jordan Springs NSW (the site). It is understood that the site, part of the Western Precinct of the former Australian Defence Industries (ADI) property, was subject to extensive investigations during the 1990s which included assessing the suitability of the land for residential redevelopment. A site audit statement produced in 1999 considered that the majority of the western precinct posed a negligible risk to the public with regard to contamination and /or explosive ordinance.

It is also understood that having previously developed and then sold the site in June 2013 to another developer, LLC are considering re-purchasing the site. A site walkover was required as part of due diligence investigations to identify additional activities or sources that have occurred/appeared on site since the sale of the property with the potential for land contamination. DP have not undertaken review of works associated with land whilst in LLC's ownership.

A plan of showing the subject site is attached.

2. Scope of Works

The scope completed for site walkover was as follows:

- Review of a Contamination Management Plan (CMP) produced by URS Australia Pty Ltd in 2008. The report was provided by LLC. The CMP included the 1999 Site Audit Statement. The review of CMP was completed to ascertain the contamination status of the site at time of site audit;
- Limited review of historical aerial imagery (from 2013) to identify additional areas on site where potential contamination may have occurred since the sale of the property;

- Inspection of the site to assess the potential for contamination;
- Photographing of the site for recording purposes;
- Preparation of this Site Walkover Contamination report.

3. Summary of Reviewed Documentation

3.1 URS (2008) Contamination Management Plan

A CMP was completed for the Western Precinct, which included the site, by URS Australia Pty Ltd in July 2008 to support lodgement of the Western Precinct Plan. The objective of the CMP was to provide a framework for identifying and addressing any discovery of chemical contamination or potentially explosive ordnance so as to ensure a safe working environment for workers during development and to avoid unacceptable impact on the natural environment.

The CMP described that the site had been subject to extensive investigations during the 1990s which included a site audit statement issued in 1999 for the western precinct. The investigation and remediation programs for the property were undertaken with the objective of assessing the nature, degree of chemical contamination and remediation to a level suitable for redevelopment for a variety of land uses including residential. The majority of the western precinct was assessed by the site auditor to pose a negligible risk to the public or the environment with regards to chemical contamination and/or explosive ordnance.

3.2 Other Documents

DP are aware that there is a large body of pre-existing work on the site. DP were not provided any other documents to review and due to the timeframe were unable to obtain any further documents for review.

4. Limited Historical Aerial Review

A limited review of recent Nearmap Aerial Photography (from May 2013 onwards) was undertaken to identify areas onsite where potential for site contamination may have occurred in recent years. A summary of the review of historical aerial photography is detailed below.

May 2013 – The site appears to be vacant land which is partially covered by remnant bushland. A large grass covered area cleared of native vegetation is evident in the western portion of the site (Lot 3990) and another grass covered cleared area evident in the north eastern portion of the site (Lot 3989). An asphalt sealed car park has been developed in the central northern portion (Lot 3991) of the site adjacent to the site's northern boundary. An unsealed track runs from the carpark through the central portion of the site in a north - south. A long soil stockpile of limited height is located in the south eastern portion of the site that appears to be used for erosion control and likely created from reworked natural soils. The central portion of the site is generally covered by bushland. A large dam is located in the eastern portion of the site (Lot 3989). Areas in the far north eastern and eastern portions of the site appear to be used as a compound for nearby subdivision works on adjacent properties to the east of the site.

Areas to the north and northeast of the site beyond Jordan Springs Boulevard appear to be undergoing residential development. Areas to the south and immediate west of the site appear to be covered by bushland. A large wetland is evident to the immediate south of the central portion of the site. Areas to the far west of the site have been developed as residential.

June 2014 – The site and immediate surrounds appear similar to the previous aerial image.

March 2015 – The site and immediate surrounds appear similar to the previous aerial image.

May 2016 – The site and immediate surrounds appear similar to the previous aerial image.

February 2016 – An unsealed track running diagonally from the central northern portion of the site towards the south eastern portion of the site appears. The remainder of the site and immediate surrounds appear similar to the previous aerial image.

May 2017 – The unsealed track running diagonally through the site to the south eastern portion appears to have been increased in size and there appears to have been increased disturbance to sites soils in the central eastern portion of the site. The dam in the eastern portion (Lot 3989) of the site appears to have been filled. Bulk earthworks are occurring to the immediate south of the site which appear to be for a drainage system associated with the nearby developments to the east of the site and wetlands to the immediate south of the site. The unsealed track in the central eastern portion of the site appears to have been used as an access track for the bulk earthworks occurring for the drainage system.

September 2017 – The drainage system to the immediate south of the site appears to have been completed. The remainder of the site and immediate surrounds appear similar to the previous aerial image.

5. Site Walkover

The following site description is based on a site walkover completed on 19 September 2017. Photographs taken during the Site walkover and field works are presented in attached Photographic Plates 1 to 4.

The site is an irregular shaped property. At the time of inspection the site was vacant and partially covered with bushland and unsealed dirt tracks. The site is accessed via an asphalt sealed driveway in the central northern portion of Lot 3991 that leads from Jordan Springs Boulevard to the north of the site. The driveway leads to an asphalt/spray sealed carpark in the central northern portion of Lot 3991. An unsealed dirt track leads from the southern portion of the carpark towards the central and southern portions of the site. Five small stockpiles of soil were observed on the unsealed area immediately adjacent to the south eastern corner of the asphalt carpark. The stockpiles, with an approximate total volume of 15 - 20 m^3, were partially grass covered and appeared to be comprised of soil and small amounts of crushed sandstone and concrete.

The unsealed driveway branches to the immediate south of the stockpiles with one arm of the driveway heading towards the western portion of the site (Lot 3990) and the other heading towards the eastern portion (Lot 3989). The western track leads through bushland to a grass covered cleared area in the western portion of the site (Lot 3990). Minor refuse was noted (an abandoned shopping trolley was observed half way along the track and a several abandoned beer bottles were observed beneath a tree in the mostly cleared area). No other visible signs of anthropogenic material were observed in the western portion of the site.

The eastern track leads to a large cleared area in the eastern portion of the site (Lot 3989). A long soil stockpile of limited height was observed in the south eastern portion of the site that appeared to be comprised of reworked natural material. The stockpile appeared to be used for former erosion control by diverting water. To the east of the stockpile was an area of filling which covered an approximate area of 3000 m^2. The filling was observed to contain sand, clay, crushed sandstone and minor fragments of crushed concrete. With the exception crushed concrete no further anthropogenic material was observed within the fill.

6. Potential Sources of Contamination

Area of Filling in the Eastern Portion of the site (Lot 3989)

An area of filling was identified during site inspection in the eastern portion of the site. The filling covered an approximate area of 3000 m^2. The surface of the filling was observed to contain sand, clay, crushed sandstone and minor fragments of crushed concrete. Review of Nearmap Imagery indicates that the filling arrived on site to fill a dam in the eastern portion of the site sometime between November 2016 and May 2017. Correspondence (attached) with representatives of LLC has identified that the source of the material is the result of bulk earthworks associated with the drainage system located to the immediate south of the site. Given the site audit statement that the site and immediate surrounds pose a negligible risk to the public or the environment with regards to chemical contamination and/or explosive ordnance the potential for contamination to filling in the eastern portion of the site is considered to be low.

Small Soil Stockpiles in the central Northern Portion of the Site (Lot 3991)

Five small stockpiles of soil were observed during site walkover on the unsealed area immediately adjacent to the south eastern corner of the asphalt carpark which were partially grass covered and appeared to be comprised of soil and small amounts of crushed sandstone and concrete. The stockpiles had an approximate total volume of 15 - 20 m^3. Review of Nearmap imagery indicates that the stockpiles arrived on site sometime between August and December 2012 at a similar time as the construction of the carpark.

Whilst the stockpiles were likely created by earthworks associated with the car park the potential that the stockpiles were created as a result of illegal dumping or flytipping cannot be ruled out. Although potential for contamination of the soil within stockpiles exists given the volume the potential for widespread gross contamination of the site is considered to be low.

7. Conclusions and Recommendations

The previous 1999 site audit statement produced for the western precinct, which included the site, considered the area poses a negligible risk to the public or the environment with regards to chemical contamination and/or explosive ordnance. Limited review of historical aerial imagery and site walkover completed on 19 September 2017 has identified the following potential sources appearing onsite in recent years that have the potential for contamination of the site:

- An area of filling identified on Lot 3989 which covered an approximate total area of 3000 m^2 in the location of a former dam. Given correspondence with LLC stating that the material was sourced from nearby bulk earth works for the drainage basin to the south of the site the potential for contamination is therefore considered to be low; and
- Five small stockpiles of soil observed on the unsealed area immediately adjacent to the south eastern corner of the asphalt car park on Lot 3991. Given the small volume (15 - 20 m^3) of the stockpiles, likely origins from bulk earthworks associated with the nearby carpark and observed contents the soil within the stockpile poses a low contamination risk to the site.

It is recommended that further investigations be completed in due course of the filling on Lot 3989 and within the soil stockpiles on Lot 3991 to confirm the absence/presence of contaminants of potential concern associated with fill of an unknown origin.

With respect to site contamination the recommended further assessment should build on the information provided in this report with reference to National Environment Protection Council (NEPC, 1999) National Environment Protection Council (Assessment of Site Contamination) Measure 1999 (amended 2013) (NEPC, 2013). Further assessment should include intrusive investigations, sampling, analysis and assessment to determine land use suitability.

We trust that this meets your present requirements, please do not hesitate to contact the undersigned should you have any further enquiries.

Based on our walkover assessment the identified potential sources present a low risk of contamination and no significant source of contamination have been identified on the site since the sale of the property in June 2013. DP have not undertaken review of works associated with land whilst in LLC's ownership.

8. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at Lots 3989, 3990 and 3991 DP 1190132, Jordan Springs NSW in accordance with DP's proposal dated 15 September 2017 and acceptance received from Paul Thompson dated 15 September 2017. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Lend Lease Communities Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the conditions on the site only at the time of works carried out. Conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

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

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

The limitations and notes included in the previous investigations are also relevant to this review.

Please contact the undersigned if you have any questions on this matter

Yours faithfully
Douglas Partners Pty Ltd

Grant Russell
Environmental Scientist

Reviewed by

Christopher Kline
Principal

Attachments: Subject Site Plan
Photographic Plates
Correspondence with Lend Lease Communities

Subject site:

Lot 3989
5,026m2

Lot 3990
2.345ha

Lot 3991
3.6ha

DP 1190132

Jordans Springs, (Penrith)

Photograph 1 - Asphalt sealed carpark in northern portion of site

Photograph 2 - Small soil stockpiles adjacent to south east corner of carpark

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs Site Walkover Lots 3989, 3990 and 3991 DP 1190132, Jordan Springs NSW	PROJECT:	92245.00
		PLATE No.	1
		REV:	A
	CLIENT: Lend Lease Communities Pty Ltd	DATE:	Sep-17

Photograph 3 - Native bushland covering central portion of site

Photograph 4 - Cleared grassed area in western portion of site

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	92245.00
	Site Walkover	PLATE No.	2
	Lots 3989, 3990 and 3991 DP 1190132, Jordan Springs NSW	REV:	A
	CLIENT: Lend Lease Communities Pty Ltd	DATE:	Sep-17

Photograph 5 - Engineered drainage system located to the south of the site

Photograph 6 - Central eastern portion of site

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs	PROJECT:	92245.00
	Site Walkover Lots 3989, 3990 and 3991 DP 1190132, Jordan Springs NSW	PLATE No:	3
		REV:	A
	CLIENT: Lend Lease Communities Pty Ltd	DATE:	Sep-17

Photograph 7 - Filling in eastern portion of site

Photograph 8 - Filling observed in eastern portion of site

Douglas Partners Geotechnics / Environment / Groundwater	Site Photographs Site Walkover Lots 3989, 3990 and 3991 DP 1190132, Jordan Springs NSW CLIENT: Lend Lease Communities Pty Ltd	PROJECT: 92245.00 PLATE No: 4 REV: A DATE: Sep-17

Grant Russell

From: Srinivas, Nirmal <Nirmal.Srinivas@lendlease.com>
Sent: Thursday, 21 September 2017 1:23 PM
To: Grant Russell
Subject: RE: [EXT]:RE: Jordan Springs -

Grant,

Burton for Lendlease.

Thanks,

Nirmal Srinivas
Assistant Development Manager, Communities
Level 2, 88 Phillip Street, Parramatta NSW 2150 Australia
T +61 2 9277 2688 M 0438 488 037
nirmal.srinivas@lendlease.com | www.lendlease.com

From: Grant Russell [mailto:Grant.Russell@douglaspartners.com.au]
Sent: Thursday, 21 September 2017 1:21 PM
To: Srinivas, Nirmal <Nirmal.Srinivas@lendlease.com>
Subject: RE: [EXT]:RE: Jordan Springs -

Nirmal,
Was the work undertaken by Burton for lend lease or previous owners CID?
Regards
Grant

Grant Russell | Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
18 Waler Crescent Smeaton Grange NSW 2567
P: 02 4647 0075 | F: 02 4646 1886 | E: Grant.Russell@douglaspartners.com.au

From: Srinivas, Nirmal [mailto:Nirmal.Srinivas@lendlease.com]
Sent: Thursday, 21 September 2017 1:12 PM
To: Grant Russell
Cc: Chris Kline
Subject: RE: [EXT]:RE: Jordan Springs -

Hi Grant,

The basin was filled up using cut and fill material on site and the works were carried out by Burton Contractor. Basically when new channel was built, soil from there was used for filling up the basin – see image below.

Thanks,

Nirmal Srinivas
Assistant Development Manager, Communities
Level 2, 88 Phillip Street, Parramatta NSW 2150 Australia
T +61 2 9277 2688 M 0438 488 037
nirmal.srinivas@lendlease.com | www.lendlease.com

From: Grant Russell [mailto:Grant.Russell@douglaspartners.com.au]
Sent: Thursday, 21 September 2017 10:58 AM
To: Srinivas, Nirmal <Nirmal.Srinivas@lendlease.com>
Cc: Chris Kline <Chris.Kline@douglaspartners.com.au>
Subject: [EXT]:RE: Jordan Springs -

Hi Nirmal,
Yes that is dam Im talking about that has recently been filled. We neec to find out who filled the dam and with what materials?
Regards
Grant

Grant Russell | Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
18 Waler Crescent Smeaton Grange NSW 2567
P: 02 4647 0075 | F: 02 4646 1886 | E: Grant.Russell@douglaspartners.com.au

From: Srinivas, Nirmal [mailto:Nirmal.Srinivas@lendlease.com]
Sent: Thursday, 21 September 2017 10:54 AM

To: Grant R_ssell
Subject: RE: Jordan Springs -

Hi Grant,

Are you talk ng about this portion cf land – see image below?

Nirmal Srinivas
Assistant Development Manager, Communities
Level 2, 88 Phillip Street, Parramatta NSW 2150 Australia
T +61 2 9277 2688 M 0438 488 037
nirmal.srinivas@lendlease.com | www.lendlease.com

From: Srinivas, Nirmal
Sent: Tuesday, 19 September 2017 3:58 PM
To: 'grant.russell@douglaspartners.com.au' <grant.russell@douglaspartners.com.au>
Cc: Chris Kline <Chris.Kline@douglaspartners.com.au>
Subject: Jordan Springs - Site Audit Statements/CMP

Hi Grant,

As requested please see attached information relating to contamination.

Thanks,

Nirmal Srinivas
Assistant Development Manager, Communities
Level 2, 88 Phillip Street, Parramatta NSW 2150 Australia
T +61 2 9277 2688 M 0438 488 037
nirmal.srinivas@lendlease.com | www.lendlease.com

Disclaimer

"Arial","sans-serif";color:#7F7F7F;mso-themecolor:text1;mso-themetint:128; mso-style-textfill-fill-color:#7F7F7F;mso-style-textfill-fill-themecolor:text1; mso-style-textfill-fill-alpha:100.0%;mso-style-textfill-fill-colortransforms: "lumm=50000 lumo=50000"">

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"Arial","sans-serif";color:#7F7F7F;mso-themecolor:text1;mso-themetint:128; mso-style-textfill-fill-color:#7F7F7F;mso-style-textfill-fill-themecolor:text1; mso-style-textfill-fill-alpha:100.0%;mso-style-textfill-fill-colortransforms: "lumm=50000 lumo=50000""> This email and any attachments are confidential and may also contain copyright material of the Lendlease Group. If you are not the intended recipient, please notify us immediately and delete all copies of this message. You must not copy, use, disclose, distribute or rely on the information contained in it. Copying or use of this communication or information in it is strictly prohibited and may be unlawful. Contracts cannot be concluded with the Lendlease Group nor service effected by email. None of the staff of the Lendlease Group are authorised to enter into contracts on behalf of any member of the Lendlease Group in this manner. The fact that this communication is in electronic form does not constitute our consent to conduct transactions by electronic means or to use or accept electronic records or electronic signatures. Confidentiality and legal privilege attached to this communication are not waived or lost by reason of mistaken delivery to you. Lendlease does not guarantee that this email or the attachment(s) are unaffected by computer virus, corruption or other defects and accepts no liability for any damage caused by this email or its attachments due to viruses, interception, corruption or unauthorised access. Lendlease Group may monitor email traffic data and also the content of email for the purposes of security and staff training. Please note that our servers may not be located in your country. A list of Lendlease Group entities can be found here.

APPENDIX D

WORKCOVER NSW