Aargus

ENVIRONMENTAL - REMEDIATION - GEOTECHNICAL ENGINEERING - WORK HEALTH & SAFETY - LABORATORIES - DRILLING

DETAILED SITE INVESTIGATION

116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW

Prepared for

Montefiore

30th September 2022

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TABLE OF CONTENTS

TABLE OF CONTENTS **3**
LIST OF TABLES **6**
LIST OF FIGURES **7**
LIST OF APPENDICES **8**
ABBREVIATIONS **9**
EXECUTIVE SUMMARY **10**
1 INTRODUCTION **13**
1.1 BACKGROUND 13
1.2 OBJECTIVE 13
1.3 SCOPE OF WORKS 14
2 SITE IDENTIFICATION AND DESCRIPTION **15**
2.1 SITE IDENTIFICATION 15
2.2 SITE INSPECTION 16
2.3 TOPOGRAPHY AND SURFACE WATER DRAINAGE 17
2.4 SURROUNDING LAND USES 17
3 SITE HISTORY **18**
3.1 LAND TITLES 18
3.2 AERIAL PHOTOGRAPHS 19
3.3 EPA RECORDS 21
3.3.1 CLM Act *21*
3.3.2 Record of Notices *21*
3.3.3 POEO Register *21*
3.3.4 Unlicensed Premises Regulated by the NSW EPA *22*
3.4 NSW GOVERNMENT PFAS INVESTIGATION PROGRAM 22
3.5 UNEXPLODED ORDNANCE 22
3.6 INDUSTRIAL PROCESSES AND PRODUCTS MANUFACTURED 23
3.7 FORMER CHEMICAL STORAGE AND TRANSFER AREAS 23
3.8 PRODUCT SPILL & LOSS HISTORY 23
3.9 DISCHARGES TO LAND, WATER AND AIR 23
3.10 COMPLAINT HISTORY 23
3.11 HISTORICAL USE OF ADJACENT LAND 23
3.12 HERITAGE INFORMATION 24
3.13 ECOLOGICAL CONSTRAINT 24
3.13.1 Commonwealth Heritage List *24*
3.13.2 National Heritage List *24*
3.13.3 State Heritage Register *24*
3.13.4 Environmental Planning Instrument- Heritage *25*
3.14 DISCUSSION AND SUMMARY OF SITE HISTORY 25
4 ENVIRONMENTAL SETTING **26**
4.1 SENSITIVE ENVIRONMENTAL RECEPTORS 26
4.2 SOIL 26

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4.3 GEOLOGY 26
4.4 ACID SULFATE SOILS 26
4.5 HYDROGEOLOGY 27
4.6 SUMMARY OF LOCAL METEOROLOGY 28
5 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN 29
6 DATA QUALITY OBJECTIVES 30
6.1 STEP 1 – STATE THE PROBLEM 30
6.1.1 Problem Statement 30
6.1.2 Objectives 30
6.1.3 Project Team 31
6.1.4 Preliminary Conceptual Site Model 31
6.2 STEP 2 - IDENTIFY THE DECISIONS OF THE STUDY 32
6.3 STEP 3 - IDENTIFY INFORMATION INPUTS 32
6.4 STEP 4 – DEFINE THE STUDY BOUNDARIES 33
6.5 STEP 5 – DEVELOP THE ANALYTICAL APPROACH 33
6.6 STEP 6 - SPECIFY LIMITS ON DECISION ERRORS 34
6.7 STEP 7 - OPTIMISE THE DESIGN FOR OBTAINING DATA 36
7 DATA QUALITY INDICATORS 37
7.1 GENERAL 37
7.2 COMPLETENESS 37
7.3 COMPARABILITY 38
7.4 REPRESENTATIVENESS 39
7.5 PRECISIONS 39
7.6 ACCURACY 40
8 SITE INVESTIGATION AND SCREENING LEVELS 41
8.1 GENERAL 41
8.2 SOIL INVESTIGATION AND SCREENING LEVELS 41
8.2.1 Health Investigation Levels (HILs) 41
8.2.2 Health Screening Levels (HSLs) 41
8.2.3 Ecological Investigation Levels (EILs) 42
8.2.4 Ecological Screening Levels (ESLs) 43
8.2.5 Petroleum Hydrocarbon Management Limits 43
8.2.6 Asbestos 44
8.3 EXPORT OF WASTE 44
9 SOIL INVESTIGATION 45
9.1 GENERAL METHODOLOGY 45
9.2 SAMPLING DESIGN RATIONALE 45
9.3 SAMPLING DENSITY AND SAMPLING DEPTH 46
9.4 SAMPLING METHODOLOGY 46
9.5 FIELD TESTS 46
9.6 SOIL LABORATORY ANALYSIS 47
10 QUALITY ASSURANCE / QUALITY CONTROL 48
10.1 FIELD QA/QC 48
10.1.1 General 48
10.1.2 Field Duplicates 48
10.1.3 Rinsates 48
10.1.4 Trip Blanks / Spikes 49

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10.1.5 Sample Handling, Storage and Transport *49*
10.1.6 Decontamination Procedures *50*
10.1.7 Calibration of Equipment *50*
10.2 LABORATORY QA/QC 51
10.2.1 Laboratories Used *51*
10.2.2 Holding Times *51*
10.2.3 Test Methods and Practical Quantitation Limits *51*
10.3 QA/QC DATA EVALUATION 52
11 FIELD OBSERVATIONS 54
11.1 GEOLOGY 54
11.2 FIELD HEADSPACE RESULTS 54
12 LABORATORY RESULTS 55
12.1 GENERAL 55
12.2 SOIL RESULTS 55
12.2.1 Heavy Metals *55*
12.2.2 TRH, BTEX, NAPHTHALENE &/OR BENZO(a)PYRENE *56*
12.2.3 PAH & OCP *57*
12.2.4 Asbestos *57*
13 DISCUSSION OF RESULTS 58
14 CONCEPTUAL SITE MODEL 59
14.1 CONCEPTUAL SITE MODEL 59
14.2 DATA GAPS 60
15 CONCLUSION AND RECOMMENDATIONS 61
LIMITATIONS 63
REFERENCES 65

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LIST OF TABLES

Table 1: Site Identification.....15
Table 2: Surrounding Land Uses 17
Table 3: Land Title Information 18
Table 4: Summary of Historical Aerial Photos.....19
Table 5: Summary of Registered Groundwater Bore Records 28
Table 6: Summary of Potential Areas and Contaminants of Concern 29
Table 7: Project Team and Responsibilities.....31
Table 8: Conceptual Site Model 31
Table 9: Acceptable Limits for QC Samples 33
Table 10: Data Completeness 37
Table 11: QA/QC Requirements.....38
Table 12: Data Comparability.....38
Table 13: Data Representativeness 39
Table 14: Data Precision.....40
Table 15: Data Accuracy 40
Table 16 Health screening levels for asbestos contamination in soil 44
Table 17: QA/QC Sampling Frequency.....48
Table 18: Soil Field Duplicate Samples.....48
Table 19: Rinsate Samples.....48
Table 20: Trip Blank/rip Spikes.....49
Table 21: Summary of Geological Observations.....54
Table 22: Conceptual Site Model 60

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LIST OF FIGURES

Figure 1: Site Locality

Figure 2: Site Lot and DP Numbers

Figure 3: Site Features

Figure 4: Groundwater Contours

Figure 5: Borehole Locations on Aerial View

Figure 6: Borehole Locations on Proposed Development Plan

Figure 7: Hotspot Locations

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LIST OF APPENDICES

APPENDIX A: SITE PLANS

APPENDIX B: PROPOSED DEVELOPMENT PLANS & SITE SURVEY PLANS

APPENDIX C: SITE PHOTOGRAPHS

APPENDIX D: LOTSEARCH REPORT AND LAND TITLES

APPENDIX E: LOCAL METEOROLOGY

APPENDIX F: BOREHOLE LOGS

APPENDIX G: FIELD RECORD FORMS / CALIBRATION CERTIFICATES

APPENDIX H: REGULATORY CRITERIA

APPENDIX I: LABORATORY TECHNICAL INFORMATION

APPENDIX J: LABORATORY CERTIFICATES

APPENDIX K: SUMMARY OF RESULTS

APPENDIX L: QA/QC ASSESSMENT

APPENDIX M: IMPORTANT INFORMATION ABOUT YOUR ENVIROMNMENTAL REPORT

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ABBREVIATIONS

ADWG	Australian Drinking Water Guidelines
ANZECC	Australian and New Zealand Environment and Conservation Council
AST	Aboveground Storage Tank
BGL	Below Ground Level
BTEX	Benzene, Toluene, Ethyl benzene and Xylene
COC	Contaminants of Concern
DLWC	Department of Land & Water Conservation
DNR	Department of Natural Resources
DQOs	Data Quality Objectives
POEO	Protection of the Environment Operations
DSI	Detailed Site Investigation
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
HIL	Health-Based Soil Investigation Level
LGA	Local Government Area
NEHF	National Environmental Health Forum
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NHMRC	National Health and Medical Research Council
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photo Ionisation Detector
PQL	Practical Quantitation Limit
PSH	Phase Separated Hydrocarbon
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance / Quality Control
RAC	Remediation Acceptance Criteria
RAP	Site Remediation Plan
RPD	Relative Percentage Difference
SAC	Site Assessment Criteria
SCID	Stored Chemical Information Database
SEPP	State Environment Planning Policy
SMP	Site Management Plan
SVC	Site Validation Criteria
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VHC	Volatile Halogenated Compounds

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EXECUTIVE SUMMARY

Aargus Pty Ltd ('Aargus') was appointed by Montefiore (the 'client') to undertake a Detailed Site Investigation ('DSI') within the properties located at 116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW (the 'site'). It is understood that the site is proposed for the demolition of existing buildings on Gaza Avenue, Barons Crescent and the northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility.

At the time of the inspection (15th August 2022), the site was mainly used for Montefiore aged care/retirement facility and occupied by a main heritage listed building comprising office, reception and bedrooms in the central eastern portion of the site. A dozen smaller residential dwellings along the Gaza Road in the western boundary was observed. The concrete access ways, a bitumen sealed car park area in the central west portion was evident and the large garden /grassed areas with well-established significant trees inside the perimeter.

The land title information provided suggested that the site is owned by private individuals and/or The Sir Moses Montefiore Jewish Home. The aerial photography indicated that the land use of the site appeared to have been used for residential and commercial purposes from at least 1943 to 2022 and the central portion of the site was subsequently re-developed for commercial land use between 1955 and 1991, comprising a car parking area in the central portion adjacent to a building of commercial nature. From 1991 to 2022 the structures appear to remain generally unchanged with the exception of some alterations in the building in the central and the south-eastern section of the site.

The whole of the aged care portion of the Montefiore site is identified as a heritage item, however, it is the Garden associated with Montefiore Home that is specifically referred to within the listing contained on the NSW Heritage Inventory - "Garden, 'Montefiore Home'".

The desktop study identified some areas of potential environmental concern, in relation to imported fill of unknown origin, pesticide use, previous site uses, leaks of motor vehicles, metal degradation, and potential presence of hazardous materials in current or past building structures, which may pose risks to human and environmental receptors.

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The soil assessment revealed the following:

- All of heavy metals concentrations from the soil samples analysed were below the HIL 'A', EILs and/or site derived EILs
- The TPH and BTEXN concentrations were below the HSL 'A&B'.
- The TPH, BTEX and benzo(a)pyrene concentrations were below the ESL for a fine / coarse grained soil texture in an "urban residential and public open space" environment with the exception of:
    - TRH F3 (C16-C34) concentrations of 670mg/kg, 650mg/kg, 520mg/kg and 640mg/kg in samples BH17 (0–0.1m), BH21 (0–0.1m), BH39 (0–0.1m) and Duplicate D3 (a replicate of BH39) respectively which exceeded the ESL of 300mg/kg.
- The TPH concentrations were below the Management Limits.
- The benzo(a)pyrene as TEQ, Total PAH and/or OCP concentrations were below the HIL 'A', ESLs and/or EILs.
- Asbestos was not detected in any of the recovered samples analysed with the exception of:
    - BH3 (0–0.1m) where Chrysotile, Amosite & Crocidolite Asbestos was detected at a concentration of 0.00013%w/w which was below the FA of 0.001%w/w.
    - BH4 (0-0.1m) where Chrysotile & Amosite Asbestos was detected at a concentration of 0.005%w/w which exceeded the FA of 0.001%w/w.

The locations of the hotspots are shown in Figure 7 in Appendix A.

Based on the CSM, the following data gaps were identified with respect to the pollution linkages identified:

- The lateral and/or vertical extent of the impacted soils at locations BH4, BH17, BH21, BH39 & D3.
- The quality of soils under the existing site structures following demolition.

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Based on the results of this investigation it is considered that the risks to human health and the environment associated with soil contamination at the site are low within the context of the proposed use of the site for the demolition of existing buildings on Gaza Avenue, Barons Crescent and northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility development.

The site is therefore considered to be rendered suitable for the proposed use, subject to the following:

- An appropriate remedial / management strategy is developed, culminating in preparation of a Remedial Action Plan (RAP) in accordance with EPA guidelines, in regard to addressing for the data gaps across the site, in particular the contaminated topsoil materials in the proposed development area.
- Any soils requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

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1 INTRODUCTION

1.1 Background

Aargus Pty Ltd ('Aargus') was appointed by Montefiore (the 'client') to undertake a Detailed Site Investigation ('DSI') within the properties located at 116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW (the 'site'). The location of the site is presented in Figure 1 of Appendix A.

It is understood that the site is proposed for the demolition of existing buildings on Gaza Avenue, Barons Crescent and the northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility. The proposed development plans can be found in Appendix B.

A site investigation was requested by the Council of Municipality of Hunters Hill to determine the potential for onsite contamination as part of the Development Application (DA).

1.2 Objective

The primary objectives of this DSI are as follows:

- Identify potential areas where contamination may have occurred from current and historical activities;
- Identify potential contaminants associated with potentially contaminating activities;
- Assess the potential for soils to have been impacted by current and historical activities; and
- Assess the suitability of the site for the demolition of existing buildings on Gaza Avenue, Barons Crescent and northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility based on its current condition and the findings of this investigation.

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1.3 Scope of Works

The scope of work for this DSI includes:

- Review of the physical site setting and site conditions based on a site inspection, including research of the location of sewers, drains, holding tanks and pits, spills, patches of discoloured vegetation, etc. (where applicable);
- Research and review of the information available, including current and historical titles information, review of aerial photographs, groundwater bore searches, EPA notices, anecdotal evidence, site survey and site records on waste management practices;
- Development of a preliminary Conceptual Site Model (CSM) to demonstrate the interactions between potential sources of contamination, exposure pathways and human/ecological receptors identified;
- A targeted soil boring/sampling investigative study – formulating and conducting a sampling plan and borehole investigation;
- Laboratory analysis and results from sample analysis – findings and comparison to regulatory guidelines;
- Field and laboratory Quality Assurance/Quality Control (QA/QC); and
- Recommendations for additional investigations should any data gaps be identified or possible strategies for the management of the site, where relevant.

This report was prepared with reference to the NSW Environment Protection Authority (EPA) "*Guidelines for Consultants Reporting on Contaminated Sites*" (2020).

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2 SITE IDENTIFICATION AND DESCRIPTION

2.1 Site Identification

Site identification information and land use are summarised in the table below.

Table 1: Site Identification

Lot and DP Number (Address)	Lots 50 & 51 in DP16119 (45-47 Barons Crescent, Hunters Hill) Lots 52 to 61 in DP16119 (20-2 Gaza Avenue, Hunters Hill) Lots 62 & 63 in DP16119 (116-118 High Street, Hunters Hill) Lots 1 & 2 in DP325793 (49-51 Barons Crescent / 120 High Street, Hunters Hill) Lots 9 & 10 in DP724017 (49-51 Barons Crescent / 120 High Street, Hunters Hill) Lot 2 in DP312298 (49-51 Barons Crescent / 120 High Street, Hunters Hill)
Coordinates *	NE: Latitude: - 33.821205, Longitude: 151.144642 SE: Latitude: -33.823598 Longitude: 151.14495 SW: Latitude: 33.82255 Longitude: 151.142482 NW: Latitude: 33.820756 Longitude: 151.14371
Approx. Site Area	40,652m^2
Local Government Area	Municipality of Hunter's Hill
Parish	Hunters Hill
County	Cumberland
Current Land Zoning**	R2 - Low Density Residential: (pub. 1-2-2013)
Proposed Land Use	Low-Density Residential
Current Site Owner	Montefiore Jewish Home- Hunters Hill Community Home
Site End Users	Residents (adults), workers, visitors

Notes: * refer to http://maps.six.nsw.gov.au/
** refer to Marrickville Zoning Map published in http://www.legislation.nsw.gov.au/map/5200_COM_LZN_004_010_20131016.pdf?id=b0025a54-2fc2-6a60-cd0d-c7b306182be9

The site boundary and Lot and DP numbers are presented in Figure 2 of Appendix A. A survey plan provided by the client is included in Appendix B.

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2.2 Site Inspection

A site visit was carried out on Tuesday 23rd August 2022 by Aargus field scientists to inspect the site for any potential sources of contamination and document any observations made regarding the current site conditions. At the time of the site inspection, the following observations were made:

- The site is bound by High Street to the south, Barons Crescent to the east and north, and Gaza Avenue to the northwest.
- The site is trapezoidal in shape and used for residential and aged-care purposes.
- Low density residential properties were located at 116 & 118 High Street, 2-20 Gaza Avenue and 45 & 47 Barons Crescent, comprising of single-storey dwellings constructed of brick / weatherboard and/or fibro with tile roofs, garages, sheds, driveways, and grass & tree covered front and backyards.
- The properties on High Street and Barons Crescent are occupied by the Montefiore aged care facility, with multiple various sized brick buildings with tile and/or metal roofs, concrete walkways, internal roads, asphalt car parks, and grass & tree covered open areas.
- A heritage garden area is located in the southern central portion of the site.
- The sealed surfaces throughout the site were in generally good condition.
- Driveways of residential properties on Gaza Avenue were in generally good condition with an exception of minor cracks in a few of the driveways.
- The site boundaries were defined by metal fences along all directions, with the exception of wooden fences in some areas along the western boundary of the site on Gaza Avenue.
- No surface standing water was noticed at the site.

The site features are presented in Figure 3 of Appendix A. Site photographs are included in Appendix C.

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2.3 Topography and Surface Water Drainage

The following observations were made during the site inspection carried out on the Tuesday 23rd August 2022:

- The site topography is slightly sloping towards the east along High Street and Barons Crescent towards the Lane Cove River.
- Stormwater runoff from the site is expected to flow from west to east along High Street and Barons Crescent.

Copies of the topographical survey provided by the client, including existing stormwater and sewer drainage plans, can be found in Appendix B.

2.4 Surrounding Land Uses

The surrounding land uses identified are described in the table below:

Table 2: Surrounding Land Uses

Orientation	Description
North	Barons Crescent, then residential
East	Barons Crescent then residential
South	High Street then Boronia Park
West	Gaza Avenue then residential

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3 SITE HISTORY

3.1 Land Titles

The current land title summary obtained from the NSW Department of Lands offices are summarised in the following table.

Table 3: Land Title Information

Year	**Lots 1 & 2 in DP325793, Lots 9 & 10 in DP724017 & Lot 2 in DP312298 (49-51 Barons Crescent / 120 High Street, Hunters Hill)**
2022	The Sir Moses Montefiore Jewish Home
Year	**Lots 50 & 51 in DP16119 (45-47 Barons Crescent, Hunters Hill)**
2022	The Sir Moses Montefiore Jewish Home
Year	**Lots 55 in DP16119 (14 Gaza Avenue, Hunters Hill)**
1968	Leonard Thomas Tunks
Year	**Lots 60/59/58/57/56/54/53/52 in DP16119 (4/6/8/10/12/16/18/20 Gaza Avenue, Hunters Hill)**
Between 1990-2022	The Sir Moses Montefiore Jewish Home
Year	**Lot 61 in DP16119 (2 Gaza Avenue, Hunters Hill NSW)**
2022	Dianne Elizabeth Smith
Year	**Lots 62 & 63 in DP16119 (116 & 118 High Street, Hunters Hill)**
2022	The Sir Moses Montefiore Jewish Home

In summary, the land title information provided suggested that the site is owned by private individuals and/or The Sir Moses Montefiore Jewish Home.

A copy of the land titles information obtained by Aargus can be found in Appendix D.

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3.2 Aerial Photographs

Selected aerial photographs obtained from the NSW Department of Lands were reviewed to describe the site features and surrounding areas at various timelines. A summary of the review is presented in the table below.

Table 4: Summary of Historical Aerial Photos

Year	Site	Surrounding areas
1930	The site is predominantly vacant with the exception of a building structure adjacent to the northern section of the eastern boundary, a few internal tracks/roads, and a number of structures to the west. It should be noted that the aerial photograph is of poor resolution.	N: Track then rural residential with potential agricultural activities. NE: Vacant land. S: Vacant land with tracks and creeks. W: Road then vacant land.
1943	Two big buildings were observed in the south-eastern and the central sections of the site, with numerous small structures observed across the site. Potential agricultural activities were noted in the northern portion of the site.	No apparent changes were observed from the previous photo.
1955	Various buildings were observed along the western boundary of the site which appear to be residential in nature. The numerous small structures across the site are no longer evident.	No apparent changes were observed from the previous photo, with the exception of: N: Road then more residential. W: Road then residential.
1961	The building in the central portion of the site was observed to have been extended towards the eastern boundary of the site.	No apparent changes were observed from the previous aerial image with exception of: E: Road then residential.
1965	The site layout appeared to be similar to that observed in the 1961 photo with the exception of an extension of the building in the central portion of the site. Also, a small building is observed adjacent to the middle section of the eastern boundary of the site.	No apparent changes were observed from the previous photo.
1978	Various additions and redevelopments were observed throughout the site.	No apparent changes were observed from the previous photo with an exception of increased

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Year	Site	Surrounding areas
		residential land use in all directions and increased commercial land use towards the east.
1986	Various additions and redevelopments were observed throughout the site.	No apparent changes were observed from the previous photo.
1991	Several alterations were observed in the building located in the central portion of the site. Also, the building in the south-eastern corner of the site appears to have been demolished and redeveloped as the structure of the building appears to have completely changed.	No apparent changes were observed from the previous photo.
2005	No apparent changes were observed from the previous photo.	No apparent changes were observed from the previous photo.
2016	A car park area was constructed adjacent to the building in the central portion of the site.	No apparent changes were observed from the previous photo.
2022	No apparent changes were observed from the previous photo.	No apparent changes were observed from the previous photo.

In summary, land use of the site appeared to have been used for residential and commercial purposes from at least 1943 to 2022 and the central portion of the site was subsequently re-developed for commercial land use between 1955 and 1991, comprising a car parking area in the central portion adjacent to a building of commercial nature. From 1991 to 2022 the structures appear to remain generally unchanged with the exception of some alterations in the building in the central and the south-eastern section of the site.

The general land use of the immediate site vicinity seems to have been consistently low-density residential and commercial from 1943 to 2022, with commercial development appearing to increase in the western vicinity of the site between 1978 and 2002.

Copies of current and historical aerial photographs are presented in Appendix E.

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3.3 EPA Records

3.3.1 CLM Act

The NSW EPA publishes records of contaminated sites under the Contaminated Land Management (CLM) Act 1997. The notices relate to the investigation and/or remediation of site contamination considered to pose a significant risk of harm under the definition in the CLM Act. However, it should be noted that the EPA record of Notices for Contaminated Land does not provide a record of all contaminated land in NSW.

A search of the EPA database revealed that the subject site is not listed, However**,** eight sites within a 1km radius of the site were listed.

The description of these sites can be found in the copies of the EPA records included in Appendix D.

3.3.2 Record of Notices

A search of the EPA database revealed that the subject site is not listed. However four sites within a 1km radius of the site were listed.

The description of these sites can be found in the copies of the EPA records included in Appendix D.

3.3.3 POEO Register

The NSW EPA also have a public register under section 308 of the Protection of the Environment Operations Act 1997 (the POEO Act) that contains the licensed premises.

A search of the POEO Register revealed that the site was not listed. Also, no sites were listed in the vicinity of the site.

A copy of the POEO register search is included in Appendix D

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3.3.4 Unlicensed Premises Regulated by the NSW EPA

The NSW Environment Protection Authority (EPA) maintain records of the premises where the NSW EPA is still the Appropriate Regulatory Authority (ARA) that are no longer required to be licensed under the Protection of the Environment Operations Act 1997 (POEO Act).

A search of the NSW EPA Records revealed that the site is not listed. Also, no sites were listed in the vicinity of the site.

Copies of the EPA records are included in Appendix F.

3.4 NSW Government PFAS Investigation Program

A search of the EPA database revealed that the site is not listed on the NSW Government PFAS Investigation Program and/or the Contaminated Land Database.

https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program

Copies of the EPA database are attached in Appendix D.

3.5 Unexploded Ordnance

A review of the Department of Defence website for Unexploded Ordnance showed no records for the site.

https://www.defence.gov.au/UXO/Where/Default.asp

Copies of the Department of Defence website are attached in Appendix D.

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3.6 Industrial Processes and Products Manufactured

Based on the historical information available, industrial processes are unlikely to have taken place at the site.

3.7 Former Chemical Storage and Transfer Areas

Based on the historical information available, the presence of former chemical storage and transfer areas was unlikely at the site.

3.8 Product Spill & Loss History

It was indicated by the client, that to their knowledge no serious land or water contamination had occurred.

The majority of the site is currently either occupied by a building and/ or sealed surfaces. At the time of the inspections, the sealed surfaces of the concrete slab were in generally good condition with only minor cracks observed.

3.9 Discharges to Land, Water and Air

No discharge to the land, water and air were observed.

3.10 Complaint History

There were no complaints registered for the site that has been documented.

3.11 Historical Use of Adjacent Land

It was indicated by the client that to their knowledge, the adjacent lands to the site have been used primarily for residential developments.

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3.12 Heritage Information

Although the whole of the aged care portion of the Montefiore site is identified as a heritage item it is the Garden associated with Montefiore Home that is specifically referred to within the listing contained on the NSW Heritage Inventory - "Garden, 'Montefiore Home'". Boronia Park Reserve to the south of the site is also identified as a heritage item of local significance (item no. i86). For more details, please refer to URBIS Heritage Assessment &Opportunities & Constraints report dated November 2021.

3.13 Ecological Constraint

The site is home to and surrounded by significant and well-established trees including a heritage listed garden. The heritage listed garden located to the south of the original home building remains intact as a space containing landscape heritage significance and accommodates a number of established and significant trees. In addition to this there are other significant and well-established trees across the site. In particular, these include a fig (located near the western boundary) as well as trees within the eastern and northern boundary mostly located within the Baron Crescent Road reserve.

3.13.1 Commonwealth Heritage List

No item is recorded under this category.

3.13.2 National Heritage List

No item is recorded under this category.

3.13.3 State Heritage Register

No item is recorded under this category.

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3.13.4 Environmental Planning Instrument- Heritage

Garden of Montefiore Home is the only item recorded under this category.

3.14 Discussion and Summary of Site History

Based on available information, the site historical usage is summarised as follows:

- The land title information provided suggested that the site is owned by private individuals and/or The Sir Moses Montefiore Jewish Home.
- The aerial photography indicated that the land use of the site appeared to have been used for residential and commercial purposes from at least 1943 to 2022 and the central portion of the site was subsequently re-developed for commercial land use between 1955 and 1991, comprising a car parking area in the central portion adjacent to a building of commercial nature. From 1991 to 2022 the structures appear to remain generally unchanged with the exception of some alterations in the building in the central and the south-eastern section of the site.
- The general land use of the immediate site vicinity seems to have been consistently low-density residential and commercial from 1943 to 2022, with commercial development appearing to increase in the western vicinity of the site between 1978 and 2002.
- A search of the EPA database revealed that the subject site is not listed.
- The whole of the aged care portion of the Montefiore site is identified as a heritage item, however, it is the Garden associated with Montefiore Home that is specifically referred to within the listing contained on the NSW Heritage Inventory - “Garden, ‘Montefiore Home’”.

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4 ENVIRONMENTAL SETTING

4.1 Sensitive Environmental Receptors

The nearest down-gradient watercourse is Lane Cove River, approximately 200m east and 270m south of the site.

Boronia Park Reserve is opposite the site on the southern side of High Street which comprises walking and cycling tracks, a children's playground, and playing fields approximately 10m towards the south of the site.

4.2 Soil

The Soil Landscape Map of Sydney (soil Landscape Series Sheet 9130, Scale 1:100,000, 2002), prepared by the Soil Conservation Service of NSW, indicates that the site is located within the Hawksbury and Gymea landscape areas and typically consists of residual sands associated with rock outcrop and shallow highly permeable residual soil respectively.

4.3 Geology

The Geological Map of Sydney (Geological Series Sheet 9130, Scale 1:100,000, 1983), published by the Department of Mineral Resources indicates the residual soils within the site to be underlain by Quaternary Age soils consisting of silty to peaty quartz sand, silt and clay. Ferruginous and humic cementation in places with common shell layers.

4.4 Acid Sulfate Soils

To determine whether there is a potential for acid sulfate soils to be present at the site, reference was made to the NSW Department of Land & Water Conservation (DLWC) *Acid Sulphate Soil Risk Maps* (Edition Two, December 1997, Scale 1:250,000), specifically Map No. 90 – "Prospect/Paramatta". A review of the map indicated that there is a "No known occurrence" of acid sulfate soil materials at the site, and the presence of acid sulfate soils was considered to be unlikely.

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A review of NSW Planning and Environment website confirmed that the site is located within Class 5 Acid Sulfate category list. However the site is located approximately 300m from Class 2 acid sulfate soils area.

4.5 Hydrogeology

Based on available information, our desktop study indicates that the inferred groundwater flow direction would be towards the east and south, as shown in Figure 4 in Appendix A.

A summary of the relevant information provided by the registered groundwater bore record search is provided in the following table:

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Table 5: Summary of Registered Groundwater Bore Records

GW Bore ID	Approximate Location	Intended Purpose	Depth (m bgl)	Standing Water Level (m bgl)	Salinity (mg/L)
10131094 (GW108901)	487m South West	Other	182.50	38.00	2,600
10038605 (GW202406	622m North East	Monitoring	6.00	2.10	-

A copy of the groundwater bore search records can be found in Appendix D.

4.6 Summary of Local Meteorology

The monthly rainfall of the local area can be represented by the data collected by Bureau of Meteorology (BOM) from the rainfall gauge located at Concord Golf Club, which is located approximately 4.9kms from the site. Records indicate that the mean rainfall since 1930 is 1128.5 mm.

Reference can be made to Appendix E – Local Meteorology.

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5 AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

Based on the site inspection, site history, previous reports and review of available information from the desktop study, the potential Areas of Environmental Concern (AEC) and their associated Contaminants of Concern (CoC) for the site were identified. These are summarised in the following table.

Table 6: Summary of Potential Areas and Contaminants of Concern

Potential AEC	Potentially contaminating activity	Potential CoCs	Potentially Impacted Medium	Likelihood of Site Impact	Justification
Entire site	Importation of fill material from unknown origin	Metals, TPH, BTEX, PAH, OCP, PCB, Asbestos	Soil	Low	Based on the current site observations, the presence of imported fill material is likely to be minimal.
	Potential for pesticides to have been sprayed or injected on or underneath concrete slabs	OCP	Soil	Low	If use of OCPs has occurred, the impact is likely to have been localised and limited to the top layer.
Northern Portion	Agricultural activities	Metals, OCP	Soil	Low	If these activities occurred, the impact is likely to have been localised and limited to the top layer.
Driveway / car parking	Leaks from vehicles	Metals, TPH, BTEX, PAH	Soil	Low	No major cracks were observed in the car park / driveway. At the time of the recent inspection, no odours or staining were observed.
Metal features	Degradation of metals	Metals	Soil	Low	If occurred, the impact is likely to have been localised and limited to the top layer.
Former building structures	Potential Asbestos/Fibro Features	Asbestos	Soil	Low	If occurred, the impact is likely to have been localised and limited to the top layer.

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6 DATA QUALITY OBJECTIVES

6.1 Step 1 – State the Problem

6.1.1 Problem Statement

The site is proposed for the demolition of existing buildings on Gaza Avenue, Barons Crescent and northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility. As part of the DA application, it is a Council requirement that a site investigation report be prepared by a consultant to assess whether the site is suitable for the proposed development.

However, the desktop study identified some areas of potential environmental concern, in relation to imported fill of unknown origin, pesticide use, previous site uses, leaks of motor vehicles, metal degradation, and potential presence of hazardous materials in current or past building structures, which may pose risks to human and environmental receptors.

6.1.2 Objectives

The objectives of the DSI are:

- Identify potential contaminants associated with potentially contaminating activities;
- Assess the potential for soils to have been impacted by current and historical activities; and
- Assess the suitability of the site for the demolition of existing buildings on Gaza Avenue, Barons Crescent and northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility based on its current condition and the findings of this investigation.

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6.1.3 Project Team

The nominated core project team and their responsibilities are listed in the table below.

Table 7: Project Team and Responsibilities

Project Team Member	Responsibilities
Mark Kelly – Principal Environmental Scientist	Project Director
Dr. Ilia Rostami – Principal Environmental Consultant	Project Manager & Technical Review
Divyansh Kumar – Environmental Scientist	Field Representative & Report Author
Sagar Koirala – Environmental Scientist	Field Representative

6.1.4 Preliminary Conceptual Site Model

The preliminary CSM, based on the PSI, is summarised in the table below.

Table 8: Conceptual Site Model

Potential Sources	Potential Receptor	Potential Exposure Pathways	Complete Linkages	Risk	Justification
Fill materials Pesticide use Agricultural activities Car parking Metal degradation Former building structures	Site users or the general public	Dermal contact, inhalation or ingestion of exposed impacted soils	Limited (Current)	Low	The site has sealed and open areas.
			No (Future)	Negligible	If present, contaminated soils are likely to be remediated and removed for off-site disposal.
	The aquatic ecosystems at the nearby creeks	Migration of impacted groundwater and surface water run-off	Yes (Current)	Low	No obvious sources of contamination were observed on site that could migrate off site with surface water run-off.
			No (Future)	Negligible	Any sources of contamination will be removed.
	Underlying Aquifer	Leaching and migration of contaminants through groundwater infiltration	Limited (Current)	Low	Leachability of metals and other inorganics vertical migration of contaminants is likely to be limited.
			No (Future)	Negligible	If present, contaminated soils are likely to be remediated.
Asbestos in current buildings	Site user or visitors	Inhalation of airborne fibres	Limited (Current)	Low	If present, they are likely to be in a bonded form.

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Potential Sources	Potential Receptor	Potential Exposure Pathways	Complete Linkages	Risk	Justification
			No (Future)	Negligible	If present, contaminated soils are likely to be remediated.

6.2 Step 2 - Identify the Decisions of the Study

The decisions required to address the contamination problem are as follows:

- Is soil contamination present within the areas of potential environmental concern identified?
- Is soil contamination likely to present an unacceptable risk of harm to humans or the environments?
- Is the site currently suitable for the proposed land use being residential with access to soil?
- Is there a potential for onsite/offsite migration issues?
- If not, does the site require further investigation and/or remediation works?

6.3 Step 3 - Identify Information Inputs

The following information is required for input into the decisions identified in Step 2:

- Identification of potential areas and contaminants of concern as detailed in Section 5 of this report;
- Selection of soil assessment criteria from appropriate guidelines as detailed in Section 8 of this report;
- Collection of soil samples from site;
- Headspace analysis for screening of VOCs present within soils using a PID; and
- Comparison and interpretation of results against the adopted soil criteria.

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6.4 Step 4 – Define the Study Boundaries

The spatial and temporal aspects of the investigation area that the data must represent to support the decisions identified in Step 2 are as follows:

- The lateral extent of the study boundary is defined by the site boundaries as shown in the Site Location Plans (refer to Figure 1).
- The vertical extent of the study boundary is defined by the depth of the natural soils in borehole location BH29 at approximately 0.7 metres below the ground surface.

6.5 Step 5 – Develop the Analytical Approach

The acceptable limits for laboratory QA/QC parameters are shown in the table below and are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Guidelines.

Table 9: Acceptable Limits for QC Samples

Type of QC Sample	Control Limit
FIELD	
Rinsate Blanks	Analytes <LOR
Intra-Laboratory Duplicates	RPD's <50%
Inter-Laboratory Duplicates	RPD's <50%
Trip Blanks	Volatiles <LOR
Trip Spike Recovery	>70%
LABORATORY	
Method Blanks	< Laboratory LOR
Matrix Spike	Recovery targets: • Metals: 70% to 130% • Organics: 60% to 140%
Laboratory Duplicate	RPD's <30%
Laboratory Control Samples	Recovery targets: 60% to 140%
Surrogate Spike	Recovery targets: 60% to 140%

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The following conditions should be adopted:

- If the control limits are exceeded, then an assessment of the significance of the results should be carried out;
- If the results of the DQI assessment indicate that the data set is reliable, then the data set will be deemed to be acceptable for the purposes of the investigation; and
- If the measured concentrations of soil samples analysed meet their respective validation criteria, then no additional assessment is required.

6.6 Step 6 - Specify Limits on Decision Errors

There are two types of decision errors:

- **Sampling errors**, which occur when the samples collected are not representative of the conditions within the investigation area; and
- **Measurement errors**, which occur during sample collection, handling, preparation, analysis and data reduction.

These errors may lead to following (null hypothesis):

- Deciding that the site is not suitable for the proposed development when it actually is (Type I error);
- Deciding that the site is suitable for the proposed development when it is actually not (Type II error);

A 5% significance level has been selected for Type I errors on the basis that 95% of the data set will satisfy the DQIs. Therefore, the acceptable limit of the decision errors is based on a 5% probability of the hypothesis being incorrect.

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An assessment will be made as to the likelihood of a decision error being made based on:

- The acceptable limits for inter/intra laboratory duplicate sample comparisons as specified in Step 5 of the DQOs; and
- The acceptable limits for laboratory QA/QC parameters are based upon the laboratory reported acceptable limits and those stated within the NEPM Guidelines.

If the concentration of a particular contaminant of concern exceeds its assessment criteria, then a further assessment is required to address the significance of the result. Statistical analysis based on 95% UCL may be used to assess the significance of the data provided the following conditions are met:

- the arithmetic mean of the data set must be less than its respective threshold level; that is, it is acceptable for individual results to exceed its respective threshold level, but the cumulative mean of the data set of soil sample results must not exceed the threshold level;
- the standard deviation of the data set is less than 50% of the relevant threshold level; and
- no individual sample result should be greater than 250% of the relevant threshold level.

Ecological data is not included in this assessment process as ecological results cannot be statistically interpreted.

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6.7 Step 7 - Optimise the Design for Obtaining Data

The optimum design for obtaining data in order to achieve the Data Quality Objectives is as follows:

- Only NATA-accredited environmental testing laboratories will be commissioned to analyse soil samples and will implement a quality control plan conforming to the NEPM (Assessment of Site Contamination) Measure Schedule B(3) Guidelines for Analysis of Potentially Contaminated Soils;
- An assessment of the Data Quality Indicators to determine if the field procedures and laboratory analytical results are reliable;
- The investigation will be carried out by an experienced and qualified Environmental Scientist, who is trained in sampling at contaminated sites in accordance with Aargus protocols based on best practice industry standards;
- Collection of QA/QC samples at frequencies prescribed in the NEPM Guidelines; and
- In accordance with the NSW EPA "Sampling Design Guidelines" (September 1995) a minimum of fifty-two (52) sampling points for a site area of 40,652m^2 will be adopted to provide general site coverage.

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7 DATA QUALITY INDICATORS

7.1 General

The five Data Quality Indicators (DQIs) comprising completeness; comparability; representativeness; precision and accuracy provide an assessment of the reliability of field procedures and laboratory analytical results in accordance with the NEPM 2013 Schedule B2 Guidelines on Site Characterisation, Appendix C – Assessment of data quality. These are addressed in the following sub-sections.

7.2 Completeness

Data Completeness is a measure of the amount of useable data (expressed as %) from a data collection activity. The completeness is equal to the percentage of valid quality assurance and quality control results.

The assessment should address the following:

Table 10: Data Completeness

Field	Laboratory
• All critical locations are sampled; • All samples collected from critical grids and depths; • Consistency in the use of standard operating procedures, equipment, sampler; • Completion and correctness of field documentation.	• All critical samples and analytes are analysed in accordance with the DQOs; • Appropriateness of laboratory methods and PQLs.

The minimum target frequency for each type of QA/QC sample should be carried out in accordance with the following table:

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Table 11: QA/QC Requirements

Field QA/QC Sample	Frequency (Soil)
Intra-Laboratory Duplicate	1 in 20 samples
Inter-Laboratory Duplicate	1 in 20 samples
Field Blanks	1 per day (rinsate)
Trip Blank	1 per sample batch
Trip Spike	1 per sample batch

Where any of the above objectives are not achieved for particular samples, steps will be taken to rectify the non-conformance, if possible. Alternatively, data qualifiers detailing the nature of the quality problem will be documented in the report and attached to relevant data in the result summary tables.

The target for overall completeness for each data set is a minimum of 95%. A data completeness of less than 95% may be accepted where it can be justified that the non-conformance does not have a significant effect on the outcome of the results.

7.3 Comparability

Data Comparability is the confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

The qualitative assessment should address the following:

Table 12: Data Comparability

Field	Laboratory
• Consistency in the use of standard operating procedures, equipment, sampler • Consistency in the method of sample collection for each media • Quantification of influence by climatic conditions	• Consistency of analytical methods and limits of reporting (LOR) for each analyte • Whether laboratory limits of reporting are set at < 20% of the adopted site criteria value for each analyte • Consistent use of one primary and one secondary laboratory

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7.4 Representativeness

Data Representativeness is the confidence (expressed qualitatively) that data are representative of each media present on the site.

The qualitative assessment should address the following:

Table 13: Data Representativeness

Field	Laboratory
• Samples are collected in accordance with the DQOs • Receipt of samples within holding times • Receipt of intact samples • Receipt of adequately preserved samples	• All samples are extracted and analysed within their respective holding times

7.5 Precisions

Data Precision is a quantitative measure of the variability (or reproducibility) of data.

Intra-laboratory or Inter-laboratory Duplicate Samples (B) results are compared with Primary Sample (A) results using Relative Percentage Differences (RPDs) according to the following formula:

$$\%RPD = \left|\frac{A - B}{A + B}\right| \times 200$$

Duplicate sampling rates for this assessment (**for each separate sample batch**) are to be tested for all the same analytes as the primary sample:

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Table 14: Data Precision

Type of QC Sample	Control Limit
Field Intra-Laboratory Duplicate (Blind)	RPD < +/- 50%
Field Inter-Laboratory Duplicate (Split)	RPD < +/- 50%

Where the laboratory has reported results for a particular analyte below the limit of reporting for either the primary sample or a duplicate sample, the RPD is reported as 'Not Calculable' or NC. A discussion should be made as to which sample should be adopted and compared against the relevant assessment criteria. However, no discussion is required where both the primary sample and the duplicate sample for a particular analyte are below the limit of reporting.

7.6 Accuracy

Data Accuracy is a quantitative measure of the closeness of reported data to the true value. Laboratory measured recovery of analytes in lab control samples with known concentrations. Laboratory QA/QC testing is to include:

Table 15: Data Accuracy

Laboratory QA/QC Sample	Frequency
Method Blank	1 per 20 samples
Matrix Spike	1 per 20 samples
Laboratory Duplicate	Laboratory defined
Laboratory Control	Laboratory defined
Surrogate Spike	All organic samples

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8 SITE INVESTIGATION AND SCREENING LEVELS

8.1 General

Full details of the site investigation and screening levels for each potential contaminant of concern in soil identified in Section 5 are presented in Appendix H.

8.2 Soil Investigation and Screening Levels

8.2.1 Health Investigation Levels (HILs)

The NEPM presents Tier 1 Health Investigation Levels (HILs) for a broad range of chemicals such as metals, inorganics, PAHs, phenols, pesticides and other organics. The HILs are applicable to generic land uses such as residential, commercial/industrial or public open space and all soil types, generally within the first 3 metres of soil below ground level. The HILs have been applied to assess human health risks via all relevant pathways of exposure.

Based on the proposed development, soil investigation results within the site will be assessed against the **HIL 'A' -** *Residential use with gardens/accessible soils, including children's day-care centres, preschools and primary schools.*

8.2.2 Health Screening Levels (HSLs)

The NEPM presents Tier 1 Health Screening Levels (HSLs) for the following petroleum compounds and fractions:

- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- Naphthalene; and
- TPH C6-C10 and TPH >C10-C16 fractions

The HSLs are applicable to generic land uses such as residential, commercial/industrial or recreational/public open space and different soil types between the ground surface and soils >4

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metres below ground level. The HILs have been applied to assess human health risks via the inhalation and direct contact pathways of exposure.

Based on the proposed development, soil investigation results within the site will be assessed against the HSL "A & B" for residential development.

8.2.3 Ecological Investigation Levels (EILs)

The NEPM presents Ecological Investigation Levels (Interim EILs) for As, Cu, CrIII, Ni, Pb, Zn, DDT and naphthalene.

The EILs are applicable to generic land uses such as areas of ecological significance, urban residential areas and public open space, and commercial/industrial land uses. The EILs have been applied to assess risks to terrestrial ecosystems, generally, within the top 2 metres of soil at the final surface/ground level.

Site specific EILs for Copper, Zinc, Nickel and Chromium III can be derived by adding the Ambient Background Concentration (ABC) to the Added Contaminant Limits (ACL), as per the following formula $EIL = ABC + ACL$.

The ABC of a contaminant is the soil concentration in a specified locality that is the sum of the naturally occurring background level and the contaminant levels that have been introduced from diffuse or non-point sources by generating anthropogenic activity not attributed to industrial, commercial, or agricultural activities.

The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required. ACLs are based on the soil characteristics of pH, CEC and clay content. Different soils types / profiles will have different contaminant EILs rather than a single generic EIL for each contaminant. ACLs apply chromium III (CrIII), copper (Cu), nickel (Ni) and zinc (Zn) for site-specific EIL determination.

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The soil properties to be measured for site-specific derivation of ACLs for CrIII, Cu, Ni and Zn are summarised below:

- pH - Cu
- CEC - Cu, Ni, Zn
- % clay - CrIII

Note – the lowest concentration of copper that is derived from the pH or the CEC calculation is to be used for the ACL.

Insufficient data was available to derive ACLs for As, Pb, DDT and naphthalene. As a result, the derived EILs are generic to all soils and are presented as total soil contaminant concentrations in Tables 1(B)4 and 1(B)5.

8.2.4 Ecological Screening Levels (ESLs)

Table 1B (6) of the NEPM presents Ecological Screening Levels (ESLs) for TPH C6-C40 fractions, BTEX and benzo(a)pyrene.

The ESLs are applicable to generic land uses such as areas of ecological significance, urban residential areas and public open space, and commercial/industrial land uses. The ESLs have been applied to assess risks to terrestrial ecosystems, generally, within the top 2 metres of coarse or fine soil at the final surface/ground level.

8.2.5 Petroleum Hydrocarbon Management Limits

Table 1B (7) of the NEPM presents petroleum hydrocarbon management limits for application to TPH fractions C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40}. The management limits are applicable for coarse or fine soils in residential, parkland, public open space or commercial/industrial land uses following consideration of relevant ESLs and HSLs.

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Based on the proposed development, soil investigation results within the site will be assessed against the 'Residential, parkland and public open space'.

8.2.6 Asbestos

Health screening for asbestos in soil, which are based on scenario-specific likely exposure levels, are adopted from the WA DoH guidelines and are referred in Table 7 in Schedule B1.

Table 16 Health screening levels for asbestos contamination in soil

	Health Screening Level (w/w)			
Form of asbestos	**Residential A[1]**	**Residential B[2]**	**Recreational C[3]**	**Commercial/ Industrial D[4]**
Bonded ACM	0.01%	0.04%	0.02%	0.05%
FA and AF[5] (friable asbestos)	0.001%			
All forms of asbestos	No visible asbestos for surface soil			

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
3. Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.
4. Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.
5. The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.

8.3 Export of Waste

To assess the waste classification of materials to be disposed of off-site, the NSW EPA refers to the NSW EPA (2014) "*Waste Classification Guidelines, Part 1: Classifying Waste*".

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9 SOIL INVESTIGATION

9.1 General Methodology

The soil investigation was carried out on the 23rd & 24th August 2022 and was designed to meet the Data Quality Objectives. The fieldwork procedures adopted were carried out in general accordance with the Aargus fieldwork protocols, which are based on industry standard practice as prescribed in the NEPM.

Each borehole was drilled using stainless steel hand augers. The boreholes were backfilled with spoil generated from the borehole.

A description of sub-surface conditions observed during drilling are presented in borehole logs included in Appendix F.

9.2 Sampling Design Rationale

Fifty-two boreholes (BH1 to BH52) were drilled by adopting a targeted sampling pattern across the site to provide general site coverage with consideration given to accessibility, site features, the proposed development zones and/or specific areas of potential environmental concern, as summarised below:

- BH1 to BH28 – general site coverage and targeting houses, driveways, garages, and front and backyards of residential properties on Gaza Avenue.
- BH29 to BH37 – general site coverage and targeting the heritage garden area inside the aged care facility.
- BH38, BH44 & BH45 – general site coverage and targeting car parking area inside the aged care facility.
- BH39 to BH43 & BH46 to BH52 – general site coverage and targeting building structures.

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It is considered that the number of sampling points adopted meets the minimum requirements of the NSW EPA "Sampling Design Guidelines" (1995) for a site area of 40,652 m^2 and to detect a hotspot diameter of 19.9m. The borehole locations are shown in Figures 5 & 6 of Appendix A.

9.3 Sampling Density and Sampling Depth

Boreholes were advanced through topsoil material and terminated in into natural soils to allow for the collection and analysis of topsoil and/or natural soils across the site.

9.4 Sampling Methodology

Soil sampling was carried out in general accordance with Aargus Fieldwork Protocols. In summary:

- Soil samples were collected using a hand auger.
- Samples were transferred into clean laboratory supplied containers using a hand trowel.

Sampling of asbestos was undertaken as follows:

- One wetted 500ml sample was recovered.

9.5 Field Tests

A calibrated Photo-ionisation Detector (PID) meter was used to obtain the following field measurements:

- Background concentrations of ionisable volatile organic compounds (VOCs) in the ambient air taken approximately 5 to 10 metres upwind of the general work area; and

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- Headspace analysis of bagged soil samples collected to detect the presence of ionisable VOCs.

The PID readings were observed before and after each measurement of a sample to ensure that the PID was operating correctly. The procedures followed in performing field headspace on soil samples can be found in the Aargus Field Protocols.

Readings of PID maximums, fluctuations and general comments of observation were recorded in Aargus field record forms included in Appendix G. The PID calibration certificate can be found in Appendix G.

9.6 Soil Laboratory Analysis

Soil samples were submitted to their respective laboratories as specified in Section 10.2. The schedules of analysis for each sampling batch are presented in Appendix K.

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10 QUALITY ASSURANCE / QUALITY CONTROL

10.1 Field QA/QC

10.1.1 General

The frequency required for each field quality assurance / quality control (QA/QC) sample is presented in the table below.

Table 17: QA/QC Sampling Frequency

	Intra-Lab Duplicates	Inter-Lab Duplicates	Rinsates	Trip Blanks	Trip Spikes
Sampling Frequency	1 in 20 primary samples	1 in 20 primary samples	1 / Day	1 / Day	1 / Day

10.1.2 Field Duplicates

Duplicates of primary samples were collected to enable the assessment of variability in analyte concentrations between samples collected from the same sampling point. The tables below list the duplicate soil samples collected with their corresponding primary samples.

Table 18: Soil Field Duplicate Samples

Primary Sample ID	Sample Depth (m bgl)	Blind Duplicate ID	Split Duplicate ID	Date Sampled
BH8	0 – 0.1	D1	SS1	23.08.2022
BH30	0 – 0.1	D2	SS2	24.08.2022
BH39	0 – 0.1	D3	SS3	24.08.2022

10.1.3 Rinsates

Rinsate samples recovered for each day in which sampling took place to identify possible cross contamination between the sampling locations are listed in the table below.

Table 19: Rinsate Samples

Sample ID	Equipment Type	Sample Media	Date Collected
R1	Hand Auger and Hand Trowel	Soil	23 August 2022
R2	Hand Auger and Hand Trowel	Soil	24 August 2022

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10.1.4 Trip Blanks / Spikes

Trip spike and trip blank samples were collected to assess the effect of sample handling on volatile concentrations in the samples collected and are listed in the table below.

Table 20: Trip Blank/rip Spikes

Sample ID	QC Sample Type	Media	Date Collected
Tripblank	Trip Blank	Soil	23 August 2022
Tripspike	Trip Spike	Soil	23 August 2022
Tripblank1	Trip Blank	Soil	24 August 2022
Tipspike1	Trip Spike	Soil	24 August 2022

10.1.5 Sample Handling, Storage and Transport

The following sampling handling, storage and transport procedures were adopted to ensure sample integrity:

- Samples were collected in laboratory supplied containers. A list of sample preservation methods and the types of sample containers used are attached in Appendix I.
- Soil sample containers were placed immediately into a chilled cooler box and dispatched to their respective analytical laboratories on the same day. If this was not possible, samples were temporarily held overnight in the Aargus office refrigerator at a temperature of no greater than 4 ºC and dispatched the following day.
- A Chain of Custody form (COC) was completed for all samples collected and included with the samples for transport to their respective laboratories for chemical analysis. Copies of COCs are included in Appendix J.
- All glass bottles were individually bubble wrapped for protection and insulated containers/coolers were used for sample shipment.
- Disposable nitrile gloves were used for OH&S purposes and were changed between every sample location.

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10.1.6 Decontamination Procedures

The decontamination of non-dedicated sampling equipment was achieved by washing with phosphate-free detergent and tap water, followed by a final rinse with distilled water. Decontamination was conducted after the collection of samples at each sample location. A clean pair of disposable gloves was used when handling each sample.

The hand auger and hand trowel were decontaminated between sampling locations by physically removing soil material between boreholes, washing the augers with Decon 90 and rinsing them with water.

10.1.7 Calibration of Equipment

The 10.6eV lamp of the PID was calibrated with isobutylene gas at 100ppm prior to commencement of fieldwork and prior to commencement of each day's fieldwork. The battery in the PID unit was recharged after every day's use in the field.

Copies of calibration records for each relevant item of equipment used can be found in Appendix G.

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10.2 Laboratory QA/QC

10.2.1 Laboratories Used

The following NATA-accredited laboratories were commissioned to carry out laboratory analysis of soil, groundwater and soil vapour samples collected:

- Primary Laboratory – Eurofins MGT (Sydney)
- Secondary Laboratory – ALS Environmental
- ASET Environmental - conducted asbestos analysis on selected primary soil samples

These laboratories also operate Quality Systems that are designed to comply with ISO/IEC 17025. All primary samples, blind duplicates, rinsate samples, trip blank/spikes were dispatched to the primary laboratory. All split samples were dispatched to the secondary laboratory. Laboratory Certificates of Analysis are included in Appendix J.

10.2.2 Holding Times

The holding times for chemicals analysed are presented in Appendix J and were based on USEPA methods, Standard Methods for the Examination of Water and Wastewater (APHA).

10.2.3 Test Methods and Practical Quantitation Limits

The test methods adopted by the laboratories are listed in Appendix I and Practical Quantitation Limits (PQLs) adopted are specified within the Laboratory Certificates of Analysis included in Appendix J.

The methods used by the laboratories generally comply with those listed in the NEPM such as Standards Australia and International standards (US EPA SW-846, APHA 2005, ASTM 2008).

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Alternate methods may be used by the laboratories however the alternative method must be at least rigorous and reliable as the reference method, and either that:

- it has been validated against an appropriate certified reference material (CRM) on the range of soil types and concentrations most likely to be analysed. This requires adequate recovery of analytes using CRMs during method validation, as well as regular participation in national proficiency trials by bodies such as the National Measurement Institute (NMI) or Proficiency Testing Australia (PTA) or other accredited provider; and / or
- it has been verified against quantitative data generated by a laboratory that is accredited for the reference method to ISO 17025 by NATA or one of its mutual recognition agreement partners.

The laboratory should document the method performance verification and make the data available for independent audit.

10.3 QA/QC Data Evaluation

A full evaluation of the Data Quality Indicators (DQIs) for both fieldwork and laboratory procedures is presented in Appendix L. These were assessed with reference to Appendix V of the NEPM and Guidelines for the NSW Site Auditor Scheme (3rd ed.), 2017. In summary, the findings of the QA/QC evaluation indicated the following:

- Data Completeness – The data set is considered to be adequately complete.
- Data Comparability – The data set is considered to be adequately comparable. However, the following minor non-conformances were identified:
  - The analytical methods used for each analyte within each laboratory were the same, but differed between the primary and the secondary laboratories. However, all analytical methods used were endorsed by NATA and were unlikely to affect the outcome of the results.
  - Sample PQL's were the same within each laboratory but differed between MGT and ALS in a number of analytes.

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- Data Representativeness – The data set is considered to be adequately representative.
- Data Precision – The data set is considered to be adequately precise. However, the following minor non-conformances were identified:
    - All field duplicate results were within the control limit, <50%, with the exception of D1 & SS1 for Lead, D2 for Arsenic, and D3 for B(a)P as TEQ, due to the nature of soil heterogeneity.
    - Based on the laboratory's acceptance criteria, all RPDs of the laboratory duplicates were within control limits, with the exception of Arsenic. The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
- Data Accuracy – The data set is considered to be adequately accurate. However, the following minor non-conformances were identified:
    - The matrix spike recoveries were within control limits, with exception of OCP. The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation works were consistent with Aargus protocols and were found to meet the DQOs for this project.

It is therefore considered that the data is sufficiently reliable and that the results can be used for the purpose of this project.

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11 FIELD OBSERVATIONS

11.1 Geology

Based on surface and sub-surface conditions observed during the intrusive investigation, the surface and sub-surface profile across the site is summarised in the table below.

Table 21: Summary of Geological Observations

Geological Unit	Lithological Description
Topsoil	Clayey Sand, fine grained, dark grey
	Silty Sand, medium to fine grained, dark brown
	Silty Clay, medium plasticity, dark grey
Natural Soils	CLAY, medium to high plasticity, dark yellow
	Silty CLAY, medium plasticity, dark brown - yellow
	Clayey SAND, medium to fine grained, pale brown

The following additional observations were made:

- No hydrocarbon odours were encountered within any of the borehole locations.
- No hydrocarbon staining was observed within any of the borehole locations.
- No fibre-containing fragments were observed in any of the borehole samples.

We recommend that this section be read in conjunction with Figure 5 (Borehole Location Plan) in Appendix A, the Daily Work Sheets in Appendix G and the borehole logs in Appendix F.

11.2 Field Headspace Results

Ionisable VOC detections in PID readings taken from soil samples subjected to field headspace analysis were all less than 1ppm. The PID field record forms can be found in Appendix G.

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12 LABORATORY RESULTS

12.1 General

A comparison of soil laboratory results against their respective assessment criteria (as specified in Section 9) are presented in the summary tables in Appendix K. Certificates of laboratory analysis are attached in Appendix J. A discussion of the results is presented in the following sub-sections.

12.2 Soil Results

12.2.1 Heavy Metals

12.2.1.1 Health Investigation Levels (HILs)

As indicated in A1-1 to A1-3, the concentrations of the discrete heavy metals were below the Health Investigation Level (HIL) for a residential development, that being the HIL 'A'.

12.2.1.2 Ecological Investigation Levels (EILs)

As indicated in Tables A1 to A3, the arsenic concentrations were below the Ecological Investigation Level (EIL) for urban residential and public open space.

The EILs for Copper, Zinc and Nickel were derived by adding the Ambient Background Concentration (ABC) to the Added Contaminant Limits (ACL), as per the following formula *EIL = ABC + ACL*.

The ABC for the site has been determined by recovering a sample from eight appropriate reference point, that being boreholes BH4 (0.3-0.4), BH8 (0.5-0.6), BH17 (0.5-0.6), BH27 (0.4-0.5), BH29 (0.6-0.7), BH34 (0.5-0.6), BH46 (0.4-0.5) and BH50 (0.5-0.6m), all uncontaminated natural soil sample.

The ABC concentrations are summarised in Table A3.

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The results of pH and CEC for the natural soil samples are summarised in Table A2. Based on the results in Table A2, the site ACLs for Cu, Ni and Zn have been derived and are provided in Table A3.

The calculated EIL for Cu, Pb, Ni and Zn, after appropriate rounding, have been summarised in Table A3.

Therefore, as shown in Tables A1 to A3, the Cu, Pb, Ni and Zn concentrations are below the site derived EILs.

12.2.2 TRH, BTEX, NAPHTHALENE &/OR BENZO(a)PYRENE

12.2.2.1 Health Screening Levels (HSLs)

As indicated in Tables B1-1 & B1-2, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were below the HSL 'A' & HSL 'B' for a sand and clay soil profiles with a source depth of "0m to <1m".

12.2.2.2 Ecological Screening Levels (ESLs)

As indicated in Tables B2-1 & B2-2, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), benzene, toluene, ethyl benzene, xylenes and benzo(a)pyrene concentrations were below the ESL for coarse and fine grained soil texture in an "urban residential and public open space" environment with the exception of:

- TRH F3 (C16-C34) concentrations of 670mg/kg, 650mg/kg, 520mg/kg and 640mg/kg in samples BH17 (0–0.1m), BH21 (0–0.1m), BH39 (0–0.1m) and Duplicate D3 (a replicate of BH39) respectively which exceeded the ESL of 300mg/kg.

12.2.2.3 Management Limits

As indicated in Tables B3-1 & B3-2, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}) and F4 (C_{34}-C_{40}) concentrations were below the Management Limits for a coarse and fine-grained soil textures in an "residential parkland and public open space" environment.

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12.2.3 PAH & OCP

12.2.3.1 Health Investigation Levels (HILs)

As indicated in Tables C1 & C2, the concentrations of the benzo(a)pyrene (as TEQ), Total PAH & OCP below the Health Investigation Level (HIL) for a residential development, that being the HIL 'A'.

12.2.3.2 Ecological Investigation Levels (EILs)

As indicated in Tables C1 & C2, the concentrations of naphthalene and DDT/DDE/DDD were below the Ecological Investigation Level (EIL) for urban residential and public open space.

12.2.3.3 Ecological Screening Levels (ESLs)

As indicated in Tables C1 & C2, the benzo(a)pyrene concentrations were below the ESL for a coarse grained soil texture in an "urban residential and public open space" environment.

12.2.4 Asbestos

As indicated in Tables D1-1 to D1-3, no asbestos was detected in any of the samples analysed, with the exception of boreholes:

- BH3 (0–0.1m) where Chrysotile, Amosite & Crocidolite Asbestos was detected at a concentration of 0.00013%w/w which was below the FA of 0.001%w/w.
- BH4 (0-0.1m) where Chrysotile & Amosite Asbestos was detected at a concentration of 0.005%w/w which exceeded the FA of 0.001%w/w.

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13 DISCUSSION OF RESULTS

The soil assessment revealed the following:

- All of heavy metals concentrations from the soil samples analysed were below the HIL 'A', EILs and/or site derived EILs
- The TPH and BTEXN concentrations were below the HSL 'A&B'.
- The TPH, BTEX and benzo(a)pyrene concentrations were below the ESL for a fine / coarse grained soil texture in an "urban residential and public open space" environment with the exception of:
    - TRH F3 (C16-C34) concentrations of 670mg/kg, 650mg/kg, 520mg/kg and 640mg/kg in samples BH17 (0–0.1m), BH21 (0–0.1m), BH39 (0–0.1m) and Duplicate D3 (a replicate of BH39) respectively which exceeded the ESL of 300mg/kg.
- The TPH concentrations were below the Management Limits.
- The benzo(a)pyrene as TEQ, Total PAH and/or OCP concentrations were below the HIL 'A', ESLs and/or EILs.
- Asbestos was not detected in any of the recovered samples analysed with the exception of:
    - BH3 (0–0.1m) where Chrysotile, Amosite & Crocidolite Asbestos was detected at a concentration of 0.00013%w/w which was below the FA of 0.001%w/w.
    - BH4 (0-0.1m) where Chrysotile & Amosite Asbestos was detected at a concentration of 0.005%w/w which exceeded the FA of 0.001%w/w.

The locations of the hotspots are shown in Figure 7 in Appendix A.

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14 CONCEPTUAL SITE MODEL

14.1 Conceptual Site Model

The refined Conceptual Site Model (CSM) presented in the table below provides a representation of the potential risks associated with the linkages between the following elements:

- Potential contamination sources and their associated contaminants of concern identified in Section 5. Only potential areas of concern with a significance rating of low to high were included;
- Potential human receptors that may be impacted by site contamination are current and future end-users, construction workers and the general public within the immediate vicinity;
- Potential environmental receptors identified in Section 4.1;
- Potential exposure pathways; and
- Whether each source-pathway-receptor pollution linkage are complete, limited or not present, based on current and future site conditions.

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Table 22: Conceptual Site Model

Potential Sources	Potential Receptor	Potential Exposure Pathways	Complete Linkages	Risk	Justification
TRH F3 in BH17, BH21, BH39 & D3	Site users or the general public	Dermal contact, inhalation or ingestion of exposed impacted soils	Limited (Current)	Low	Direct contact with impacted soils is limited to the grassed areas.
			No (Future)	Negligible	Contaminated soils are to be remediated and disposed of off-site disposal.
		Inhalation or ingestion of exposed impacted soils	Limited	Low	Direct contact with impacted soils is limited.
			No (Future)	Negligible	Contaminated soils are to be remediated and disposed of off-site disposal.
Asbestos in BH4	Site user or visitors	Inhalation of airborne fibres	Limited (Current)	Low	Direct contact with impacted soils is limited to the grassed areas.
			No (Future)	Negligible	Contaminated soils are to be remediated and disposed of off-site disposal.

14.2 Data Gaps

Based on the CSM, the following data gaps were identified with respect to the pollution linkages identified:

- The lateral and/or vertical extent of the impacted soils at locations BH4, BH17, BH21, BH39 & D3.
- The quality of soils under the existing site structures following demolition.

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15 CONCLUSION AND RECOMMENDATIONS

Based on the results of this investigation it is considered that the risks to human health and the environment associated with soil contamination at the site are low within the context of the proposed use of the site for the demolition of existing buildings on Gaza Avenue, Barons Crescent and northern & central portion of High Street, and redevelopment into seven new buildings with basement car parking as part of the existing Aged Care/retirement Facility development.

The site is therefore considered to be rendered suitable for the proposed use, subject to the following:

- An appropriate remedial / management strategy is developed, culminating in preparation of a Remedial Action Plan (RAP) in accordance with EPA guidelines, in regard to addressing for the data gaps across the site, in particular the contaminated topsoil materials in the proposed development area.
- Any soils requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

If during the remaining site works, significant odours and / or evidence of gross contamination not previously detected are encountered, or any other significant unexpected occurrence, site works should cease in that area, at least temporarily, and the environmental consultant should be notified immediately to set up a response to this unexpected occurrence.

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Thank you for the opportunity to undertake this work. We would be pleased to provide further information on any aspects of this report.

For and on behalf of

Aargus Pty Ltd

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Environmental Engineer
(ME Environmental)
(BE Mechanical)

Reviewed By:

Rostami Ilia

Ilia Rostami
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Licensed Asbestos Assessor-Class A

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LIMITATIONS

The Aargus assessment is based on the result of limited site investigations and sample testing. Neither Aargus, nor any other reputable consultant, can provide unqualified warranties nor does Aargus assume any liability for site conditions not observed or accessible during the time of the investigations.

Despite all reasonable care and diligence, the materials encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions, truck movement or contractor movement of soils and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to Aargus investigations and assessment.

This report and associated documentation and the information herein have been prepared solely for the use of the client at the time or writing the report and is valid (for the purposes of management or transport of material) for a period of one month only from the date of issue. Any other reliance assumed by third parties on this report shall be at such parties' own risk. Any ensuing liability resulting from use of the report by third parties cannot be transferred to Aargus.

Whilst this report provides a review of site conditions encountered at sampling locations within the investigation, it should be noted that if materials are proposed to moved from site - Part 5.6, Section 143 of the Protection of the Environment Operations (POEO) Act 1997 states that is an offence for waste to be transported to a place that cannot lawfully be used as a facility to accept that waste. It is the duty of the owner and transporter of the waste to ensure that all material removed from a site must be accompanied by an appropriate waste classification report and materials are disposed of appropriately. An environmental or validation report does not constitute a waste classification report and results are treated differently. Aargus accepts no

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liability for the unlawful disposal of waste materials from any site. Aargus does not accept any responsibility for the material tracking, loading, management, transport or disposal of waste from the site. If material is to be removed from a site, before disposal of any material to a licensed landfill is undertaken, the site owner must ensure an appropriate waste classification exists for all materials on the site planning to be removed, the waste producer will need to obtain prior consent from the licensed landfill/recycler. The receiving site should check to ensure that the material received matches the description provided in the report.

Opinions are judgements, which are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions.

Appendix M – Important information about your environmental site report should also be read in conjunction with this report.

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REFERENCES

This report was prepared with reference to the following guiding documents:

- NSW Department of Planning and Environment (2022) – The State Environmental Planning Policy (Resilience and Hazards) 2021: "Chapter 4 – Remediation of Land".
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1).
- NSW DEC "Guidelines for the NSW Site Auditor Scheme" (2017, 3rd edition). NSW Environment Protection Authority, Sydney.
- NSW EPA (2014) – "Waste Classification Guidelines, Part 1: Classifying Waste".
- NSW EPA "Guidelines for Consultants Reporting on Contaminated Sites" (2020). NSW Environment Protection Authority, Sydney.
- NSW EPA "Sampling Design Guidelines" (1995). NSW Environment Protection Authority, Sydney.
- URBIS Heritage Assessment &Opportunities & Constraints report dated November 2021.

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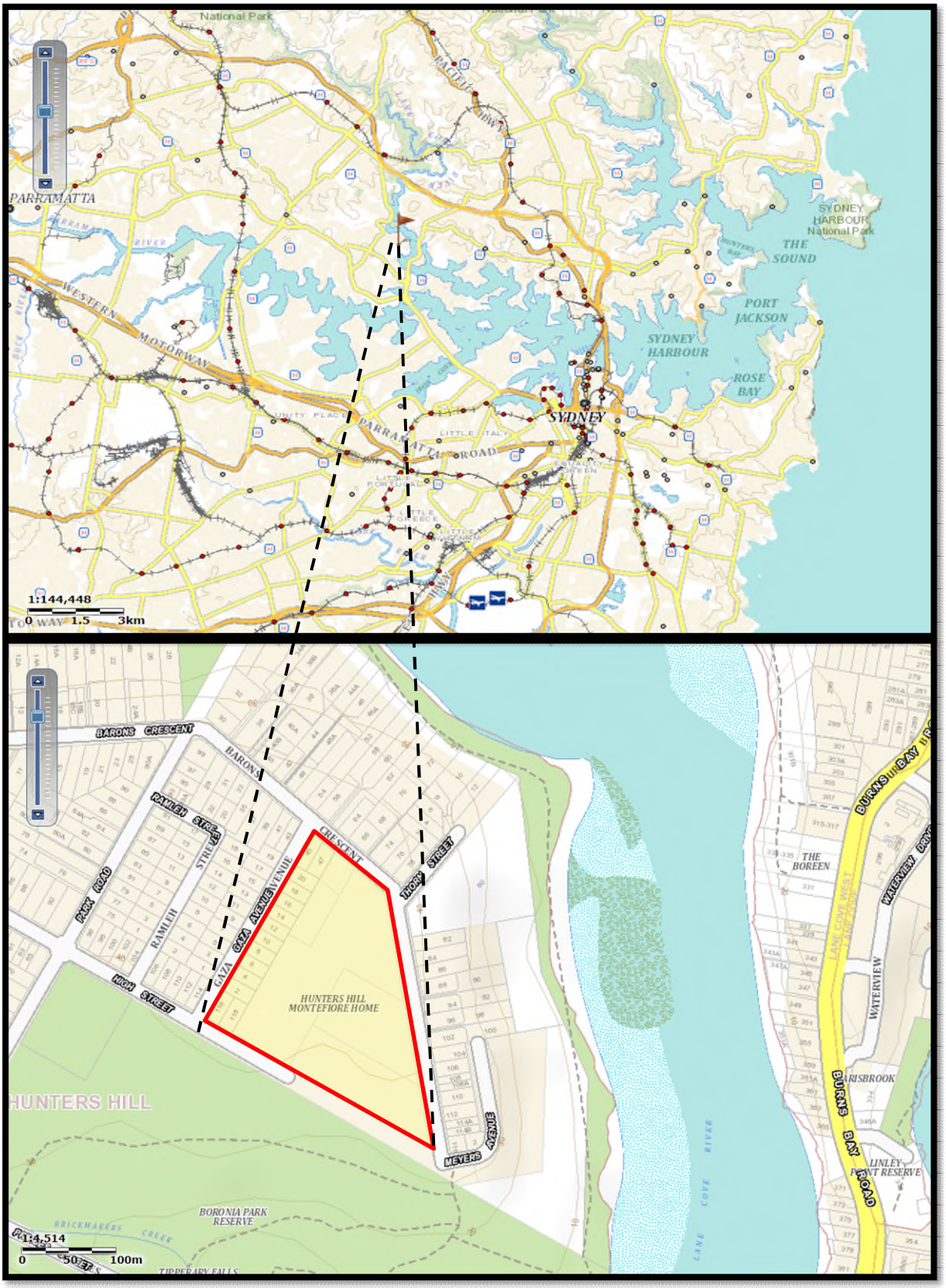
APPENDIX A

SITE PLANS

SITE LOCALITY MAP

N



PROJECT DETAILS		DRAWING DETAILS			
Project Title	Detailed Site Investigation	**Figure No.**	1	**Rev No.**	0
Project No.	ES8561	**Scale**	As above	**Size**	A4
Client	Montefiore	**Drawn by**	DK	**Date**	15.09.2022
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW	**Approved by**	MK	**Date**	29.09.2022

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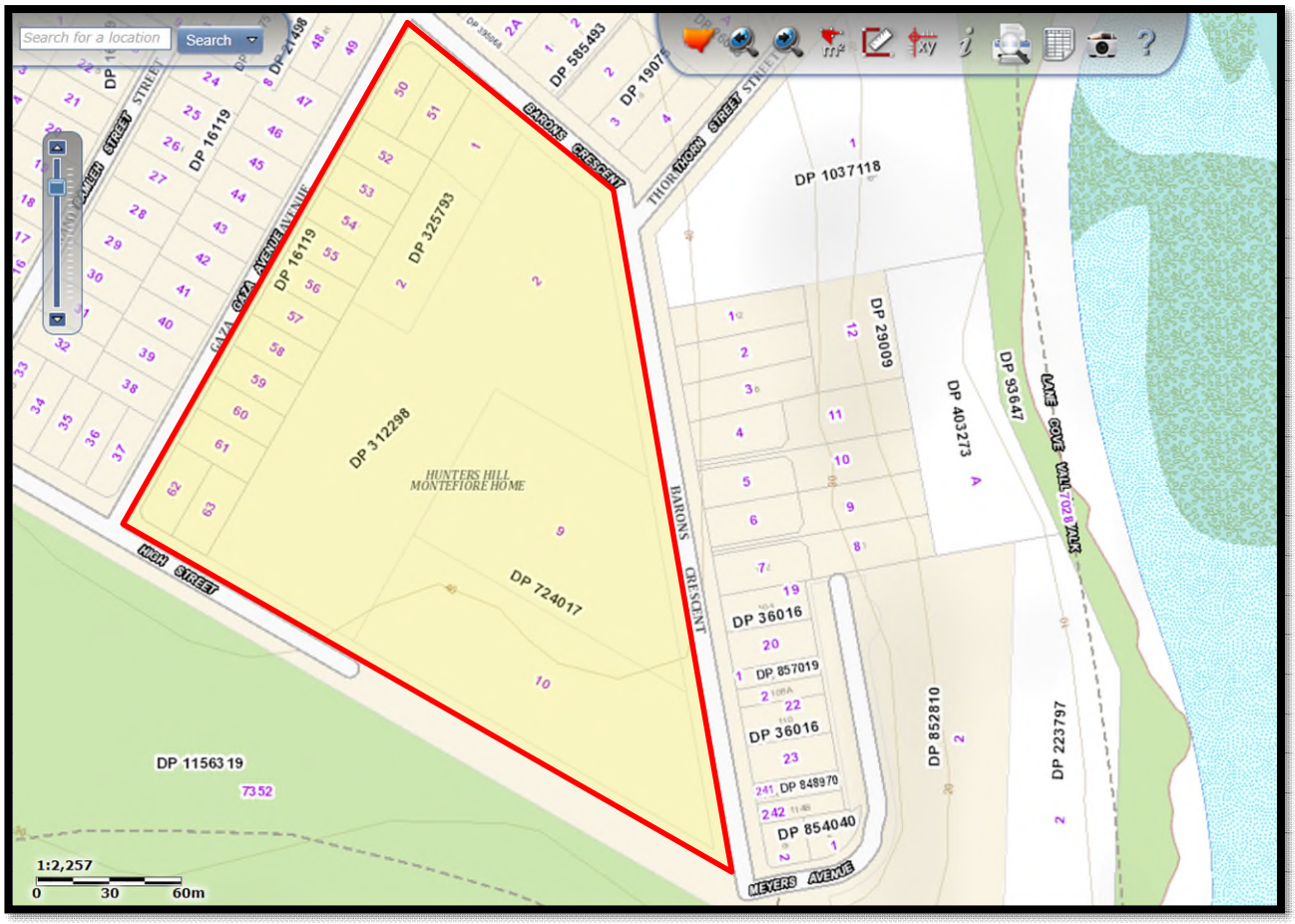
SITE PLAN – LOT & DEPOSITED PLAN

N



PROJECT DETAILS		DRAWING DETAILS			
Project Title	Detailed Site Investigation	**Figure No.**	2	**Rev No.**	0
Project No.	ES8561	**Scale**	As above	**Size**	A4
Client	Montefiore	**Drawn by**	DK	**Date**	15.09.2022
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW	**Approved by**	MK	**Date**	219.09.2022

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SITE FEATURES

N

SITE FEATURES - LEGEND

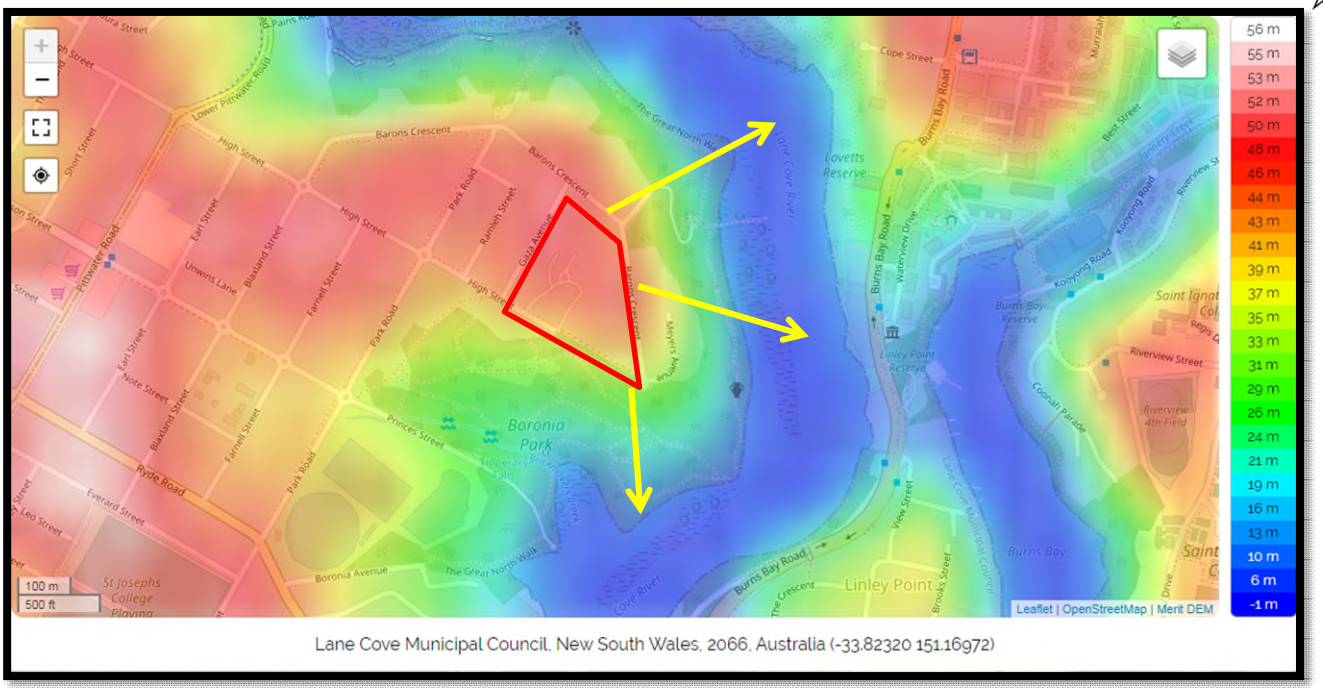
- Site boundary
- Heritage area – Main building
- Heritage garden area with trees and grass landscape
- Single-storey residential dwellings on Gaza Avenue
- Asphalt car park

PROJECT DETAILS	
Project Title	Detailed Site Investigation
Project No.	ES8561
Client	Montefiore
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW

Aargus

DRAWING DETAILS			
Figure No.	3	**Rev No.**	0
Scale	As above	**Size**	A4
Drawn by	DK	**Date**	05.09.2022
Approved by	MK	**Date**	29.09.2022

INFERRED GROUNDWATER FLOW DIRECTION



SITE FEATURES - LEGEND

Inferred Groundwater Flow Direction

Site Boundary

PROJECT DETAILS			DRAWING DETAILS			
Project Title	Detailed Site Investigation	Aargus	**Figure No.**	4	**Rev No.**	0
Project No.	ES8561		**Scale**	As above	**Size**	A4
Client	Montefiore		**Drawn by**	DK	**Date**	15.09.2022
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW		**Approved by**	MK	**Date**	29.09.2022

BOREHOLE LOCATIONS

N

LEGEND

- Site Boundary
- Sampling Locations

Source: http://maps.six.nsw.gov.au/

ABN 75 050 212 710 Aargus Pty Limited Environment – Remediation – Geotechnical Engineering

PROJECT DETAILS	
Project Title	Detailed Site Investigation
Project No.	ES8561
Client	Montefiore
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW

Aargus

DRAWING DETAILS			
Figure No.	5	Rev No.	0
Scale	As above	Size	A3
Drawn by	JJ	Date	20.09.2022
Approved by	MK	Date	29.09.2022

Borehole Locations on Proposed Development Plan

Source: Architectural drawing

LEGEND

- Site Boundary
- Sampling Locations

ABN 75 050 212 710 Aargus Pty Limited Environment – Remediation – Geotechnical Engineering

PROJECT DETAILS	
Project Title	Detailed Site Investigation
Project No.	ES8561
Client	Montefiore
Site Address	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW

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DRAWING DETAILS			
Figure No.	6	Rev No.	0
Scale	As above	Size	A3
Drawn by	JJ	Date	21.09.2022
Approved by	MK	Date	29.09.2022

APPENDIX B

PROPOSED DEVELOPMENT PLANS

Refer to Jackson Teece Masterplan as part of Planning Proposal package

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BARONS CRESCENT
THORN STREET
GAZA AVENUE
HIGH STREET
(NOT FORMED)
(BUSHLAND)
MEYERS AVENUE
BORONIA PARK
DIRT CAR PARKING
SITE BOUNDARY
DP 1037118
DP 16119
DP 407472
DP 395068
DP 585549
DP 19075
DP 854040
No.2 GAZA AVENUE
TWO STOREY BRICK BUILDING
TWO STOREY BRICK BUILDING (PARKING BELOW)
REND. BRICK BUILDING
BRICK BUILDING
NOTE: NOT ALL EXISTING STRUCTURES ON SITE ARE SHOWN ON THIS PLAN
NOTE: NOT ALL EXISTING STRUCTURES/WINDOWS ACCESSIBLE AT TIME OF SURVEY
NOTE 1
MANHOLE NOT SIGHTED
BRICK HOUSE No. 54
2 STOREY REND. BRICK HOUSE No. 56
2 STOREY BRICK HOUSE No. 64
BRICK HOUSE No. 68
BRICK HOUSE No. 74
2 STOREY BRICK HOUSE No. 76
2 STOREY REND. BRICK HOUSE No. 78
BRICK & W/BOARD HOUSE No. 82
2 STOREY BRICK HOUSE No. 84
2 STOREY BRICK HOUSE No. 86
BRICK HOUSE No. 88
BRICK HOUSE No. 94
2 STOREY REND. BRICK HOUSE No. 96
BRICK HOUSE No. 102
2 STOREY BRICK HOUSE No. 104
2 STOREY BRICK HOUSE No. 106
2 STOREY SEMI-DETACHED BRICK HOUSE No. 108
2 STOREY SEMI-DETACHED BRICK HOUSE No. 108A
2 STOREY REND. BRICK HOUSE No. 110
BRICK HOUSE No. 112
SEMI-DETACHED BRICK HOUSE No. 114A
SEMI-DETACHED BRICK HOUSE No. 114B
1 & 2 STOREY REND. BRICK HOUSE No. 116
2 & 3 STOREY BRICK HOUSE No. 43
1 & 2 STOREY BRICK HOUSE No. 19
REND. BRICK HOUSE No. 17
2 STOREY REND. BRICK HOUSE No. 15
BRICK HOUSE No. 13
2 STOREY REND. BRICK HOUSE No. 11
2 STOREY BRICK HOUSE No. 9
REND. BRICK HOUSE No. 7
BRICK HOUSE No. 5
REND. BRICK HOUSE No. 3
FC CLAD HOUSE No. 1
2 STOREY REND. BRICK HOUSE No. 114
REND. BK GARAGE
RECOMMENDATION
IF IT IS INTENDED TO REDEVELOP THIS ENTIRE PROPERTY IT IS STRONGLY RECOMMENDED THAT A SURVEY PLAN OF CONSOLIDATION BE PREPARED, LODGED AND REGISTERED AT THE OFFICE OF NEW LAND REGISTRY SERVICES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ON SITE.

TE:
e figured dimensions only.
eck & verify levels and dimensions on site prior
the commencement of any work, the preparation of
p drawings or the fabrication of components

APPENDIX C

SITE PHOTOGRAPHS

Aargus

SITE PHOTOGRAPHS

Project:	Detailed Site Investigation
Site Location:	116-120 High Street, 2-20 Gaza Avenue & 45-47 Barons Crescent, Hunters Hill NSW
Job No.:	ES8561
Photos Taken By:	DK

Photograph Nº 1

View of: Main entrance to aged care facility from High Street. Looking north

Photograph Nº 2

View of: Single-storey dwelling at 14 Gaza Avenue

Photograph Nº 3

View of: Topsoil and natural soil profile from 16 Gaza Avenue

Photograph Nº 4

View of: Asphalt road car parking within the aged care

Photograph Nº 5

View of: Asphalt driveways along Barons Crescent

Photograph Nº 6

View of: General site condition with car parking and footpath way along Gaza Avenue

Photograph Nº 7

View of: Single-storey dwelling at 14 Gaza Avenue

Photograph Nº 8

View of: Single-storey dwelling at 45 Barons Crescent

Photograph Nº 9

View of: Single-storey dwelling at 47 Barons Crescent

Photograph Nº 10

View of: Landscape with grass vegetation and big old tree within the aged care facility

Photograph Nº 11

View of: Old entrance to the aged care facility from High Street

Photograph Nº 12

View of: Frontage of special care unit within the aged care facility

APPENDIX D

LOTSEARCH REPORT AND LAND TITLES

Title Search

26/09/2022 12:25 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 61/16119

SEARCH DATE	TIME	EDITION NO	DATE
26/9/2022	12:24 PM	3	9/9/2018

LAND

LOT 61 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP16119

FIRST SCHEDULE

DIANNE ELIZABETH SMITH (T E327389)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 7852598 MORTGAGE TO NATIONAL AUSTRALIA BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar-General in accordance with Section 96B (2) of the Real Property Act, 1900.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

DI-ES8561 PRINTED ON 26/9/2022

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BOX 35D
(5272261)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER 60/16119	
EDITION	DATE OF ISSUE
4	17/9/1998

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

REGISTRAR GENERAL · NEW SOUTH WALES ·

LAND

LOT 60 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T 5272261)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

ABADEE, DRESDNER & FREEMAN

SOLICITORS & ATTORNEYS

2ND FLOOR
72 PITT STREET
SYDNEY NSW 2000
AUSTRALIA

FACSIMILE: (02) 9221 5205
DX 158 SYDNEY

TELEPHONE: (02) 9233 2799

PARTNERS
Raymond D. Dresdner B.COM., LL.B. (NSW)
David M. Freeman B.COM., LL.B. (NSW) LL.M. (SYD)
Alan D. Schwarz B.A., LL.B (WITS)

Liability is limited by the Solicitors Scheme approved by the Professional Standards Council

Our reference DMF:KH 1795

8 October 1998

Mr Richard Gould
Chief Executive Officer
Sir Moses Montefiore Jewish Home
120 High Street
HUNTERS HILL NSW 2110

Dear Richard

RE: PURCHASE OF 4 GAZA AVENUE, HUNTERS HILL

The Transfer for the Home's purchase of the above property has been registered and the property now stands in the name of the Home.

I enclose herewith Certificate of Title Folio Identifier 60/16119 being the title deed for the property.

Would you please acknowledge safe receipt of the title deed by signing and returning to me the enclosed copy of this letter.

Yours sincerely

David M Freeman
ABADEE, DRESDNER & FREEMAN

Encl

BOX 35D
(5272261)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER 60/16119	
EDITION 4	DATE OF ISSUE 17/9/1998

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

REGISTRAR GENERAL · NEW SOUTH WALES ·

LAND

LOT 60 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T 5272261)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

ABADEE, DRESDNER & FREEMAN

SOLICITORS & ATTORNEYS

2ND FLOOR
72 PITT STREET
SYDNEY NSW 2000
AUSTRALIA

FACSIMILE: (02) 9221 5205
DX 158 SYDNEY

TELEPHONE: (02) 9233 2799

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Alan D. Schwarz B.A., LL.B (WITS)

Liability is limited by the Solicitors Scheme approved by the Professional Standards Council

Our reference DMF:KH 1795

8 October 1998

Mr Richard Gould
Chief Executive Officer
Sir Moses Montefiore Jewish Home
120 High Street
HUNTERS HILL NSW 2110

Dear Richard

RE: PURCHASE OF 4 GAZA AVENUE, HUNTERS HILL

The Transfer for the Home's purchase of the above property has been registered and the property now stands in the name of the Home.

I enclose herewith Certificate of Title Folio Identifier 60/16119 being the title deed for the property.

Would you please acknowledge safe receipt of the title deed by signing and returning to me the enclosed copy of this letter.

Yours sincerely

David M Freeman
ABADEE, DRESDNER & FREEMAN

Encl

BOX 35D
(AB618173)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER 59/16119	
EDITION	DATE OF ISSUE
4	13/7/2005
CERTIFICATE AUTHENTICATION CODE	
IAN8-Z6-YJFC	

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 59 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T AB618173)

SECOND SCHEDULE
----
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT).

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

BOX 35D
(AA789195)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER 58/16119	
EDITION	DATE OF ISSUE
1	12/8/2004
CERTIFICATE AUTHENTICATION CODE	
BNOK-PK-LF23	

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 58 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T AA789195)

SECOND SCHEDULE
----
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT).

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

BT 6175
0386262

Certificate of Title

Certificate of Title

Title Search

26/09/2022 12:29 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 57/16119

SEARCH DATE	TIME	EDITION NO	DATE
26/9/2022	12:28 PM	-	-

VOL 7789 FOL 89 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 57 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP16119

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME (T L756083)

SECOND SCHEDULE (1 NOTIFICATION)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

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Title Search

26/09/2022 12:27 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 56/16119

SEARCH DATE	TIME	EDITION NO	DATE
26/9/2022	12:27 PM	-	-

VOL 5942 FOL 61 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 56 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T M321738)

SECOND SCHEDULE (1 NOTIFICATION)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

Direct Info
Quick and easy online

DI-ES8561 PRINTED ON 26/9/2022

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Vol. 10796 Fol. 160

(Page 1) Vol. 10796 Fol. 160

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE

Register Book

Vol. 10796 Fol. 160

Crown Grant Vol. 777 Fol.210

Prior Title Vol.6825 Fol.120

Edition issued 15- 5 -1968

AS K994760

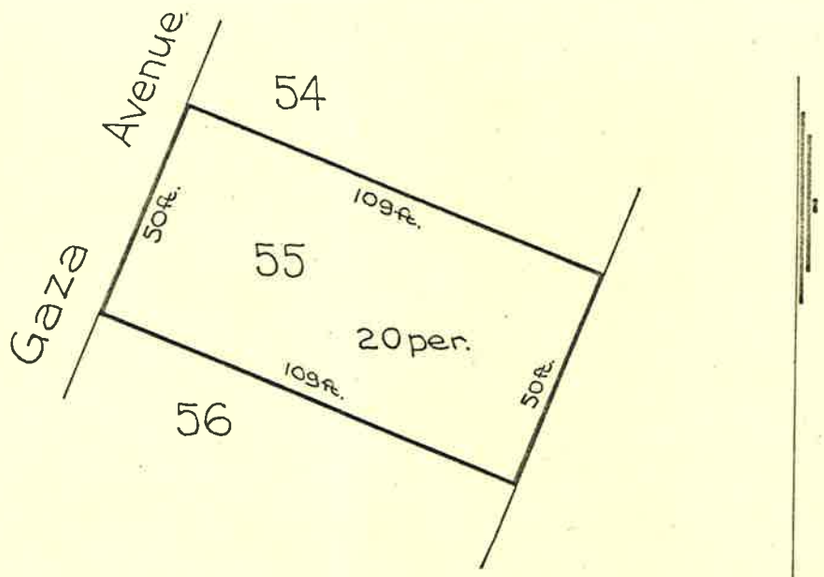
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

PLAN SHOWING LOCATION OF LAND



K994760 VF.

Scale: 40 feet to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 55 in Deposited Plan 16119 in the Municipality of Hunters Hill Parish of Hunters Hill and County of Cumberland.

FIRST SCHEDULE (continued overleaf)

~~LEONARD THOMAS TUNKS of Hunters Hill, Foreman.~~

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Registrar General

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

BOX 35D
(AD532667)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER 54/16119	
EDITION	DATE OF ISSUE
2	1/11/2007
CERTIFICATE AUTHENTICATION CODE	
1VGX-4Y-BQ75	

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 54 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

SIR MOSES MONTEFIORE JEWISH HOME (T AD532667)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT).

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER 2124050

Certificate of Title

Certificate of Title

BOX 1038R
(Y781326)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER	53/16119
EDITION	DATE OF ISSUE
1	10. 1.1990

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 53 IN DEPOSITED PLAN 16119
MUNICIPALITY OF HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME (T Y781326)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

909297

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

SWAAB & ASSOCIATES
SOLICITORS AND ATTORNEYS

FREDRICK SWAAB, BA LLB
RONALD ALLEN ZUCKER, BA LLB

Associate
HARRY SIMON SNOW, LLB

Consultant
JOSEPH SLEZAK, LLD

175 Castlereagh Street Sydney 2000
DX522 Sydney
Telephone (02) 267 7822
Facsimile (02) 264 1848

OUR REF: EP:RD

YOUR REF

The Financial Controller,
Sir Moses Montefiore Home,
120 High Street,
HUNTERS HILL NSW 2110

22 January, 1990

- BY COURIER -

Dear Sirs,

RE: PURCHASE FROM TOMARELLI
18 GAZA AVENUE, HUNTERS HILL

We enclose original Certificate of Title 53/16119 registered in the Home's name.

We would be pleased if you could acknowledge receipt of same by signing and returning the enclosed photocopy letter.

Yours faithfully,
SWAAB & ASSOCIATES

.....
Encl.

BOX 35D
(Y827191)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER	52/16119
EDITION	DATE OF ISSUE
1	8. 2.1990

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

REGISTRAR GENERAL NEW SOUTH WALES

LAND

LOT 52 IN DEPOSITED PLAN 16119
MUNICIPALITY OF HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME (T Y827191)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

966112

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

AZ 53/1

Certificate of Title

Certificate of Title

ABADEE, DRESDNER & FREEMAN

SOLICITORS & ATTORNEYS

RAYMOND D. DRESDNER B.COM., LL.B.
DAVID M. FREEMAN B.COM., L.L.M.
ALAN D. SCHWARZ B.A., L.L.B.

2nd Floor,
72 Pitt Street,
SYDNEY N.S.W. 2000
D.X. 158 SYDNEY

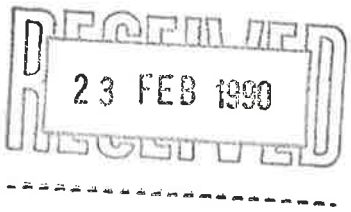
Telephone: (02) 233 2799
Facsimile: (02) 221 5205

Our Ref: DMF:KH:5008

Your Ref:

21st February, 1990.

Mr. Andrew Noney,
Sir Moses Montefiore Jewish Home,
120 High Street,
HUNTERS HILL. N.S.W. 2110



Dear Sir,

RE : PURCHASE 20 GAZA AVENUE, HUNTERS HILL

We refer to the Home's purchase of the above property and now enclose Certificate of Title Folio Identifier 52/16119 being the title deed for the property.

Would you please acknowledge receipt of the document by signing and returning to us the enclosed copy of this letter.

Acknt 23/2/90

Yours faithfully,

Abadee Dresdner - Freeman

ABADEE DRESDNER & FREEMAN

BOX 35D
(AM490349)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE REFERENCE	
62/16119	
EDITION	DATE OF ISSUE
1	20/6/2017
CERTIFICATE AUTHENTICATION CODE	
V26Z-QV-QRXS	

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 62 IN DEPOSITED PLAN 16119
LOCAL GOVERNMENT AREA: HUNTER'S HILL.
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME (T AM490349)

SECOND SCHEDULE
---
1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

**** END OF CERTIFICATE ****

ANY ATTEMPT TO ALTER THIS CERTIFICATE COULD RESULT IN HEAVY FINES OR IMPRISONMENT (S.141 REAL PROPERTY ACT).

WARNING: BEFORE DEALING WITH THIS LAND, SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

G.

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan)

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE

Register Book

Vol. 9346 Fol. 166

ID 1st Edition issued 10-1-1963.

J211969

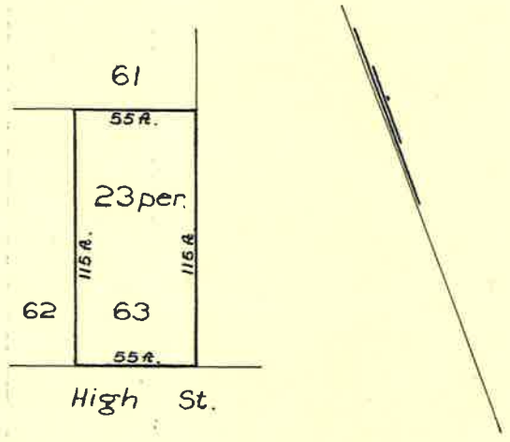
Fol. 166 Vol. 9346 (Page 1)

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness J.M.Willis.

Registrar-General.

PLAN SHOWING LOCATION OF LAND



Scale : 80 feet to one inch.

J211969 KS

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 63 Deposited Plan 16119 in the Municipality of Hunters Hill Parish of Hunters Hill and County of Cumberland

Registrar General

FIRST SCHEDULE (continued overleaf)

THE SIR MONTEFIORE JEWISH HOME.

Registrar General

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

BOX 1038R
(Y587437)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER	10/724017
EDITION	DATE OF ISSUE
2	26. 9.1989

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

REGISTRAR GENERAL

LAND

LOT 10 IN DEPOSITED PLAN 724017
AT BORONIA PARK
MUNICIPALITY OF HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP724017

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME

SECOND SCHEDULE
---

1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2. Y587437 LEASE TO THE SYDNEY COUNTY COUNCIL OF SUBSTATION PREMISES NO 5749 TOGETHER WITH RIGHT OF WAY AND EASEMENT FOR ELECTRICITY PURPOSES AS SHOWN IN THE PLAN WITH Y587437. EXPIRES 31.12.2034

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

814126

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

BOX 605M
(E808277)

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE

REFERENCE TO FOLIO OF THE REGISTER	
IDENTIFIER	50/16119
EDITION	DATE OF ISSUE
2	7.10.1992

I certify that the person described in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries as appear in the Second Schedule and to any additional entries in the Folio of the Register.

K. Mottle

REGISTRAR GENERAL

REGISTRAR GENERAL • NEW SOUTH WALES •

LAND

LOT 50 IN DEPOSITED PLAN 16119
MUNICIPALITY OF HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM: DP16119

FIRST SCHEDULE

THE SIR MOSES MONTEFIORE JEWISH HOME (T E808277)

SECOND SCHEDULE
---

1. RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: BEFORE DEALING WITH THIS LAND SEARCH THE CURRENT FOLIO OF THE REGISTER

Certificate of Title

Certificate of Title

LAND REGISTRY SERVICES

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26/09/2022 01:47 PM

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Req:R510090 /Doc:CT 04402-125 CT /Rev:06-Aug-2012 /NSW LRS /Prt:26-Sep-2022 13:45 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

202.

Appn. No. ———

Reference to last certificates,

Vol. 3758 Fol. 211

" 3759 " 96

New South Wales.

9569 12.29

[CERTIFICATE OF TITLE.]

JOINT TENANCY

REGISTER BOOK.

VOL. 4402 FOL. 125

CANCELLED W

ON ISSUE OF NEW FOLIO A/C 4402 - 125

GEORGE HERBERT KELSEY of Hunters Hill, late Insurance Inspector, and JANE WILGAR KELSEY his wife, Transferees as to part under Instrument of Transfer No.B 954779 and as to the other part by virtue of Certificate of Title Volume 3758 Folio 211 now surrendered for consolidation are now the proprietors of an Estate in Fee Simple as Joint Tenants ———

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in Firstly —that— piece of land situated at the Field of Mars Common ———

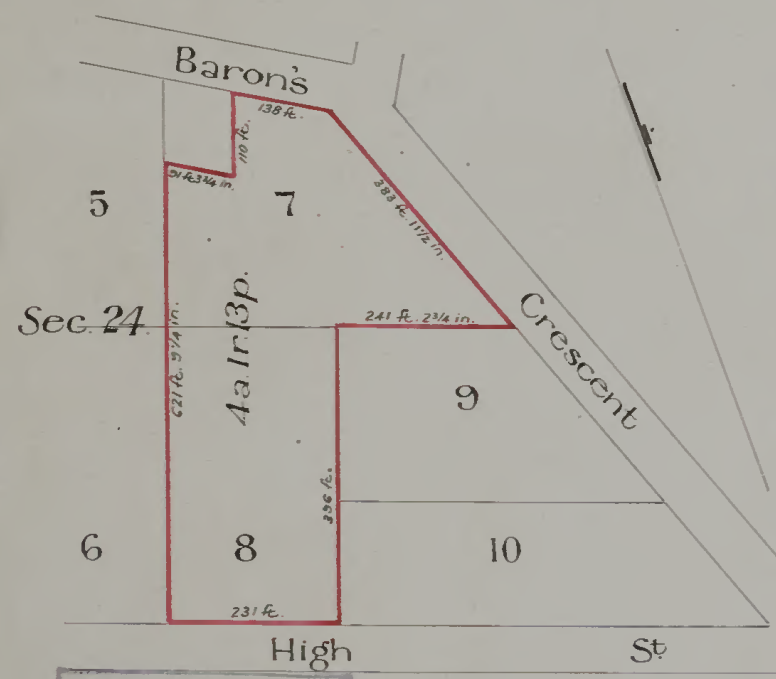
in the Municipality of Hunters Hill Parish of Hunters Hill , and County of Cumberland containing Two acres sixteen perches or thereabouts being Allotment 8 of Section 24 originally granted to Charles Tennant by Crown Grant dated the 28th day of January 1886 Volume 777 Folio 247. Secondly that piece of land situated as aforesaid containing Two acres thirty seven perches or thereabouts being part of Allotment 7 of said Section 24 originally granted to John James Wood and Alexander Cole by Crown Grant dated the 28th day of January 1886 Volume 777 Folio 250. Which said pieces of land are shown in the plan hereon and therein edged red and also shown as to part of the land secondly described above in plan annexed to the said Instrument of Transfer No.B 954779 and which said Grants are delineated in the Public Map of the said Parish in the Department of Lands. ———

In witness whereof I have hereunto signed my name and affixed my Seal, this thirteenth day of May 1930

Signed in the presence of W. J. Connell }

K. H. Clayton

Registrar General.



Scale: 200 ft. to one inch.

THE LAND WITHIN DESCRIBED IS LOT. 2 IN D.P. 312298 LOT. 2 IN D.P. 325793

B954779 W.S.B. Caveat Feb. 1931

NOTIFICATION REFERRED TO

No. B 954780 Mortgage dated the 21st day of March 1930 from George Herbert Kelsey and Jane Wilgar Kelsey to John Henry Wise George Seville Travis and William Wright Hughan Produced the 21st day of March 1930 and entered the 7th day of May 1930 at 10 o'clock in the forenoon.

K. H. Clayton

Registrar General.

No. B 989900 DISCHARGE of within Mortgage B 954780 dated 1st July 1930

Produced 4th July 1930 and entered 16th July 1930 at 4 o'clock in the after noon.

K. H. Clayton

REGISTRAR GENERAL

No. B 989901 TRANSFER dated 30th June 1930 from the said George Herbert Kelsey and Jane Wilgar Kelsey to The Sir Moses Montefiore Jewish Home of the land within described

Produced 4th July 1930 and entered 16th July 1930 at 4 o'clock in the after noon.

K. H. Clayton

REGISTRAR GENERAL

No. B 989902 MORTGAGE dated 30th June 1930 from the said The Sir Moses Montefiore Jewish Home to the said George Herbert Kelsey and Jane Wilgar Kelsey

Produced 4th July 1930 and entered 16th July 1930 at 4 o'clock in the after noon.

K. H. Clayton

REGISTRAR GENERAL

C254628 T.A.R. 649 R

Req:R510090 /Doc:CT 04402-125 CT /Rev:06-Aug-2012 /NSW LRS /Prt:26-Sep-2022 13:45 /Seq:2 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

No. C254629 DISCHARGE of within mortgage
B989902 Dated 24th May 1914
Produced 25th May 1914
15th June 1914
and entered
at 12 o'clock in the noon.
Roy W. Wills
REGISTRAR GENERAL.

REGISTRAR GENERAL NEW SOUTH WALES

LEASE R884225 to the Sydney County Council of Substation Premises No 4372 as shown in the plan with R884225 together with a right of way and easement for electricity purposes over another part of the land within described. Expires ~~31-5-12~~ 31-5-2025
Registered 8-7-1986

Registrar General.

COMPUTER FOLIO
DEALINGS TO BE REGISTERED.

NO FURTHER

CT 25 5-79
CT 4.6.80
R884225/12
26 cc

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
26/09/2022 01:53 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

26/9/2022 1:53PM

FOLIO: 1/325793

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4405 FOL 191

Recorded	Number	Type of Instrument	C.T. Issue
19/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
14/7/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
16/11/2000	7223503	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

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DI-ES8561 PRINTED ON 26/9/2022

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LAND REGISTRY SERVICES

Direct Info
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Historical Search
26/09/2022 01:43 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

26/9/2022 1:43PM

FOLIO: 2/312298

First Title(s): VOL 777 FOL 247 VOL 777 FOL 250
Prior Title(s): VOL 4402 FOL 125

Recorded	Number	Type of Instrument	C.T. Issue
19/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
26/3/2003	9482165	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
26/3/2003	9482316	CONVERTED TO AUTO CONSOL 4402-125	CONSOL CREATED CT NOT ISSUED

*** END OF SEARCH ***

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DI-ES8561 PRINTED ON 26/9/2022

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26/09/2022 01:57 PM

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Req:R510262 /Doc:CT 04405-191 CT /Rev:06-Aug-2012 /NSW LRS /Prt:26-Sep-2022 13:56 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

Appn. No.

Reference to Last Certificate

Vol. 3759 Fol. 96

New South Wales.

[CERTIFICATE OF TITLE.]

JOINT TENANCY
ORDER NO. B 969579

RESIDUE AFTER TRANSFER NO.B954779

REGISTER BOOK.

VOL. 4405 FOL. 191

CANCELLED [W]
ON ISSUE OF NEW FOLIO 1/325793

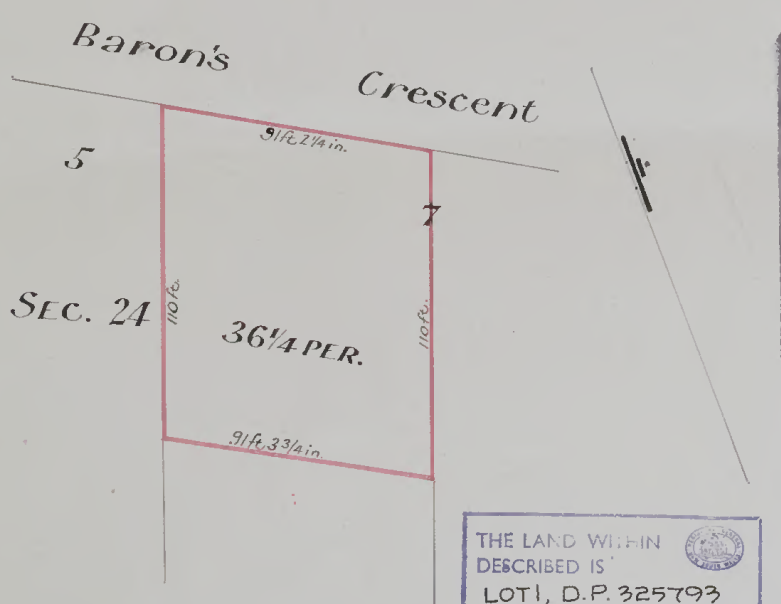
CHARLES JOHN INGLIS of Sydney, Accountant and ALICE JANE INGLIS his wife, by virtue of Certificate of Title Volume 3759 Folio 96 now surrendered as to Residue after Transfer No. B 954779 are now the proprietors of an Estate in Fee Simple as Joint Tenants

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated at the Field of Mars Common in the Municipality of Hunters Hill Parish of Hunters Hill, and County of Cumberland containing Thirty six and one quarter perches or thereabouts, as shown in the Plan hereon and therein edged red, being part of allotment 7 of Section 24 delineated in the Public Map of the said Parish in the Department of Lands originally granted to John James Wood and Alexander Cole by Crown Grant dated the 28th day of January 1886 Volume 777 Folio 250.

In witness whereof I have hereunto signed my name and affixed my Seal, this twentieth day of May 1930.

Signed in the presence of

Registrar General.



Scale:—50ft to one inch

THE LAND WITHIN DESCRIBED IS LOT 1, D.P. 325793

B.969579

Notification referred to.

No. D 216630 APPLICATION BY TRANSMISSION

Vera Alice Packer of Hunters Hill Married Woman

is now the registered Proprietors of the land within described in pursuance of the above Application Produced 14th July 1943 and entered 13th August 1943 at 12½ o'clock in the ... noon.

REGISTRAR GENERAL

Harry Inglis Packer of Pymble, Audit Clerk

now the registered proprietor of the land within described.

See Section 94 Application No. K432303

Entered 13th October 1966

REGISTRAR GENERAL

No. C 259633 NOTICE of DEATH. Proof having been furnished to me of the death of the said Alice Jane Inglis the surviving Joint Tenant Charles John Inglis is now registered sole proprietor of the Land within described.

Produced 18th June 1934 and entered 25th June 1934 at 12 o'clock in the noon.

REGISTRAR GENERAL

The Sir Moses Montefiore Jewish Home is

now the registered proprietor of land within described.

See TRANSFER No. K654399 dated 23rd December 1966

Entered 11th May 1967

REGISTRAR GENERAL

COMPUTER FOLIO NO FURTHER DEALINGS TO BE REGISTERED.

C 259633 R

T.A. D216630

K432303

K654399

Req:R510262 /Doc:CT 04405-191 CT /Rev:06-Aug-2012 /NSW LRS /Prt:26-Sep-2022 13:56 /Seq:2 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

LAND REGISTRY SERVICES

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26/09/2022 01:36 PM

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Req:R509927 /Doc:CT 00777-236 CT /Rev:28-Jul-2012 /NSW LRS /Prt:26-Sep-2022 13:35 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

No. 857/785

STAMP DUTY SYDNEY N.S.W. 4:2:86

New South Wales.

00777236

REGISTER BOOK, VOL. 777 FOL. 236

CANCELLED W

ISSUE OF NEW FOLIO 9/724017

DIEU ET MON DROIT

GRANT UNDER THE "FIELD OF MARS COMMON RESUMPTION ACT 1874."

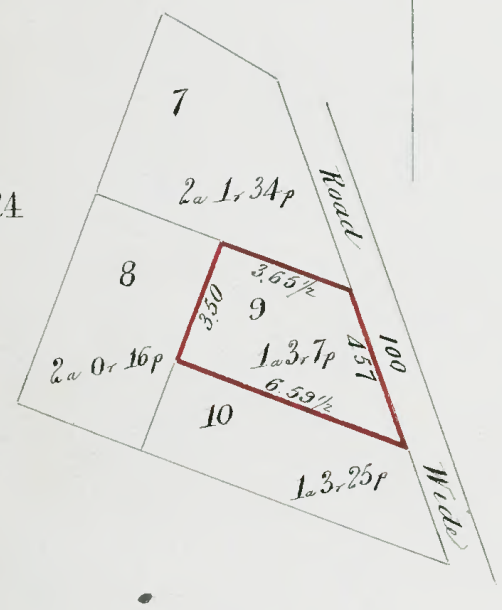
THIS DOCUMENT IS THE PROPERTY OF LAND & PROPERTY INFORMATION SERVICE (DIVISION OF THE GOVERNMENT PRINTING SERVICE) LOCKED BAG 2000, GLADESVILLE, N.S.W. 2111

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, and so forth:—
TO ALL to whom these Presents shall come, Greeting:—

WHEREAS under and in pursuance of the power in that behalf given by the "Field of Mars Common Resumption Act of 1874," HIS EXCELLENCY the Governor of Our Colony of NEW SOUTH WALES, with the advice of the Executive Council, has caused a portion of the Land described in the Schedule to the said Act to be surveyed, and a Plan thereof made, in which is marked out such roads, streets, public thoroughfares, and other reserves for public purposes, and such Sub-division and Allotments of the said Land for the purposes of sale, as the Governor with the advice aforesaid has thought proper: **And Whereas** certain of the said Lands in the said Plan shown were in accordance with the provisions of the said Act put up for sale by public auction at *the Field of Mars Common* on the *Twenty Sixth* day of *September* A.D. 1885, at which sale *James Lawson* of *Sydney* in Our said Colony, bid for and was declared to be the purchaser of the Lands and hereditaments hereinafter described, at or for the price or sum of *Seven hundred and Three pounds Three shillings* Sterling: **Now Know Ye,** That for and in consideration of the said Sum, for and on Our behalf, well and truly paid into the Colonial Treasury of Our said Colony, before these Presents are issued, WE, with the advice of Our Executive Council of New South Wales, HAVE GRANTED, and for Us, Our Heirs and Successors, DO HEREBY GRANT unto the said *James Lawson* his Heirs and Assigns, Subject to the Reservation hereinafter mentioned, ALL THAT Piece or Parcel of Land in Our said Colony, containing by Admeasurement *One acre three roods seven perches* be the same more or less, situated in the County of *Cumberland* and Parish of *Hunters Hill*
Being part of the Subdivision of the Field of Mars Common, Allotment Nine of Section Twenty four

THE LAND WITHIN DESCRIBED IS lot 9 in D.P. 724017

SEC 24



Scale 4 chains to an inch

COMMENCING *on the South Western side of a road one chain wide at the South Eastern corner of allotment seven and bounded thence on part of the North East by that road bearing South nineteen degrees forty six minutes East four chains fifty seven links on the South West by the North Eastern boundary of allotment ten bearing North sixty nine degrees forty five minutes West six chains fifty nine links and half a link on the North West by part of the South Eastern boundary of allotment eight bearing North twenty degrees fifteen minutes East three chains fifty links and on the remainder of the North East by part of the South Western boundary of allotment seven aforesaid bearing South sixty nine degrees forty five minutes East three chains sixty five links and half a link to the point of commencement,*

As per plan in the margin hereof:
Being the Allotment sold as Lot E J under the advertisement dated the 21st day of *August* 1885 with all the Rights and Appurtenances whatsoever thereto belonging: **To Hold** unto the said his Heirs and Assigns for ever: **Provided Nevertheless,** AND WE HEREBY RESERVE unto Us, Our Heirs and Successors, and to the Governor for the time-being of Our said Colony, by such Bodies Corporate, Person or Persons, as shall be by Them or Him authorized in that behalf, full power to make and conduct through the said Land, all Common or Public Drains and Sewers, which may be deemed expedient: **In Testimony Whereof,** We have caused this Our Grant to be Sealed with the Seal of Our said Colony.

James Lawson

WITNESS Our Right Trusty and Well-beloved Councillor THE RIGHT HONOURABLE CHARLES ROBERT, BARON CARRINGTON, *Knight Grand Cross of Our Most Distinguished Order of Saint Michael and Saint George, Governor and Commander-in-Chief of Our Colony of* NEW SOUTH WALES *and its Dependencies, at Government House, Sydney, in* NEW SOUTH WALES *aforesaid, this Twenty eighth day of January in the forty ninth year of Our Reign, and in the year of Our Lord one thousand eight hundred and eighty-six.*

Req:R509927 /Doc:CT 00777-236 CT /Rev:28-Jul-2012 /NSW LRS /Prt:26-Sep-2022 13:35 /Seq:2 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-ES8561

RECORDED and ENROLLED in the Registrar General's Office, at Sydney, in New South Wales, this 26th day of February 188[illegible]

Registrar General.

No. A 96787 TRANSFER dated 11 June 1923
from the said James Lawson to William Macdonell Lawson of Yarrowood Bleak
of the land within described
Produced and entered 14 July 1923
at 4 o'clock in the fore noon.

REGISTRAR GENERAL.

No C 109652 caveat dated 25th February 1933
Produced and entered 25th February 1933 at 44 mts pt 3 o'clock in the afternoon.

Acting Registrar General.

W.R. 1916 668726

No. C668726 WITHDRAWAL of the within Caveat
No. C109652 dated 14th June 1938
Produced 15th June 1938 and entered
17th June 1938
at 4 o'clock in the after noon.

REGISTRAR GENERAL.

No. C654547 TRANSFER dated 2nd May 1938
from the said William Maxwell Lawson to
The Sir Moses Montefiore Jewish Home
of the land within described
Produced 10th May 1938 and entered 17th June 1938
at 4 o'clock in the after noon.

REGISTRAR GENERAL.

COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

C654547

LAND REGISTRY SERVICES

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26/09/2022 01:28 PM

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Req:R509838 /Doc:CT 00777-237 CT /Rev:28-Jul-2012 /NSW LRS /Prt:26-Sep-2022 13:26 /Seq:1 of 2
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No. 85/756

NEW SOUTH WALES
Stamp Duties
STAMP DUTY
SYDNEY N.S.W.
16:2:86

Collect Mr Bruff

New South Wales.

00777237

VOL. 777 FOL. 237

CANCELLED W

GRANT UNDER THE "FIELD OF MARS COMMON RESUMPTION ACT 1874."

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, and so forth:—
TO ALL to whom these Presents shall come, Greeting:—

WHEREAS under and in pursuance of the power in that behalf given by the "Field of Mars Common Resumption Act of 1874," HIS EXCELLENCY the Governor of Our Colony of NEW SOUTH WALES, with the advice of the Executive Council, has caused a portion of the Land described in the Schedule to the said Act to be surveyed, and a Plan thereof made, in which is marked out such roads, streets, public thoroughfares, and other reserves for public purposes, and such Sub-division and Allotments of the said Land for the purposes of sale, as the Governor with the advice aforesaid has thought proper: **And Whereas** certain of the said Lands in the said Plan shown were in accordance with the provisions of the said Act put up for sale by public auction at The Field of Mars Common on the Twenty sixth day of September A.D. 1885, at which sale James Lawson of Sydney in Our said Colony, bid for and was declared to be the purchaser of the Lands and hereditaments hereinafter described, at or for the price or sum of Seven hundred and forty seven pounds five shillings Sterling: **Now Know Ye,** That for and in consideration of the said Sum, for and on Our behalf, well and truly paid into the Colonial Treasury of Our said Colony, before these Presents are issued, WE, with the advice of Our Executive Council of New South Wales, HAVE GRANTED, and for Us, Our Heirs and Successors, DO HEREBY GRANT unto the said James Lawson his Heirs and Assigns, Subject to the Reservation hereinafter mentioned, ALL THAT Piece or Parcel of Land in Our said Colony, containing by Admeasurement One acre three roods twenty four perches be the same more or less, situated in the County of Cumberland and Parish of Hunters Hill

Being part of the Subdivision of the Field of Mars Common . Allotment Two of Section Twenty four

Scale 4 chains to an inch

COMMENCING on the South Western side of a road one chain wide at the South Eastern corner of allotment nine and bounded thence on part of the North East by that road bearing South nineteen degrees forty six minutes East three chains twenty six links and half a link to High Street on the South West by that Street bearing North sixty nine degrees forty five minutes West eight chains sixty nine links and one fourth of a link on the North West by part of the South Eastern boundary of allotment eight bearing North twenty degrees fifteen minutes East two chains fifty links and on the remainder of the North East by the South Western boundary of allotment nine aforesaid bearing South sixty nine degrees forty five minutes East six chains fifty nine links and half a link to the point of commencement

As per plan in the margin hereof:
Being the Allotment sold as Lot EK under the advertisement dated the 21st day of August 1885 with all the Rights and Appurtenances whatsoever thereto belonging: **To Hold** unto the said James Lawson his Heirs and Assigns for ever: **Provided Nevertheless,** AND WE HEREBY RESERVE unto Us, Our Heirs and Successors, and to the Governor for the time-being of Our said Colony, by such Bodies Corporate, Person or Persons, as shall be by Them or Him authorized in that behalf, full power to make and conduct through the said Land, all Common or Public Drains and Sewers, which may be deemed expedient: **In Testimony Whereof,** We have caused this Our Grant to be Sealed with the Seal of Our said Colony.

WITNESS Our Right Trusty and Well-beloved Councillor THE RIGHT HONOURABLE CHARLES ROBERT, BARON CARRINGTON, *Knight Grand Cross of Our Most Distinguished Order of Saint Michael and Saint George, Governor and Commander-in-Chief of Our Colony of* NEW SOUTH WALES *and its Dependencies, at Government House, Sydney, in* NEW SOUTH WALES *aforesaid, this* Twenty eighth *day of* January *in the* forty ninth *year of Our Reign, and in the year of Our Lord one thousand eight hundred and eighty-* Six

Bruff

Recorded Vol

Req:R509838 /Doc:CT 00777-237 CT /Rev:28-Jul-2012 /NSW LRS /Prt:26-Sep-2022 13:26 /Seq:2 of 2
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RECORDED and ENROLLED in the Registrar General's Office, at Sydney, in New South Wales, this 26th day of February 188 6

G. W. Ward
Registrar General.

No. A 67897 TRANSFER dated June 1923
from the said James Lawson to William Maxwell Lawson of Stanmore Clerk
of the land within described
Produced and entered 1st July 1923
at 4 mts to 10 o'clock in the fore noon.
REGISTRAR GENERAL.

No. C 109652 Caveat dated 23rd February 1932.
Produced and entered 25th February 1932 at 44 mts pt 3 o'clock in the afternoon
Acting Registrar General.

No. C668726 WITHDRAWAL of the within Caveat
No. C109652 dated 14th June 1938
Produced 15th June 1938 and entered
17th June 1938
at 4 Hours 12 o'clock in the after noon.
REGISTRAR GENERAL.

No. C654547 TRANSFER dated 2nd May 1938
from the said William Maxwell Lawson to The Sir Moses Montefiore Jewish Home
of the land within described
Produced 10th January 1938 and entered 17th June 1938
at 4 o'clock in the after noon.
REGISTRAR GENERAL.

FOLIO CANCELLED - NEW FOLIO IS 10/724017
21.6.89

C654547P
388824P

Historical Search

26/09/2022 01:27 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

26/9/2022 1:27PM

FOLIO: 9/724017

First Title(s): VOL 777 FOL 236
Prior Title(s): VOL 777 FOL 236

Recorded	Number	Type of Instrument	C.T. Issue
16/6/1987	DP724017	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
24/7/1992	DP724017	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
10/12/1992		AMENDMENT: VOL FOL INDEX	

*** END OF SEARCH ***

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DI-ES8561 PRINTED ON 26/9/2022

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Historical Search

26/09/2022 01:21 PM

Client Reference: DI-ES8561

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

26/9/2022 1:21PM

FOLIO: 10/724017

First Title(s): VOL 777 FOL 237
Prior Title(s): VOL 777 FOL 237

Recorded	Number	Type of Instrument	C.T. Issue
16/6/1987	DP724017	DEPOSITED PLAN	LOT RECORDED
			FOLIO NOT CREATED
26/6/1989	Y387834	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	FOLIO CREATED EDITION 1
26/9/1989	Y587437	LEASE	EDITION 2
28/2/2017	AK971351	LEASE	
28/2/2017	AK971352	SUB-LEASE	
28/2/2017	AK971502	MORTGAGE OF LEASE	
28/2/2017	AK971571	CHANGE OF NAME	
28/2/2017	AM10231	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

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LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 29 Jul 2022 11:14:44

Reference: LS034849 EP

Address: 120 High Street, Hunters Hill, NSW 2110

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/06/2022	17/06/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	25/06/2019	25/06/2019	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	29/06/2022	06/05/2022	Monthly	1000m	0	0	8
Contaminated Land Records of Notice	Environment Protection Authority	18/07/2022	18/07/2022	Monthly	1000m	0	0	4
Former Gasworks	Environment Protection Authority	03/06/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/06/2022	13/07/2012	Annually	1000m	0	0	3
EPA PFAS Investigation Program	Environment Protection Authority	06/06/2022	14/07/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	15/06/2022	15/06/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	15/06/2022	15/06/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	15/06/2022	15/06/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	06/06/2022	06/06/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	18/07/2022	18/07/2022	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	18/07/2022	18/07/2022	Monthly	1000m	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	18/07/2022	18/07/2022	Monthly	1000m	0	0	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100m	2	5	5
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100m	-	3	3
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	1	1	47
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	1	6
State Forest	Forestry Corporation of NSW	25/02/2021	14/02/2021	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	1
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	29

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	9
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000m	1	3	7
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	26/05/2022	06/05/2022	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	29/06/2022	29/06/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	29/06/2022	29/06/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	29/06/2022	29/06/2022	Monthly	1000m	9	9	10
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	5	87
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	500m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	500m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	19/08/2021	25/06/2021	Quarterly	500m	0	0	1
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	26/05/2022	01/04/2022	Monthly	500m	1	2	16
Bush Fire Prone Land	NSW Rural Fire Service	25/07/2022	08/12/2021	Weekly	1000m	1	3	3
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment & Heritage	01/03/2017	16/12/2016	As required	1000m	1	9	51
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	0	3	5
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	0	3	12
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	25/07/2022	25/07/2022	Weekly	10000m	-	-	-

Site Diagram

120 High Street, Hunters Hill, NSW 2110

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 40652m²

Total Perimeter: 877m

Scale: 0 25 50 Meters

Data Source Aerial Imagery: © Aerometrex Pty Ltd

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

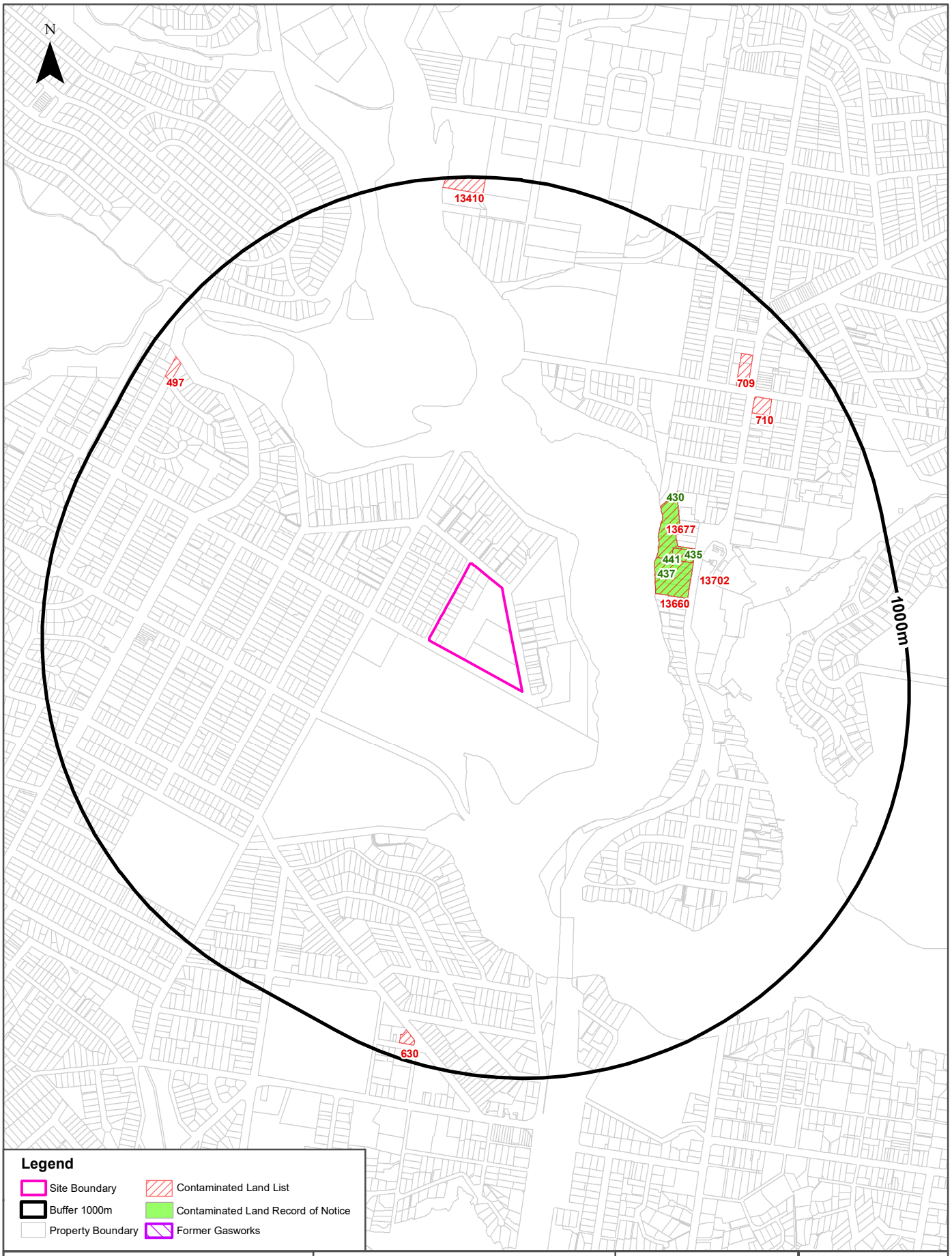
Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Contaminated Land

120 High Street, Hunters Hill, NSW 2110



Contaminated Land

120 High Street, Hunters Hill, NSW 2110

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
13660	331-335 Burns Bay Road, Lane Cove NSW 2066	331 and 333 - 335 Burns Bay ROAD	LANE COVE	Other Industry	Contamination currently regulated under CLM Act	Current EPA List	Premise Match	386m	East
13677	Lovetts Reserve Walking Track	301B Burns Bay ROAD	LANE COVE WEST	Unclassified	Contamination currently regulated under CLM Act	Current EPA List	Premise Match	406m	North East
13702	315-317 Burns Bay Road, Lane Cove West	315-317 Burns Bay ROAD	LANE COVE WEST	Unclassified	Under preliminary investigation order	Current EPA List	Premise Match	439m	East
710	Coles Express Service Station Burns Bay	254 Burns Bay Road	Lane Cove	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	788m	North East
709	Caltex Lane Cove West	235-245 Burns Bay Road	Lane Cove West	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	801m	North East
497	Road Reserve	Pittwater Road	Gladesville	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	906m	North West
630	Coles Express Hunters Hill	4 Ryde Road	Hunters Hill	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	925m	South
13410	Ventemans Reach Bushland	Off Mars ROAD	Lane Cove West	Unclassified	Regulation under CLM Act not required	Current EPA List	Area Match	957m	North

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

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

EPA site management class	Explanation
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

120 High Street, Hunters Hill, NSW 2110

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
437	331-335 Burns Bay Road, Lane Cove NSW 2066	331 and 333 - 335 Burns Bay ROAD	LANE COVE	2 current	3487	Premise Match	386m	East
430	Lovetts Reserve Walking Track	301B Burns Bay ROAD	Lane Cove West	2 current and 3 former	3475	Premise Match	406m	North East
435	315-317 Burns Bay Road, Lane Cove West	315-317 Burns Bay ROAD	LANE COVE WEST	1 current	3482	Premise Match	439m	East
441	315-317 Burns Bay Road, Lane Cove West	315-317 Burns Bay ROAD	LANE COVE WEST	1 current	3482	Premise Match	439m	East

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

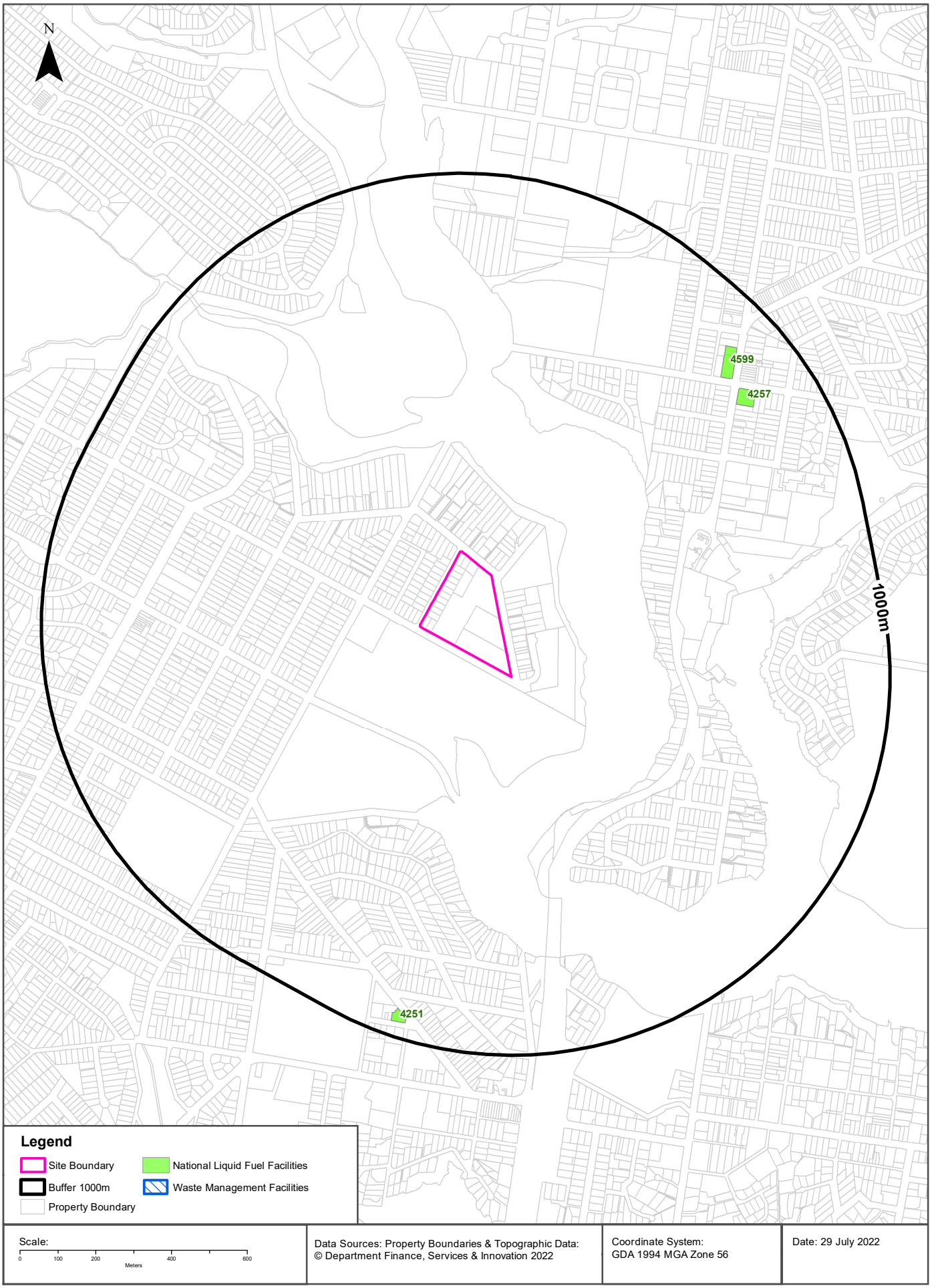
Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

120 High Street, Hunters Hill, NSW 2110



Waste Management & Liquid Fuel Facilities

120 High Street, Hunters Hill, NSW 2110

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4257	Shell	Coles Express Burns Bay Lane Cove	254 Burns Bay Road	Lane Cove	Petrol Station	Operational		25/07/2011	Premise Match	788m	North East
4599	Caltex	Caltex Woolworths Lane Cove	235 Burns Bay Road	Lane Cove West	Petrol Station	Operational		25/07/2011	Premise Match	801m	North East
4251	Shell	Coles Express Hunters Hill	4 Ryde Road	Hunters Hill	Petrol Station	Operational		25/07/2011	Premise Match	925m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia
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PFAS Investigation & Management Programs

120 High Street, Hunters Hill, NSW 2110

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

120 High Street, Hunters Hill, NSW 2110

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

120 High Street, Hunters Hill, NSW 2110

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

EPA Activities

120 High Street, Hunters Hill, NSW 2110

Licensed Activities under the POEO Act 1997

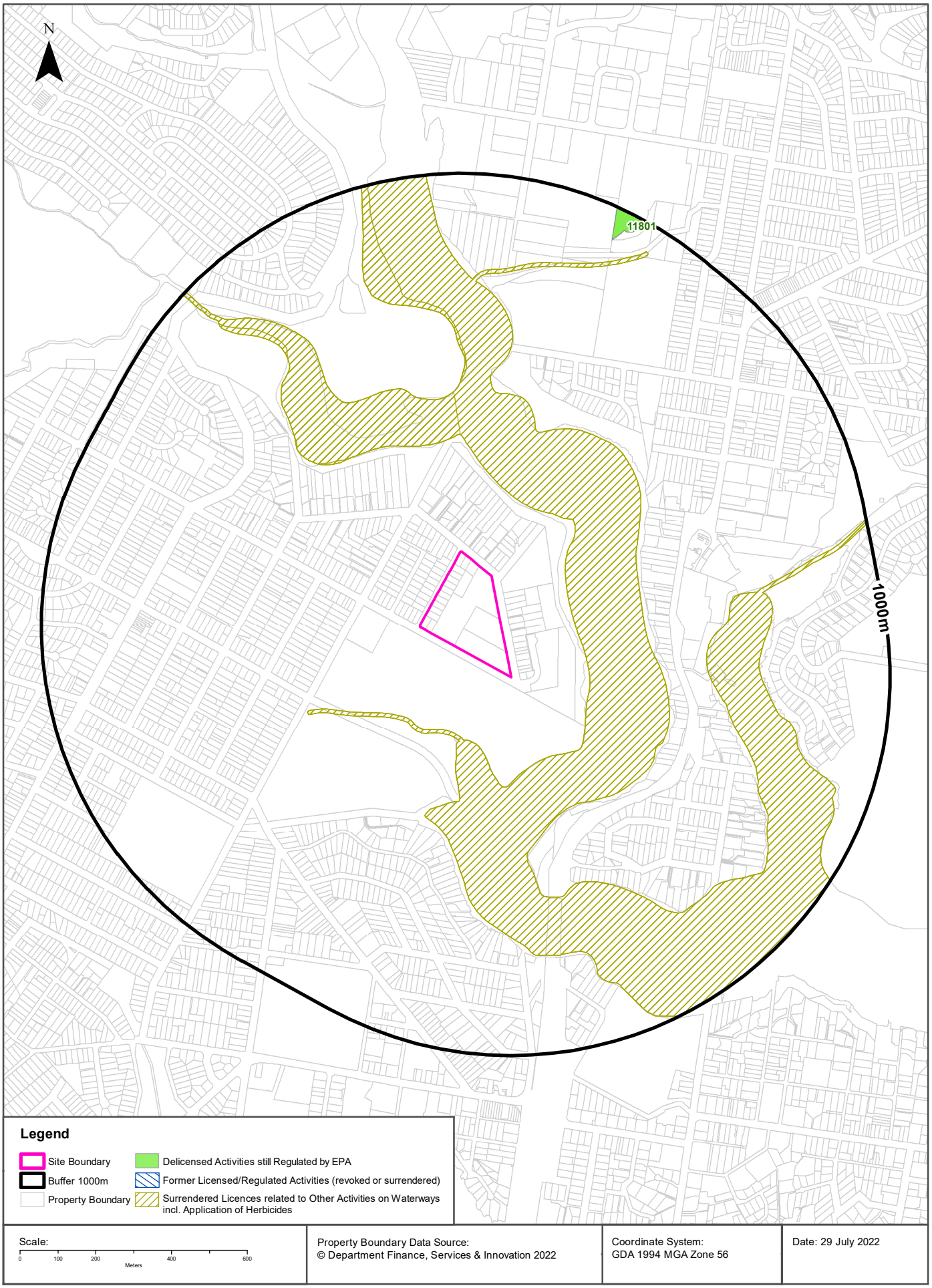
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

120 High Street, Hunters Hill, NSW 2110



EPA Activities

120 High Street, Hunters Hill, NSW 2110

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
11801	CAP-XX PTY LTD	CAP-XX	9-10/12 MARS ROAD	LANE COVE	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	914m	North

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

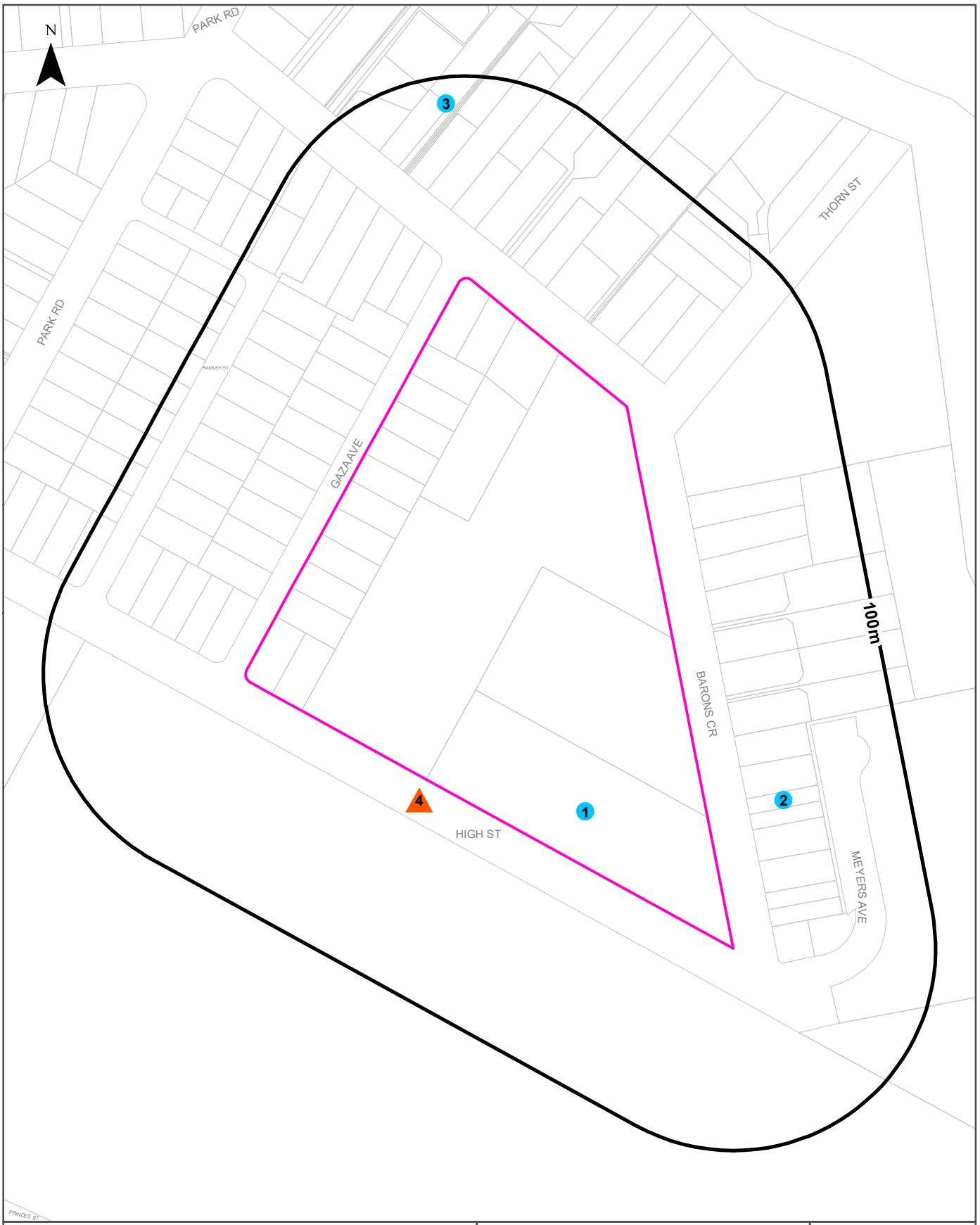
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	188m	East
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	188m	East
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	188m	East
5030	CITY OF RYDE	AREAS REQUIRING MOSQUITO TREATMENT WITHIN THE LGA OF RYDE CITY COUNCIL - RYDE NSW 2112	Surrendered	11/08/2000	Miscellaneous licensed discharge to waters (at any time) - Pesticide application in areas requiring mosquito treatment	Network of Features	294m	North West

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Historical Business Directories

120 High Street, Hunters Hill, NSW 2110



Legend

- Site Boundary
- Buffer 100m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 30 60 90 120 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

120 High Street, Hunters Hill, NSW 2110

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	HOMES &/OR INSTITUTIONS.	Montefiore Jewish Home., 120 High St., Hunters Hill. 2110	42348	1975	Premise Match	0m	On-site
	HOMES & INSTITUTIONS (H490)	Sir Moses Montifiore Jewish Home (The), 120 High St., Hunters Hill	316629	1970	Premise Match	0m	On-site
2	CLEANERS-GENERAL.	Craft Cleaning Co., 108 Barons Cr., Hunters Hill. 2110	14304	1978	Premise Match	21m	South East
	CLEANERS-INDUSTRIAL	Craft Cleaning Co., 108 Barons Cr., Hunters Hill. 2110	14337	1978	Premise Match	21m	South East
3	ARCHITECTS	Gee. P. G., 44b Barons Cres., Hunters Hill	268243	1961	Premise Match	61m	North

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Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	Homes & Institutions	Montefiore Jewish Home, High St., Hunters Hill	100572	1965	Road Match	0m
	HOMES & INSTITUTIONS	Montefiore Jewish Home, High St., Hunters Hill	324490	1961	Road Match	0m
	HOMES & INSTITUTIONS	Montefiore Jewish Home, High St., Hunters Hill	62440	1950	Road Match	0m

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Historical Business Directories

120 High Street, Hunters Hill, NSW 2110

Dry Cleaners, Motor Garages & Service Stations 1948-1993 Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

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Dry Cleaners, Motor Garages & Service Stations 1948-1993 Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Aerial Imagery 2022

120 High Street, Hunters Hill, NSW 2110

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 29 July 2022
0 30 60 90 120 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2016

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 2011

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 2005

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 2000

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1994

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1991

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1986

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1982

120 High Street, Hunters Hill, NSW 2110

Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 29 July 2022
0 30 60 90 120 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1978

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1970

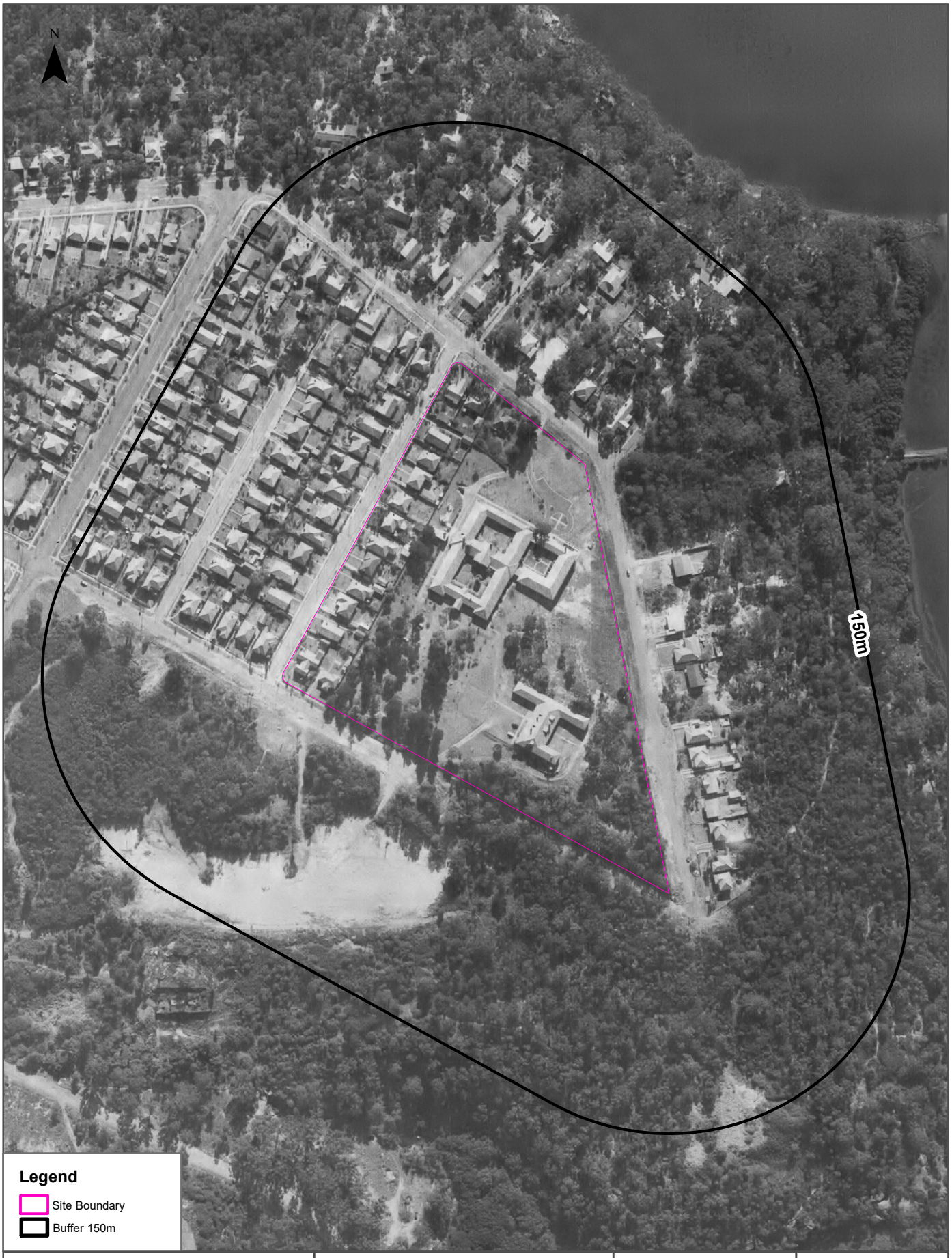
120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1965

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1961

120 High Street, Hunters Hill, NSW 2110

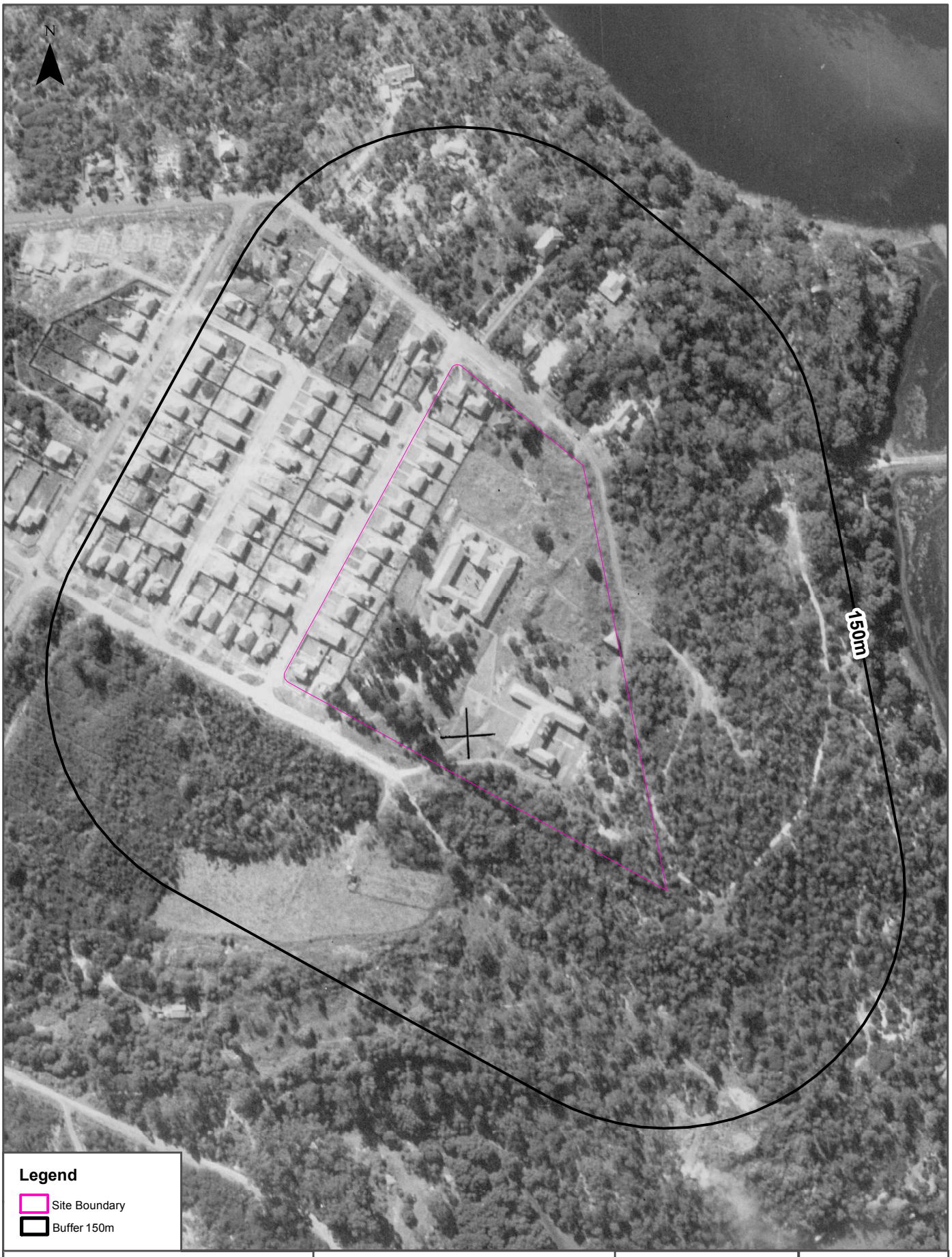


Aerial Imagery 1955, 1956

120 High Street, Hunters Hill, NSW 2110

Aerial Imagery 1951

120 High Street, Hunters Hill, NSW 2110



Aerial Imagery 1943

120 High Street, Hunters Hill, NSW 2110

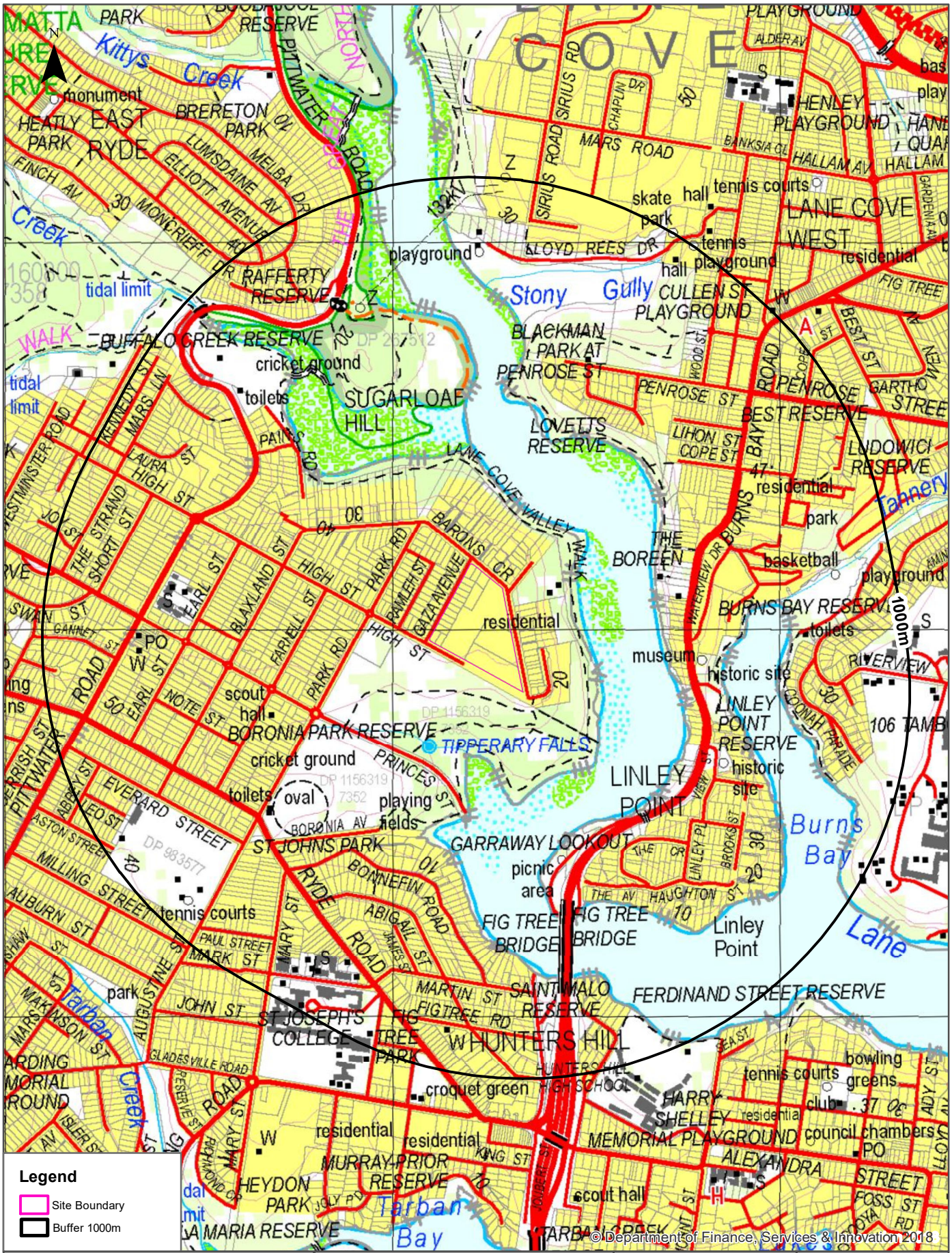
Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 29 July 2022
0 30 60 90 120 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 1930

120 High Street, Hunters Hill, NSW 2110

Topographic Map 2015

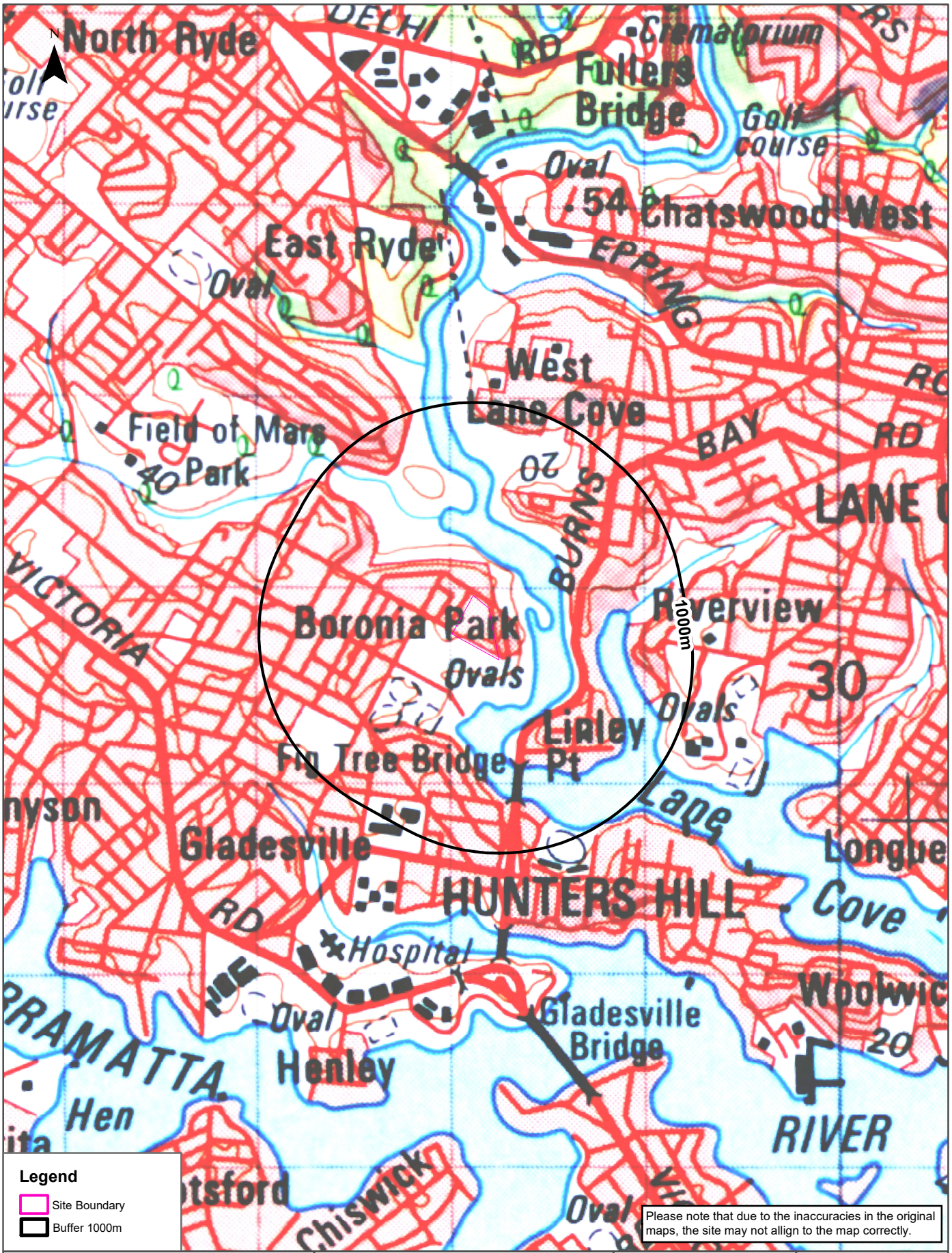
120 High Street, Hunters Hill, NSW 2110



Scale:	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 29 July 2022

Historical Map 1975

120 High Street, Hunters Hill, NSW 2110



Historical Map c.1936

120 High Street, Hunters Hill, NSW 2110

Legend

- Site Boundary
- Buffer 1000m

Please note that due to the inaccuracies in the original maps, the site may not allign to the map correctly.

Scale:	Data Sources:	Coordinate System:	Date:
0 310 620 930 1,240 Meters	Australia 1:63360 Produced by Australian Section Imperial General Staff	GDA 1994 MGA Zone 56	29 July 2022

Historical Map c.1917

120 High Street, Hunters Hill, NSW 2110

Scale: 0 310 620 930 1,240 Meters

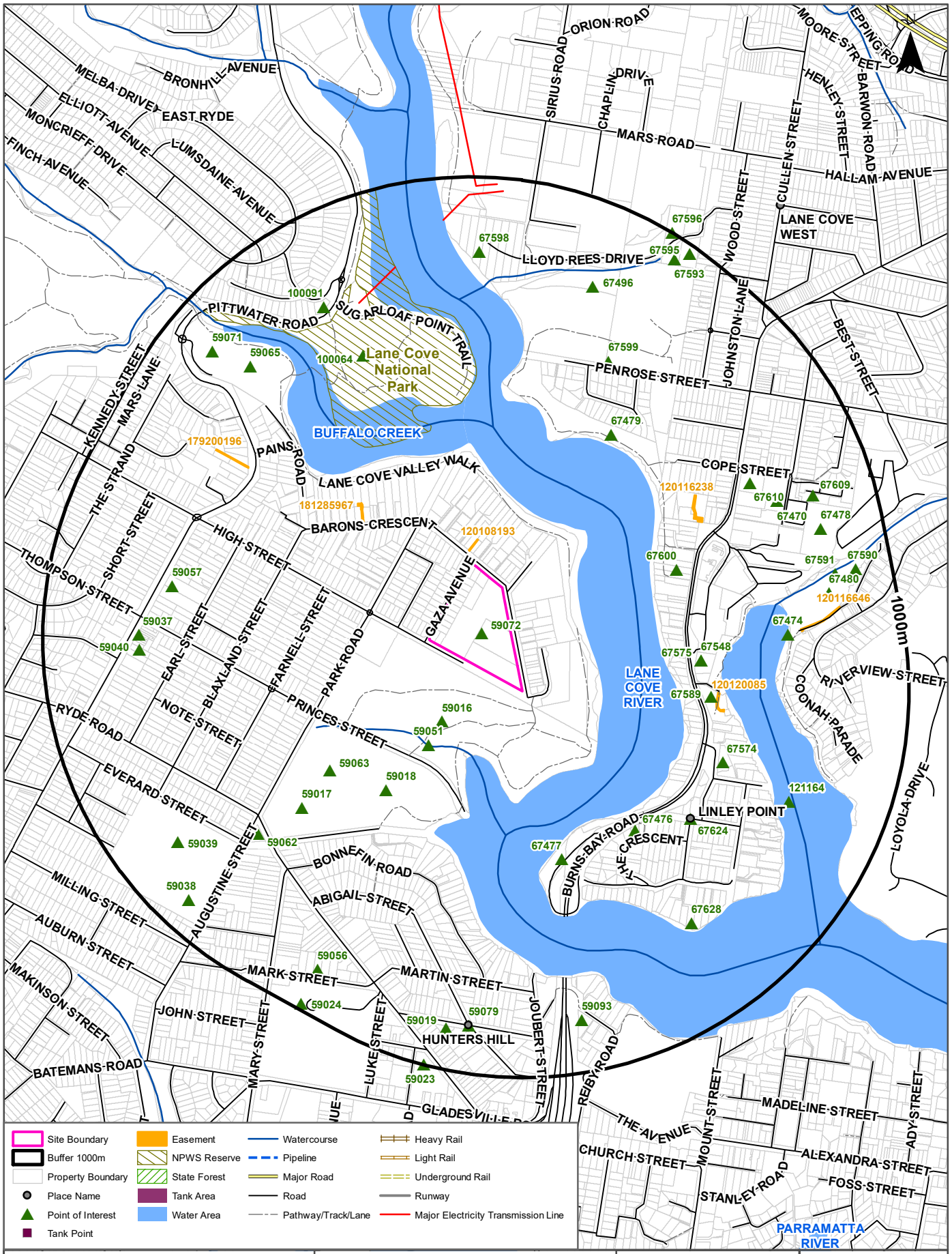
Data Sources: Australia 1:63360
Produced by Australian Section Imperial General Staff

Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 July 2022

Topographic Features

120 High Street, Hunters Hill, NSW 2110



Topographic Features

120 High Street, Hunters Hill, NSW 2110

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
59072	Community Home	HUNTERS HILL MONTEFIORE HOME	0m	On-site
59016	Park	BORONIA PARK RESERVE	169m	South
59051	Waterfall	TIPPERARY FALLS	239m	South West
59018	Sports Field	PLAYING FIELDS	394m	South West
59063	Sports Field	CRICKET GROUND	425m	South West
67477	Picnic Area	CUNNINGHAMS REACH	447m	South
67600	Park	THE BOREEN	452m	East
67476	Park	GARRAWAY LOOKOUT	463m	South East
67575	Historic Site	CARISBROOK	469m	East
67548	Museum	CARISBROOK HOUSE	469m	East
67479	Park	LOVETTS RESERVE	485m	North East
67589	Park	LINLEY POINT RESERVE	489m	East
59017	Sports Field	OVAL	546m	South West
67624	Suburb	LINLEY POINT	546m	South East
67574	Historic Site	LINLEY	550m	South East
100064	Mountain Like	SUGARLOAF HILL	605m	North West
67599	Park	BLACKMAN PARK AT PENROSE ST	630m	North East
59062	Park	ST JOHNS PARK	670m	South West
59057	Primary School	BORONIA PARK PUBLIC SCHOOL	679m	West
67610	Community Home	CAROLINE CHISHOLM NURSING HOME	696m	North East
67474	Boat Ramp	Boat Ramp	703m	East
67628	Headland	LINLEY POINT	743m	South East
67470	Retirement Village	CAROLINE CHISHOLM RETIREMENT VILLAGE	746m	North East
121164	Bay / Inlet / Basin	BURNS BAY	746m	South East
59040	Place Of Worship	UNITING CHURCH	751m	West
59037	Post Office	BORONIA PARK POST OFFICE	751m	West
59065	Sports Field	CRICKET GROUND	764m	North West
100091	Park	RAFFERTY RESERVE	765m	North West
67496	Sports Field	BLACKMAN PARK	780m	North
67598	Picnic Area	PLAYGROUND	807m	North
67480	Sports Field	BURNS BAY RESERVE	827m	East

Map Id	Feature Type	Label	Distance	Direction
59039	Sports Field	CRICKET GROUND	836m	South West
67609	Retirement Village	CAROLINE CHISHOLM RETIREMENT VILLAGE	839m	East
67478	Park	Park	839m	East
67591	Sports Court	BASKETBALL	852m	East
59071	Park	BUFFALO CREEK RESERVE	865m	North West
59093	Park	ST MALO RESERVE	865m	South
59079	Suburb	HUNTERS HILL	876m	South
59056	Primary School	VILLA MARIA CATHOLIC PRIMARY SCHOOL	887m	South West
59019	Place Of Worship	ANGLICAN CHURCH	894m	South
67590	Park	PLAYGROUND	906m	East
59038	Sports Court	TENNIS COURTS	918m	South West
67593	Community Facility	LANE COVE AND LONGUEVILLE GUIDE HALL	945m	North East
67595	Park	PLAYGROUND	980m	North East
59024	High School	ST JOSEPH'S COLLEGE	985m	South West
59023	Park	FIG TREE PARK	998m	South
67596	Sports Court	SKATE PARK	1000m	North East

Topographic Data Source: © Land and Property Information (2015)
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Topographic Features

120 High Street, Hunters Hill, NSW 2110

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks Data Source: © Land and Property Information (2015)
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Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120108193	Primary	Undefined		32m	North
181285967	Primary	Right of way	VAR	294m	North West
120120085	Primary	Undefined		503m	East
120116238	Primary	Undefined		526m	North East
179200196	Primary	Right of way	3.05M & VAR	622m	North West
120116646	Primary	Undefined		737m	East

Easements Data Source: © Land and Property Information (2015)
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Topographic Features

120 High Street, Hunters Hill, NSW 2110

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N0083	NATIONAL PARK	Lane Cove National Park	24/04/1992	358m	North

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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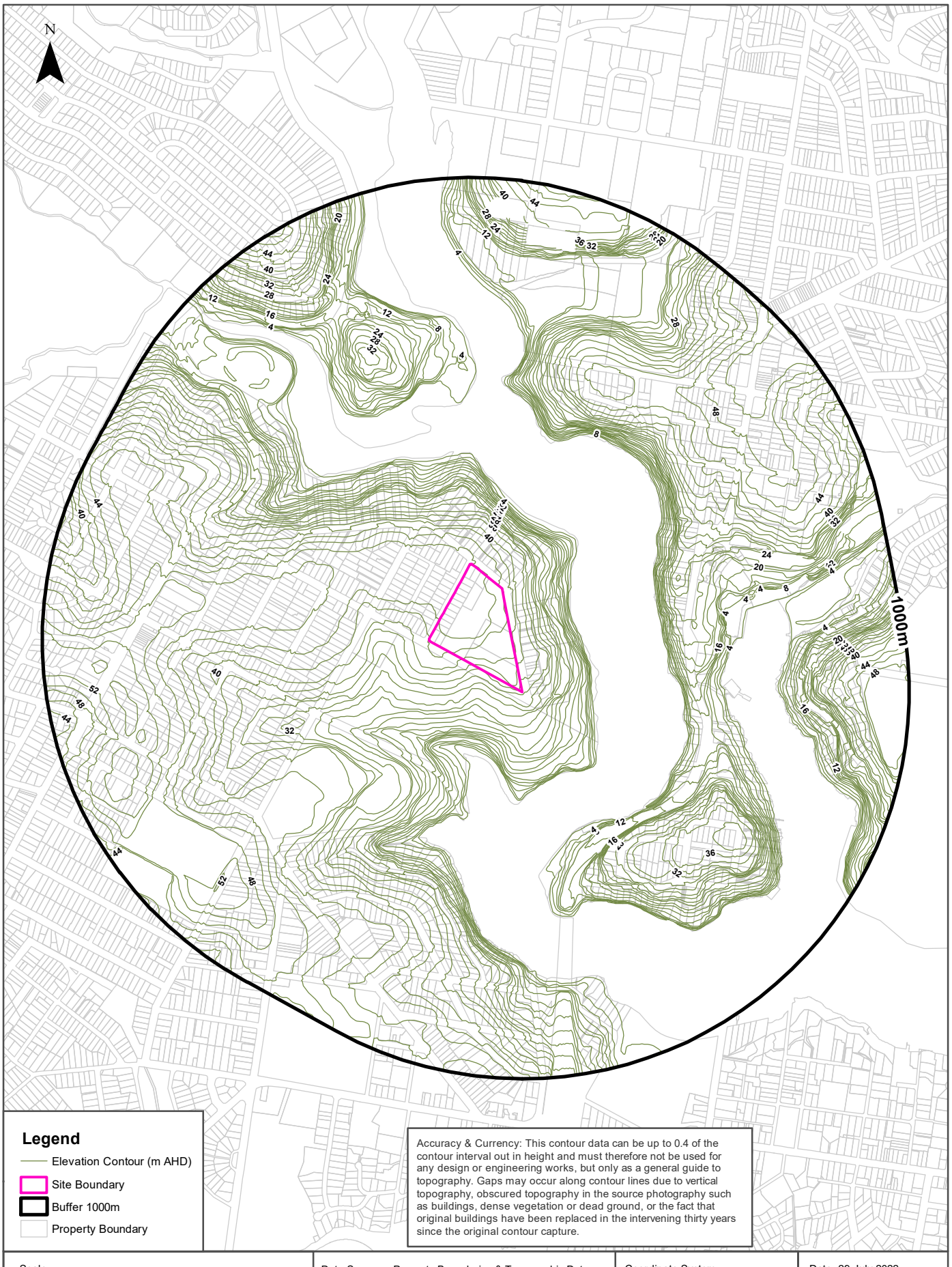
Elevation Contours (m AHD)

120 High Street, Hunters Hill, NSW 2110



Hydrogeology & Groundwater

120 High Street, Hunters Hill, NSW 2110

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

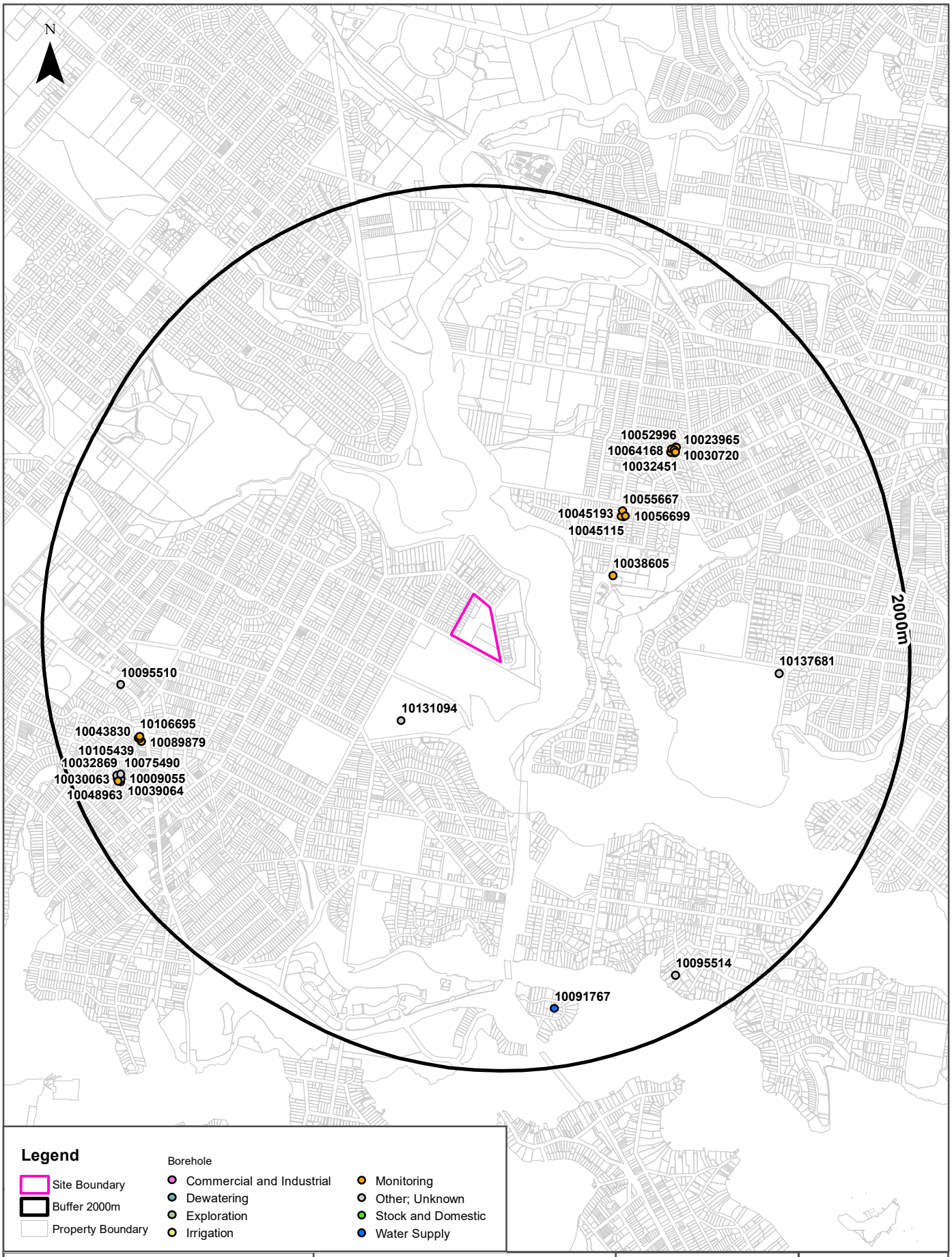
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

120 High Street, Hunters Hill, NSW 2110



Hydrogeology & Groundwater

120 High Street, Hunters Hill, NSW 2110

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10131094	GW108901	Other	Unknown	06/06/2008	182.50		AHD	2600	0.750	38.00	487m	South West
10038605	GW202406	Monitoring	Functional	27/08/2010	6.00		AHD		40.000	2.10	622m	East
10045193	GW114975	Monitoring	Functional	07/06/2011	7.30		AHD				781m	North East
10045115	GW114976	Monitoring	Functional	07/06/2011	8.30		AHD				790m	North East
10056699	GW114973	Monitoring	Functional	08/06/2011	8.50		AHD			2.77	800m	North East
10055667	GW114974	Monitoring	Functional	08/06/2011	8.50		AHD				801m	North East
10032451	GW113329	Monitoring	Functional	15/01/2009	6.00		AHD				1164m	North East
10051354	GW113330	Monitoring	Functional	15/01/2009	6.00		AHD				1164m	North East
10041368	GW113328	Monitoring	Functional	15/01/2009	0.80		AHD				1177m	North East
10064168	GW113331	Monitoring	Functional	15/01/2009	0.80		AHD				1177m	North East
10108761	GW113327	Monitoring	Functional	15/01/2009	5.60		AHD				1181m	North East
10093009	GW113326	Monitoring	Functional	14/01/2009	6.00		AHD				1184m	North East
10030720	GW113325	Monitoring	Functional	04/12/2013	1.50		AHD				1187m	North East
10023965	GW113324	Monitoring	Functional	14/01/2009	6.00		AHD				1200m	North East
10052996	GW113323	Monitoring	Functional	14/01/2009	6.00		AHD				1200m	North East
10137681	GW053747	Other	Unknown	01/10/1982	30.50		AHD	0-500 ppm			1364m	East
10089879	GW109575	Monitoring	Unknown	05/11/2002	7.50		AHD			3.23	1602m	West
10106695	GW109576	Monitoring	Unknown	05/11/2002	8.10		AHD			3.51	1602m	West
10105439	GW109573	Monitoring	Unknown	04/11/2002	8.10		AHD			4.47	1606m	West
10043830	GW109574	Monitoring	Unknown	04/11/2002	9.00		AHD			4.28	1613m	West
10095510	GW108366	Unknown	Unknown	10/09/2007			AHD				1633m	West
10091767	GW106427	Water Supply	Unknown	01/01/1950	3.00		AHD		10.000	3.00	1717m	South
10075490	GW108367	Unknown	Unknown	10/09/2007			AHD				1754m	West
10095514	GW107688	Unknown	Unknown	21/12/2006			AHD				1757m	South East
10039064	GW108365	Unknown	Unknown	10/09/2007			AHD				1761m	South West
10009055	GW108364	Unknown	Unknown	10/09/2007			AHD				1768m	South West
10032869	GW108363	Unknown	Unknown	10/09/2007			AHD				1773m	West
10030063	GW108362	Unknown	Abandoned	10/09/2007			AHD				1777m	South West
10048963	GW108361	Monitoring	Abandoned	01/03/2005	6.00		AHD				1779m	South West

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

120 High Street, Hunters Hill, NSW 2110

Driller's Logs

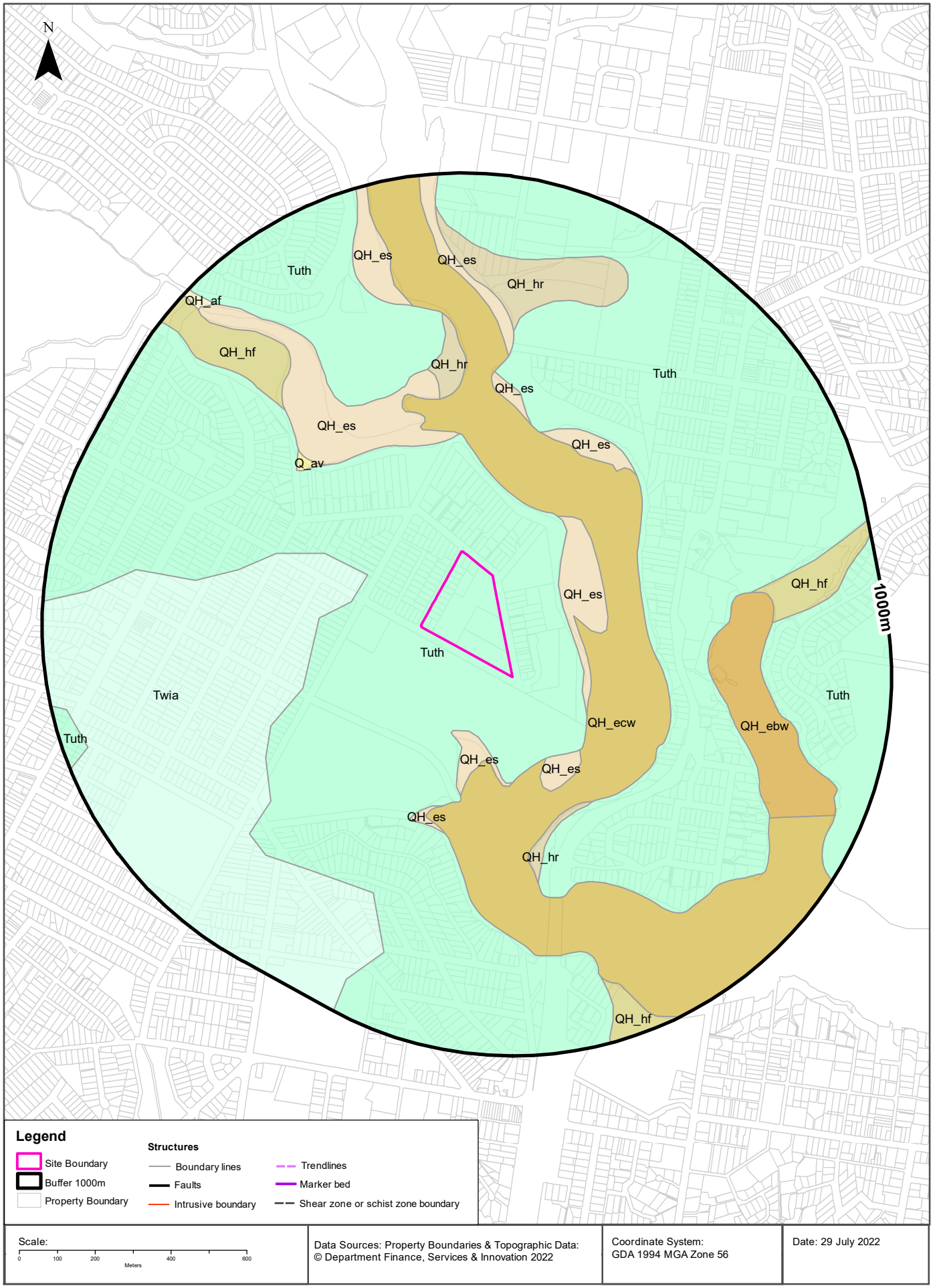
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10131094	0.00m-1.00m FILL,SAND AND ROCKS 1.00m-9.80m SANDSTONE L/BROWN 9.80m-9.90m SANDSTONE FRACTURED 9.90m-30.30m SANDSTONE GREY 30.30m-30.40m SANDSTONE FRACTURED 30.40m-41.00m SANDSTONE GREY 41.00m-43.00m SANDSTONE SHALE BEDDING 43.00m-111.00m SANDSTONE GREY 111.00m-114.00m SANDSTONE SHALE BEDDING 114.00m-133.00m SANDSTONE GREY 133.00m-133.50m SANDSTONE FINE QUARTZ 133.50m-169.00m SANDSTONE GREY 169.00m-174.50m SANDSTONE SHALE BEDDING 174.50m-178.00m SANDSTONE FINE QUARTZ 178.00m-179.50m SANDSTONE, QUARTZ VERY SOFT 179.50m-182.50m SANDSTONE GREY	487m	South West
10038605	0.00m-0.20m Fill; Concrete 0.20m-0.65m Fill; Silty Sandy Clay, low plasticity, dark brown, fine to medium grained sand, with igneous gravel 0.65m-2.50m Sandstone; fine to coarse grained, orange & yellow 2.50m-4.00m Sandstone; as above, but light grey, brown & orange 4.00m-6.00m Sandstone; as above, but orange & grey	622m	East
10045193	0.00m-0.10m CONCRETE 0.10m-0.20m FILL, SAND, LIGHT BROWN,M/GRAINED 0.20m-0.60m GRAVELLY CLAY, BROWN WITH GREY MOTTLING 0.60m-1.70m GRAVELLY CLAY GRET WHIT PURPLISH RED MOTTLING 1.70m-7.30m GRAVELLY CLAY GREY WITH DARK RED AND ORANGE MOTTLING	781m	North East
10045115	0.00m-0.10m CONCRETE 0.10m-0.20m FILL, SAND LIGHT BROWN,DRY,ORGANIC MATERIALS 0.20m-0.90m FILL,, CLAY, CRUSHED ASPHALT CHUNKS,GRAVELS,SAND DRY 0.90m-1.60m GRAVELLY CLAY,GREY WITH PURPLISH RED MOTTLING 1.60m-8.30m GRAVELLY CLAY GREY WITH DARK RED AND ORANGE MOTTLING,FIRM,DRY	790m	North East
10055667	0.00m-0.10m CONCRETE 0.10m-0.20m FILL, SAND BROWN,M/GRAINED,DRY 0.20m-1.00m FILL, GRAVELLY CLAY BROWN SOFT,GRAVELS 1.00m-1.30m CLAY GREY WITH PURPLISH MOTTLING 1.30m-8.50m CLAY GREY WITH RED MOTTLING,DRY LOW PLASTICITY	801m	North East
10137681	0.00m-0.18m Soil Sandy 0.18m-2.65m Sandstone Yellow Silty 2.65m-4.42m Sandstone Silty 4.42m-7.50m Sandstone Yellow Silty Water Supply 7.50m-11.55m Sandstone Grey 11.55m-11.89m Shale 11.89m-30.48m Sandstone Grey	1364m	East
10089879	0.00m-0.90m FILL 0.90m-1.10m CLAY,SILTY,BROWN 1.10m-2.00m CLAY SANDY ORANGE 2.00m-5.50m SHALE,BROWN 5.50m-7.50m SHALE,WEATHERED, GREY,HARD	1602m	West
10106695	0.00m-0.50m FILL 0.50m-1.20m CLAY 1.20m-3.00m CLAY,SANDY,WEATHERED,GREY BROWN 3.00m-6.00m SHALE,BROWN,DRY,SOFT 6.00m-8.10m SHALE DARK GREY,SOFT	1602m	West
10105439	0.00m-2.20m FILL 2.20m-4.00m CLAY 4.00m-5.00m SHALE 5.00m-8.10m SHALE VERY HARD	1606m	West
10043830	0.00m-0.60m FILL 0.60m-1.10m FILL,CLAY 1.10m-1.40m FILL,SAND 1.40m-2.00m CLAY 2.00m-2.90m CLAY L/BROWN 2.90m-7.00m SHALE 7.00m-9.00m SHALE DARK GREY	1613m	West

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Geology

120 High Street, Hunters Hill, NSW 2110



Geology

120 High Street, Hunters Hill, NSW 2110

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Tuth	Hawkesbury Sandstone	Medium- to coarse-grained quartz sandstone with minor shale and laminite lenses.	/Ungrouped Triassic units//Hawkesbury Sandstone//	Anisian (base) to Anisian (top)	Sandstone	0m
QH_es	Estuarine swamp	Organic-rich mud, peat, clay, silt, very fine- to fine-grained sand (marine-deposited), fine- to medium-grained sand (fluvially deposited).	/Estuarine deposits//Estuarine swamp//	Holocene (base) to Now (top)	Organic rich sediment	166m
Twia	Ashfield Shale	Black to light grey shale and laminite.	/Wianamatta Group//Ashfield Shale//	Middle Triassic (base) to Middle Triassic (top)	Shale	188m
QH_ecw	Estuarine channel deposits (subaqueous)	Fine- to medium-grained lithic-carbonate-quartz sand (marine-deposited), silt, clay, shell, gravel.	/Estuarine deposits//Estuarine channel deposits/Estuarine channel deposits (subaqueous)/	Holocene (base) to Now (top)	Clastic sediment	190m
QH_hr	Anthropogenic deposits - reclaimed estuarine areas	Natural surface elevation raised by placement of fill over former estuarine swamps and subaqueous estuarine margins (supratidal to subtidal zone); estuarine banks and islands formed from dredge spoil.	/Anthropogenic deposits//Anthropogenic deposits - reclaimed estuarine areas//	Holocene (base) to Now (top)	Anthropogenic material	377m
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	416m
QH_ebw	Estuarine basin and bay (subaqueous)	Clay, silt, shell, very fine- to fine-grained lithic-quartz (± carbonate) sand (fluvially- and/or marine-deposited).	/Estuarine deposits//Estuarine basin and bay/Estuarine basin and bay (subaqueous)/	Holocene (base) to Now (top)	Clastic sediment	517m
QH_hf	Anthropogenic deposits - fill on Quaternary deposits	Land surface raised >1m above natural level by placement of fill on undifferentiated Quaternary deposits over an extensive area.	/Anthropogenic deposits//Anthropogenic deposits - fill on Quaternary deposits//	Holocene (base) to Now (top)	Anthropogenic material	596m
QH_af	Alluvial floodplain deposits	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	/Alluvium//Alluvial floodplain deposits//	Holocene (base) to Now (top)	Clastic sediment	923m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW
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Naturally Occurring Asbestos Potential

120 High Street, Hunters Hill, NSW 2110

Naturally Occurring Asbestos Potential

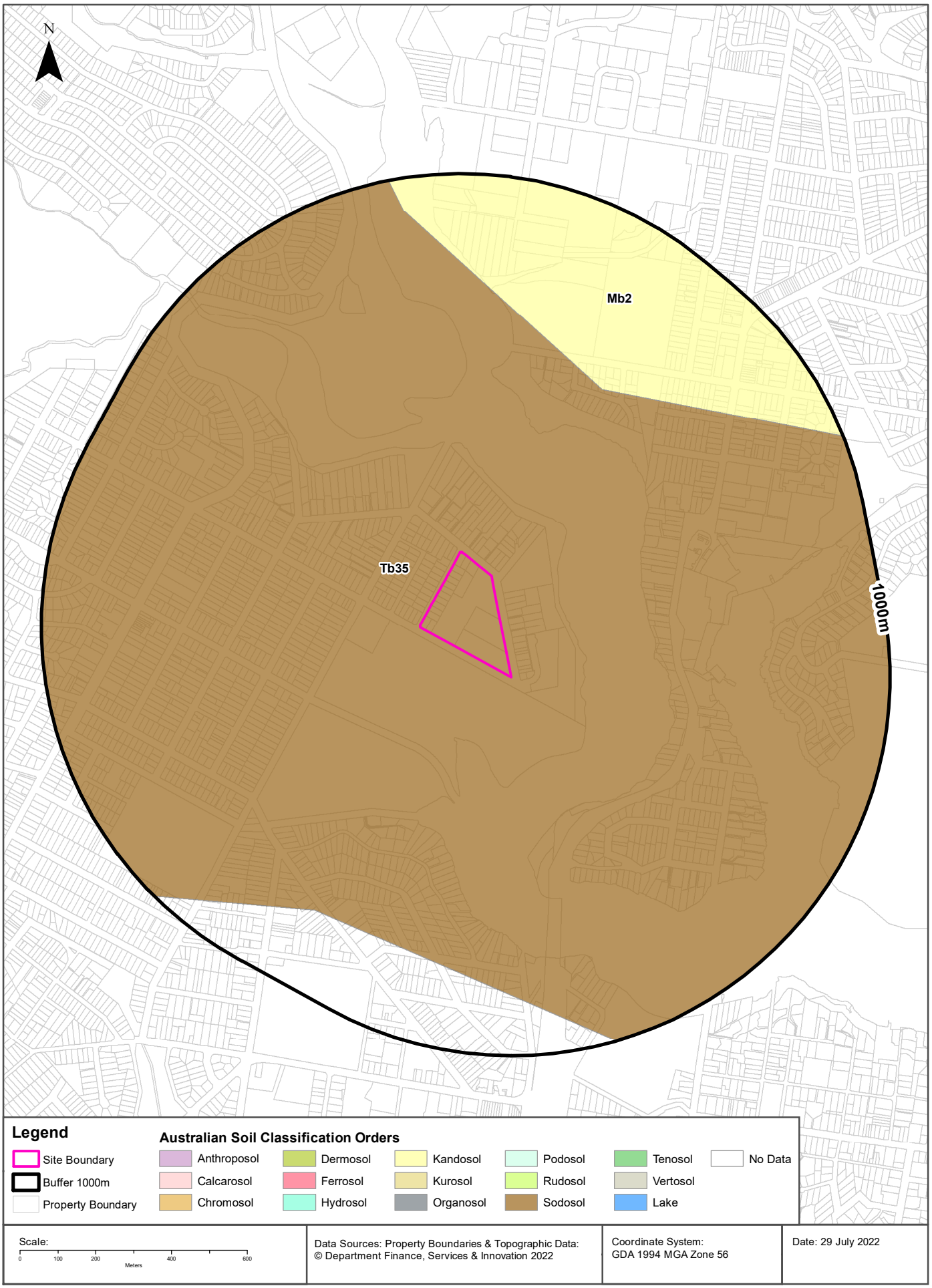
Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

120 High Street, Hunters Hill, NSW 2110



Soils

120 High Street, Hunters Hill, NSW 2110

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Tb35	Sodosol	Dissected plateau remnants--flat to undulating ridge tops with moderate to steep side slopes: chief soils are hard acidic yellow and yellow mottled soils (Dy3.41), (Dy2.21), and (Dy2.41) and hard acidic red soils (Dr2.21); many shallow profiles occur and profile thickness varies considerably over short distances. Associated are: (Gn3.54), (Gn3.14), and possibly other (Gn3) soils; (Db1.2) soils on some ridges; (Dy5.81) soils in areas transitional to unit Mb2; soils common to unit Mb2; and eroded lateritic remnants. Small areas of other soils are likely. Flat ferruginous shale or sandstone fragments are common on and/or in and/or below the soils of this unit.	0m	On-site
Mb2	Kandosol	Dissected sandstone plateau of moderate to strong relief with sandstone pillars, ledges, and slabs-- level to undulating ridges, irregularly benched slopes, steep ridges, cliffs, canyons, narrow sandy valleys: chief soils are (i) on areas of gentle to moderate relief, acid yellow leached earths (Gn2.74) and (Gn2.34) and acid leached yellow earths (Gn2.24)-sometimes these soils contain ironstone gravel; and (ii) on, or adjacent to, areas of strong relief, siliceous sands (Uc1.2), leached sands (Uc2.12) and (Uc2.2), and shallow forms of the above (Gn2) soils. Associated are: (i) on flat to gently undulating remnants of the original plateau surface, leached sands (Uc2.3), siliceous sands (Uc1.2), sandy earths (Uc5.22), and (Gn2) soils as for (i) above (these areas are in part comparable with unit Cb29); (ii) on flat ironstone gravelly remnants of the original plateau surface, (Gn2) soils as for unit Mb5(i); (iii) on gently undulating ridges where interbedded shales are exposed, shallow, often stony (Dy3.41), (Dr2.21), and related soils similar to unit Tb35; (iv) narrow valleys of (Uc2.3) soils flanked by moderate slopes of (Dy3.41) soils; (v) escarpments of steep hills with shallow (Dy) and (Dr) soils between sandstone pillars; and (vi) shallow (Um) soils, such as (Um6.21) on steep hills of basic rocks. As mapped, minor areas of units Mg20, Mm1, and Mw8 are included. Data are limited.	566m	North East

Atlas of Australian Soils Data Source: CSIRO
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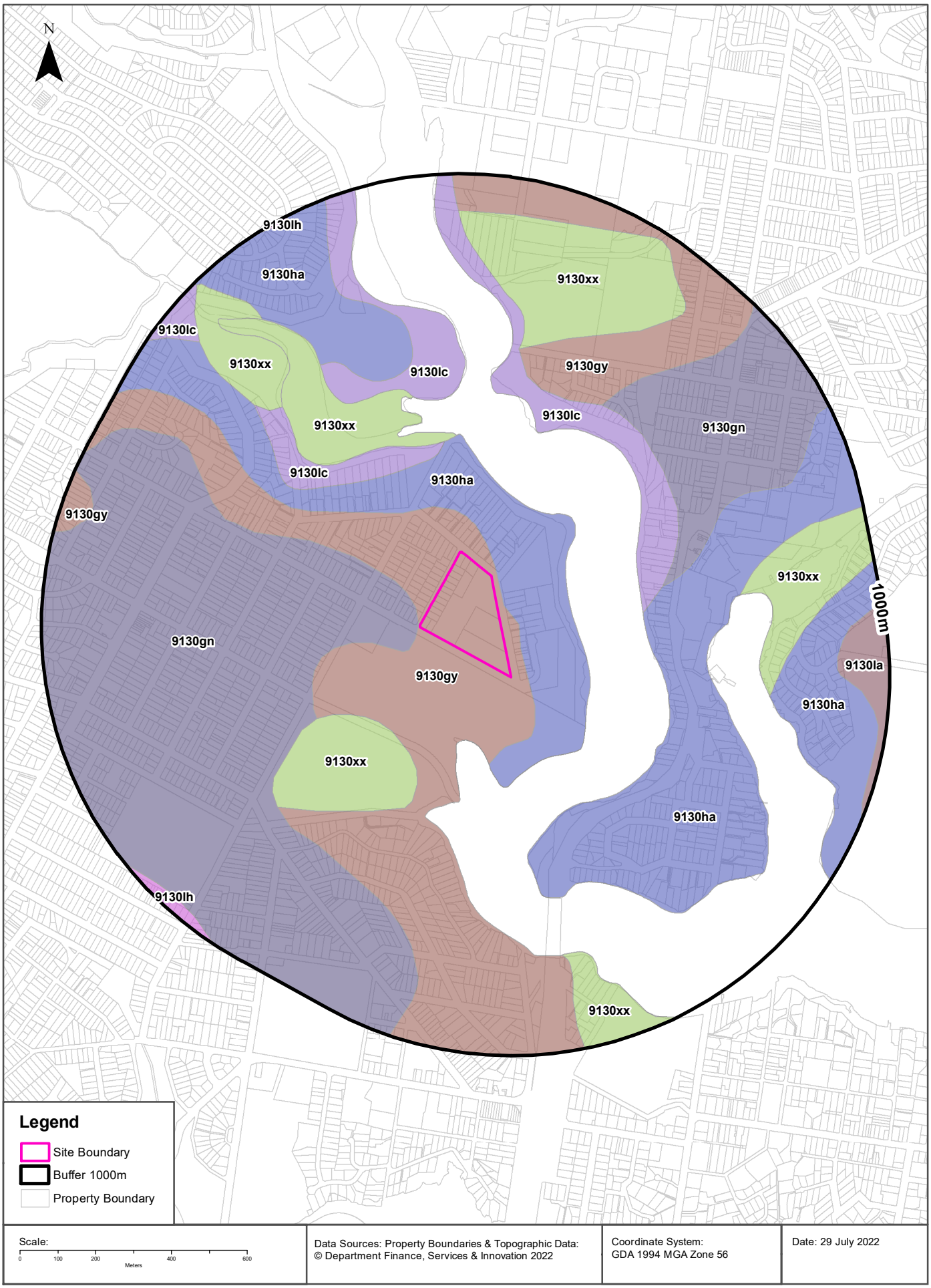
Soil Landscapes of Central and Eastern NSW

120 High Street, Hunters Hill, NSW 2110



Soils

120 High Street, Hunters Hill, NSW 2110

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9130gy	Gymea	0m	On-site
9130gn	Glenorie	5m	West
9130ha	Hawkesbury	14m	North West
9130lc	Lane Cove	258m	North West
9130xx	Disturbed Terrain	272m	South West
9130la	Lambert	861m	East
9130lh	Lucas Heights	962m	South West

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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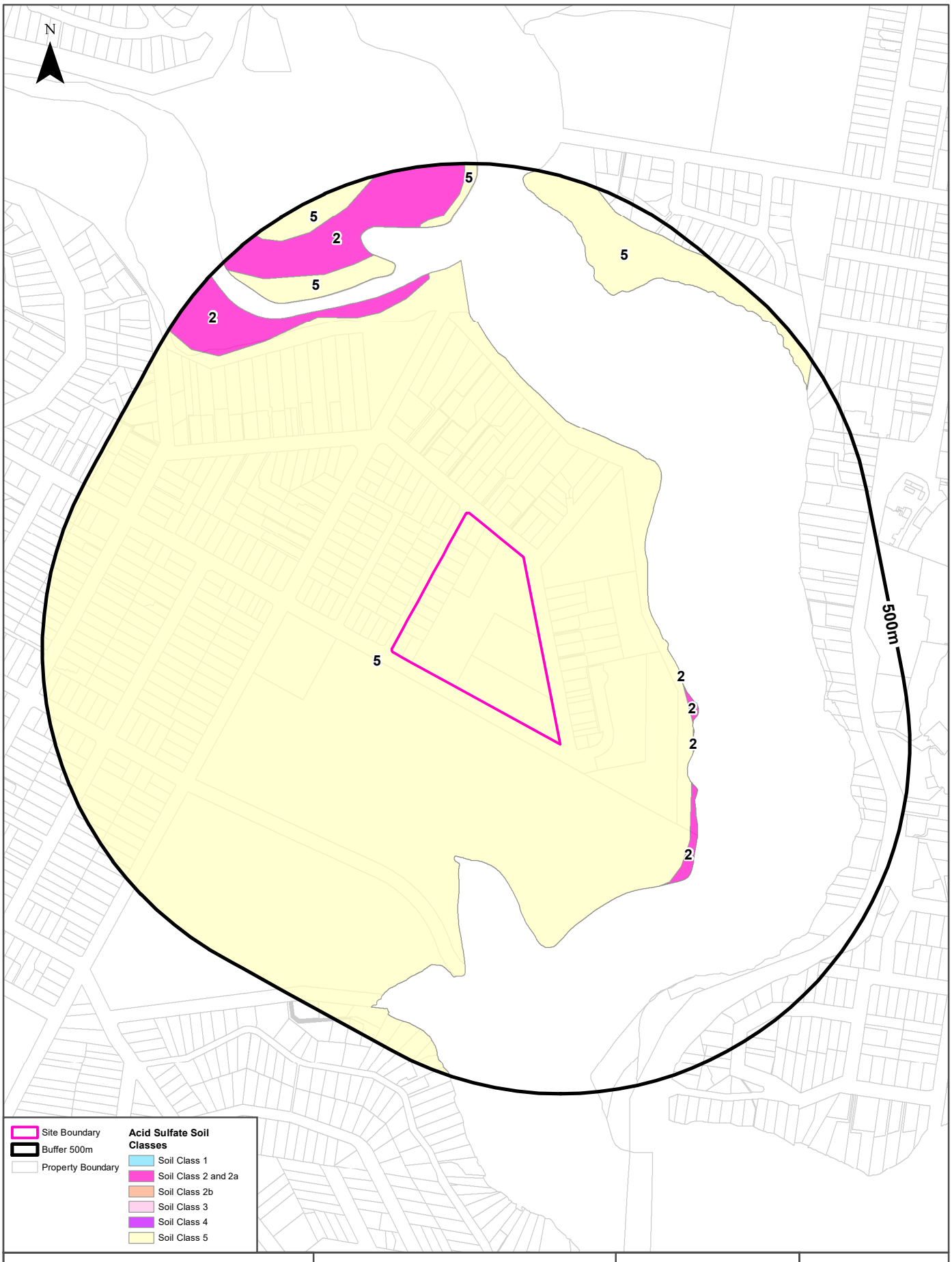
Acid Sulfate Soils

120 High Street, Hunters Hill, NSW 2110



Scale: 0 100 200 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022	Coordinate System: GDA 1994 MGA Zone 56	Date: 29 July 2022

Acid Sulfate Soils

120 High Street, Hunters Hill, NSW 2110

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Hunters Hill Local Environmental Plan 2012

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	Hunters Hill Local Environmental Plan 2012	187m	East
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	Ryde Local Environmental Plan 2014	391m	North

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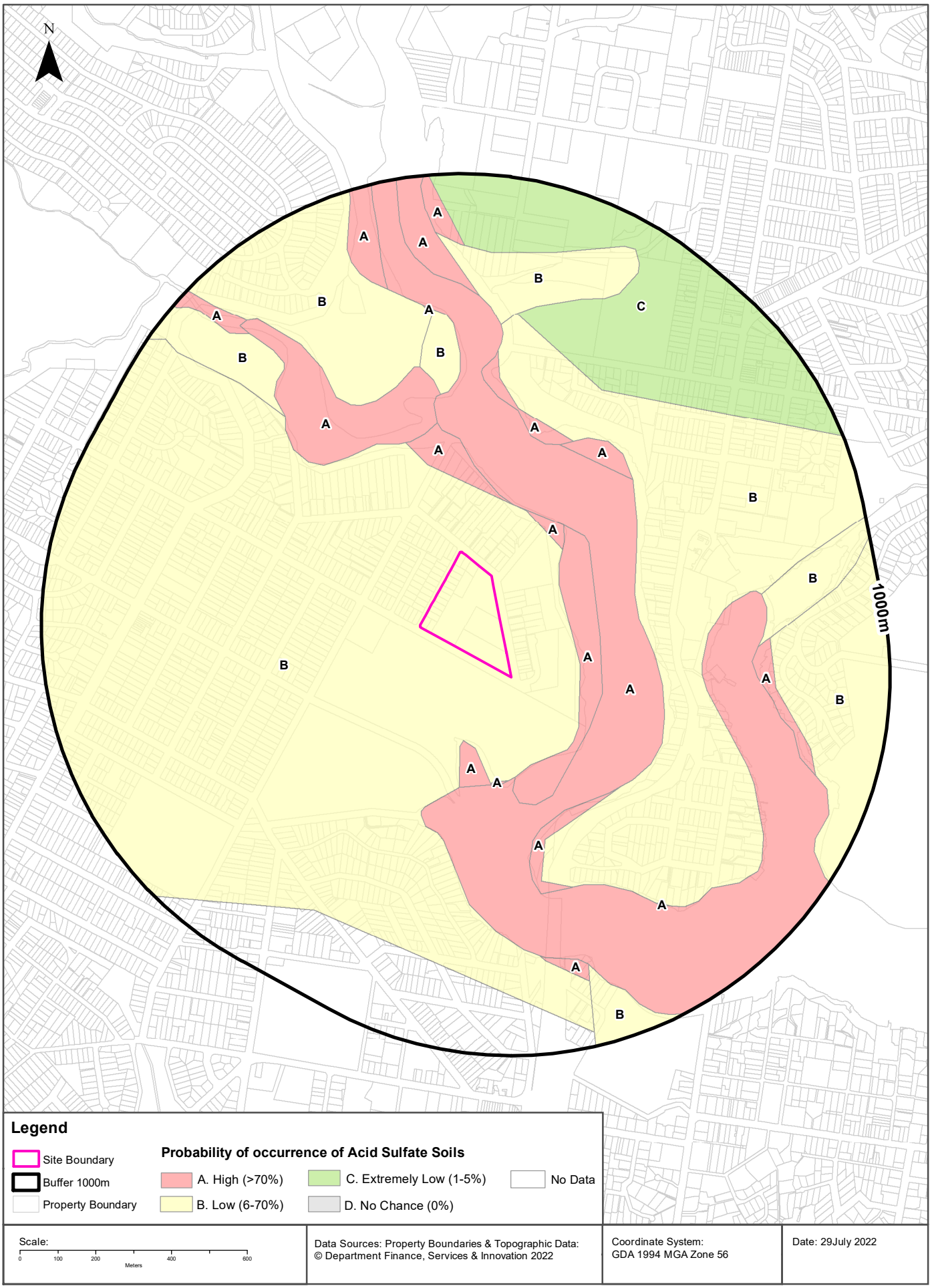
Atlas of Australian Acid Sulfate Soils

120 High Street, Hunters Hill, NSW 2110



Acid Sulfate Soils

120 High Street, Hunters Hill, NSW 2110

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	565m	North East
A	High Probability of occurrence. >70% chance of occurrence.	722m	North

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

120 High Street, Hunters Hill, NSW 2110

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

120 High Street, Hunters Hill, NSW 2110

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining & Exploration Titles

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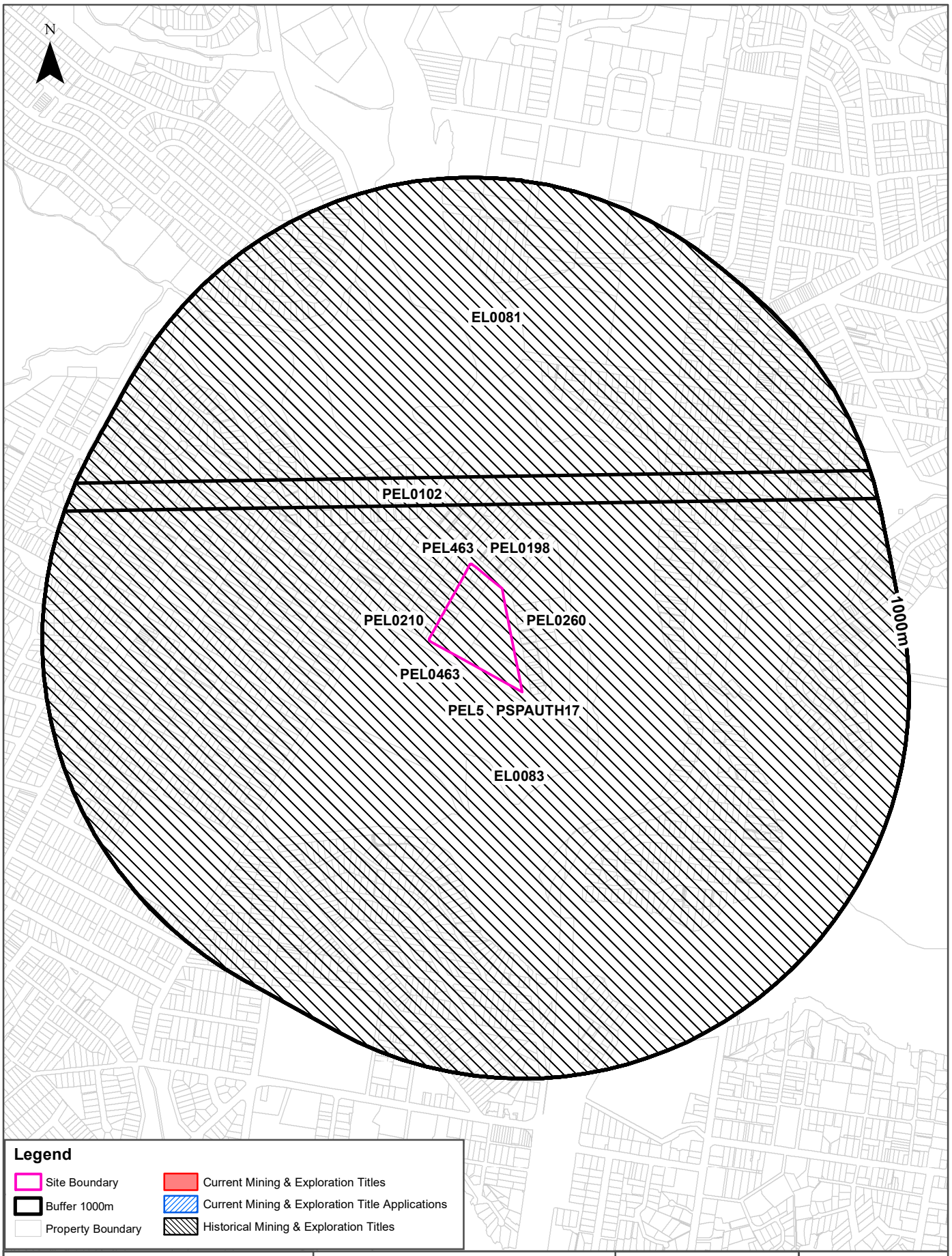

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Mining

120 High Street, Hunters Hill, NSW 2110

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

120 High Street, Hunters Hill, NSW 2110

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL0083	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	01 Feb 1967	01 Feb 1968	MINERALS		0m	On-site
PEL0102	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0463	DART ENERGY (APOLLO) PTY LTD	22/10/2008	6/03/2015	PETROLEUM	Petroleum	0m	On-site
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			PETROLEUM	Petroleum	0m	On-site
PSPAUTH17	MACQUARIE ENERGY PTY LTD	8/03/2007	7/03/2008	PETROLEUM	Petroleum	0m	On-site
PEL463	DART ENERGY (APOLLO) PTY LTD			MINERALS		0m	On-site
PEL5	AGL UPSTREAM INVESTMENTS PTY LIMITED			MINERALS		0m	On-site
PEL0198	JOHN STREVENS (TERRIGAL) NL			PETROLEUM	Petroleum	0m	On-site
PEL0260	NORTH BULLI COLLIERIES PTY LTD, AGL PETROLEUM OPERATIONS PTY LTD, THE AUSTRALIAN GAS LIGHT CO.	9/09/1981	8/03/1993	PETROLEUM	Petroleum	0m	On-site
EL0081	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	01 Feb 1967	01 Feb 1968	MINERALS		225m	North

Historical Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

State Environmental Planning Policy

120 High Street, Hunters Hill, NSW 2110

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

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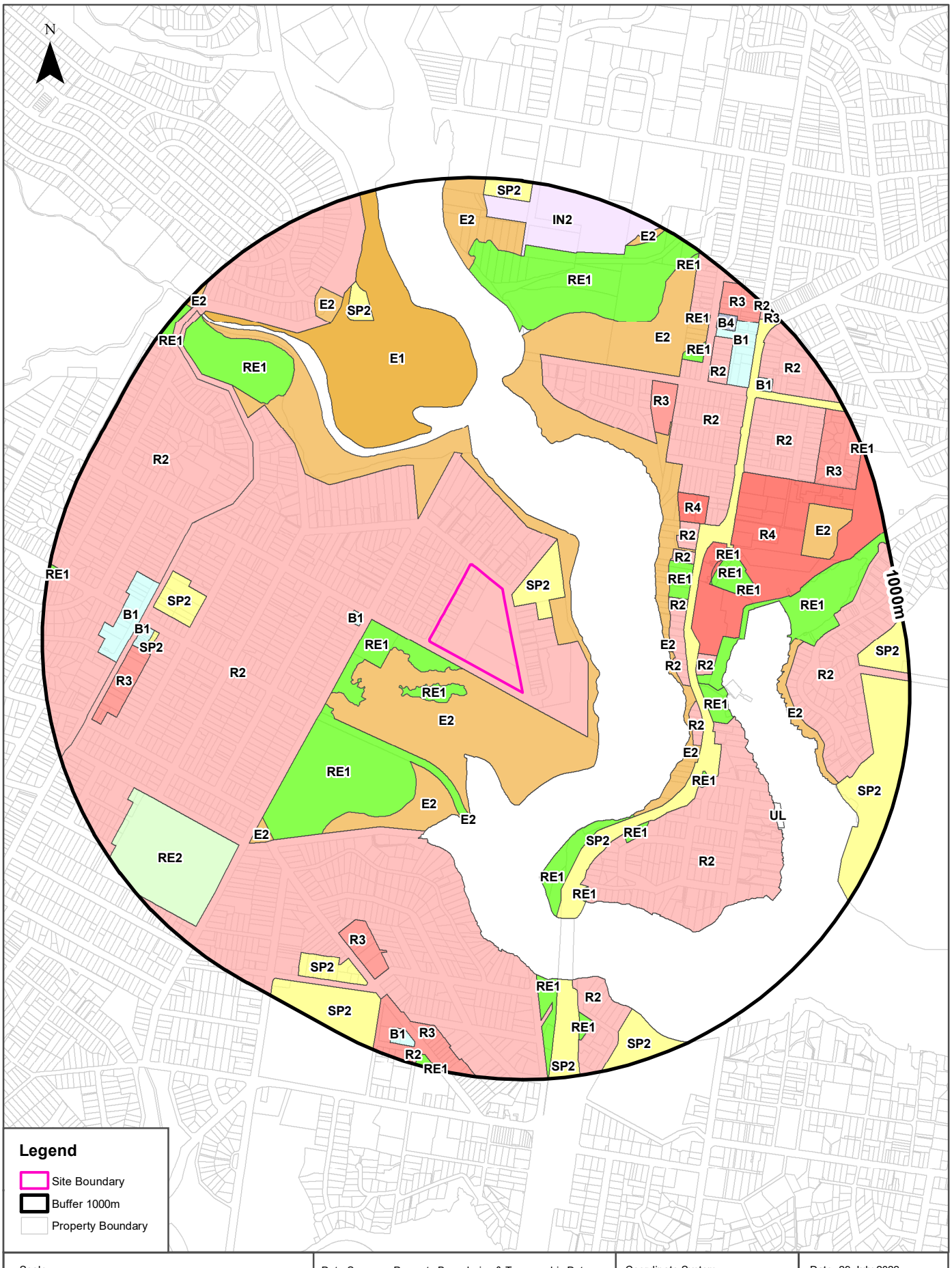
EPI Planning Zones

120 High Street, Hunters Hill, NSW 2110



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022
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Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Environmental Planning Instrument

120 High Street, Hunters Hill, NSW 2110

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		0m	On-site
SP2	Infrastructure	Sewerage System	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		20m	North East
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		21m	West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		21m	West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		58m	South West
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		181m	West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		274m	South West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		294m	South
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		353m	South
E1	National Parks and Nature Reserves		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		358m	North
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		373m	North East
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		380m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		380m	South
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	23/08/2013	23/08/2013	30/10/2020	Amendment No 12	385m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		387m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		391m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		393m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	23/08/2013	23/08/2013	30/10/2020	Amendment No 12	394m	East
SP2	Infrastructure	Road	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		404m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		417m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		431m	South East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		439m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		446m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		447m	South East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		449m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		450m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	23/08/2013	23/08/2013	30/10/2020	Amendment No 12	452m	East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		459m	East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		466m	North East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		476m	North East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		490m	North East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		507m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	23/12/2016	23/12/2016	30/10/2020	Amendment No 20	527m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		528m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		533m	East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	23/12/2016	23/12/2016	30/10/2020	Amendment No 20	534m	East
R3	Medium Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		564m	North East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	23/12/2016	23/12/2016	30/10/2020	Amendment No 20	576m	East
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		587m	West
R2	Low Density Residential		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	18/01/2019	Amendment No 2	600m	North West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	23/12/2016	23/12/2016	30/10/2020	Amendment No 20	605m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		612m	North
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		627m	South West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		652m	North West
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		655m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		678m	East
SP2	Infrastructure	Electricity Generating Works	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		680m	North
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		692m	North East
SP2	Infrastructure	Car Park	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		699m	West
UL	Unzoned Land		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		704m	South East
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		711m	West
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		713m	South
B1	Neighbourhood Centre		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		713m	West
RE2	Private Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		721m	South West
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		722m	West
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		722m	North West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		729m	South
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		745m	South
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		751m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		753m	North East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		754m	North East
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		761m	North

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		772m	East
B1	Neighbourhood Centre		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		784m	North East
IN2	Light Industrial		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		808m	North
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		818m	South West
B1	Neighbourhood Centre		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		834m	North East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		836m	South
SP2	Infrastructure	School	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		842m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		848m	North East
R3	Medium Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		850m	North East
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		854m	South
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		858m	North East
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		863m	South
SP2	Infrastructure	School	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		869m	East
B4	Mixed Use		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		872m	North East
R3	Medium Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		906m	North East
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		914m	North East
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		921m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	23/08/2013	23/08/2013	30/10/2020	Amendment No 12	936m	North East
SP2	Infrastructure		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		949m	North
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		961m	North West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		968m	South
RE1	Public Recreation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		974m	West
R3	Medium Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		978m	North East
E2	Environmental Conservation		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	18/01/2019		979m	North West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	30/10/2020		995m	North East

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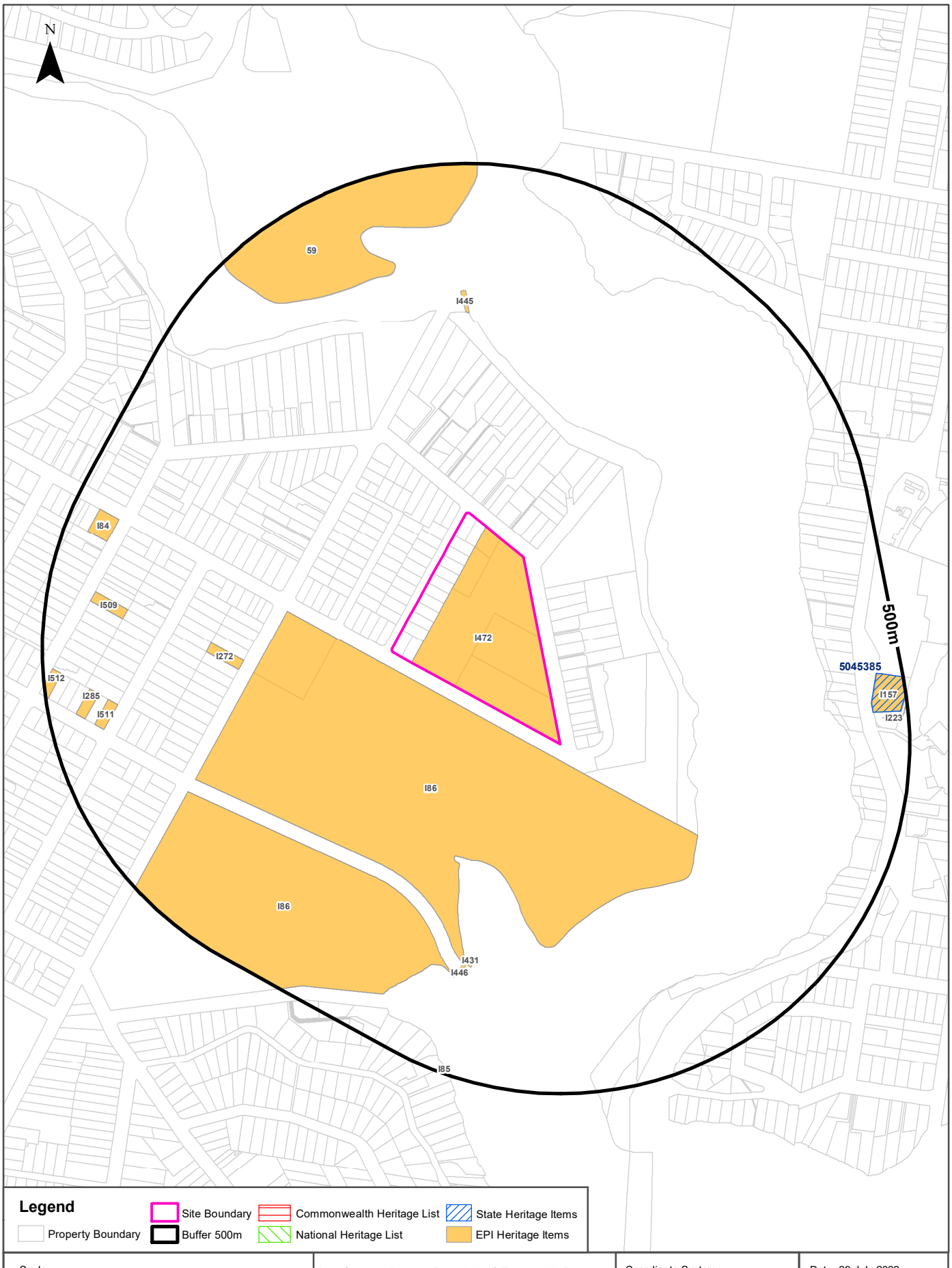
Heritage Items

120 High Street, Hunters Hill, NSW 2110



Legend

Property Boundary
Site Boundary
Buffer 500m
Commonwealth Heritage List
National Heritage List
State Heritage Items
EPI Heritage Items

Scale: 0 100 200 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022
Heritage - NSW Crown Copyright - Planning & Environment

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Heritage

120 High Street, Hunters Hill, NSW 2110

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5045385	Carisbrook	334 Burns Bay Road Lane Cove	LANE COVE	02/04/1999	00112	312	449m	East

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I472	Garden, 'Montefiore Home'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	0m	On-site
I86	Boronia Park	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	21m	South
I272	House, 'Yamba'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	213m	West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I445		Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	286m	North
I86	Boronia Park	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	294m	South West
I431		Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	332m	South
I446	Wharf site	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	342m	South
59		Item - General	State	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	06/08/2021	359m	North
I509	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	382m	West
I511	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	400m	West
I285	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	424m	West
I84	House, 'Nardoo'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	433m	West
I157	Carisbrook, 334 Burns Bay Road	Item - General	State	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	449m	East
I223	Streetscape elements (stone steps, garden bed remnants and rocky outcrop), View Street and Burns Ba*	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	462m	East
I512	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	474m	West
I85	House, former boatshed	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	492m	South

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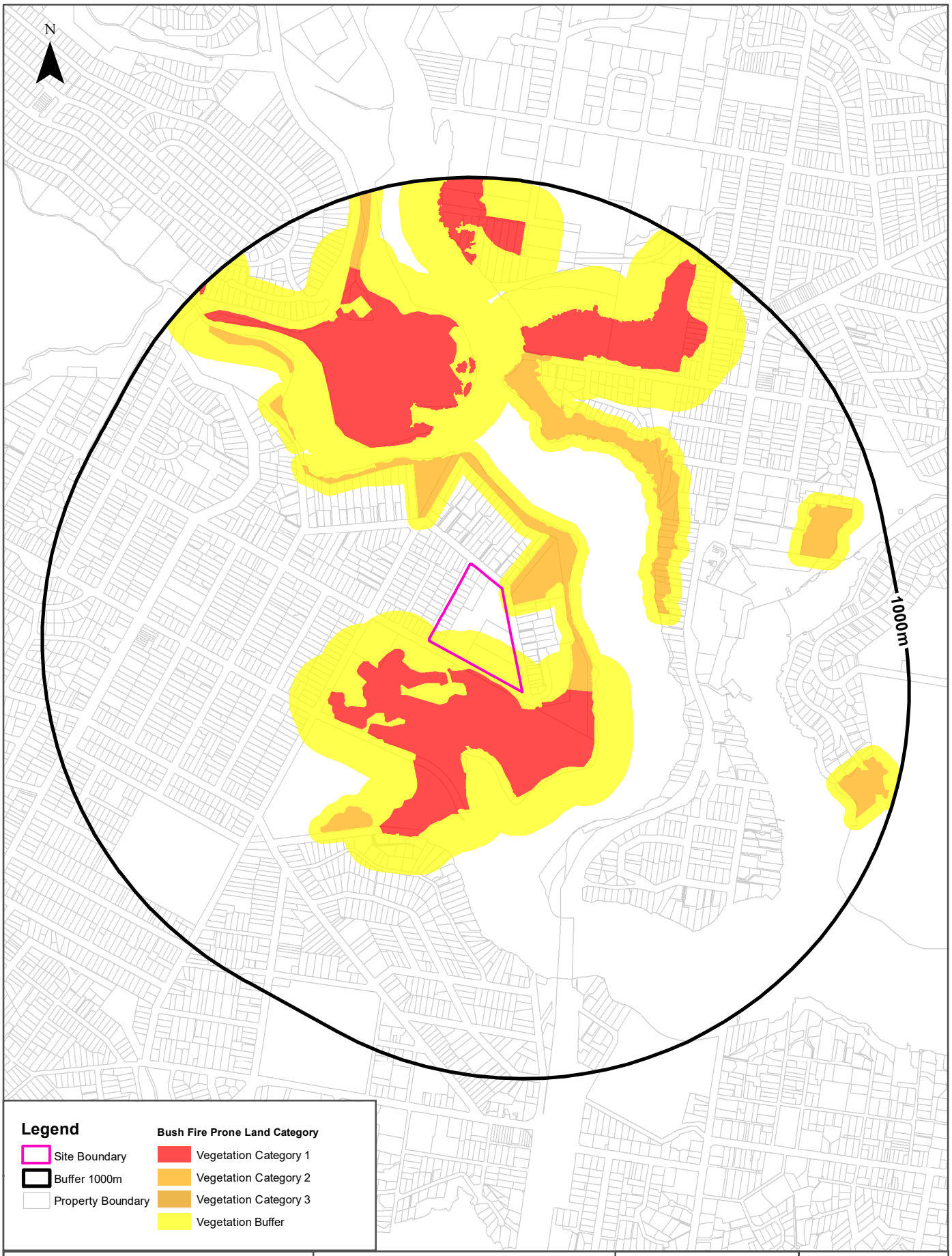
Natural Hazards - Bush Fire Prone Land

120 High Street, Hunters Hill, NSW 2110



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Natural Hazards

120 High Street, Hunters Hill, NSW 2110

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	0m	On-site
Vegetation Category 1	11m	South
Vegetation Category 2	17m	North East

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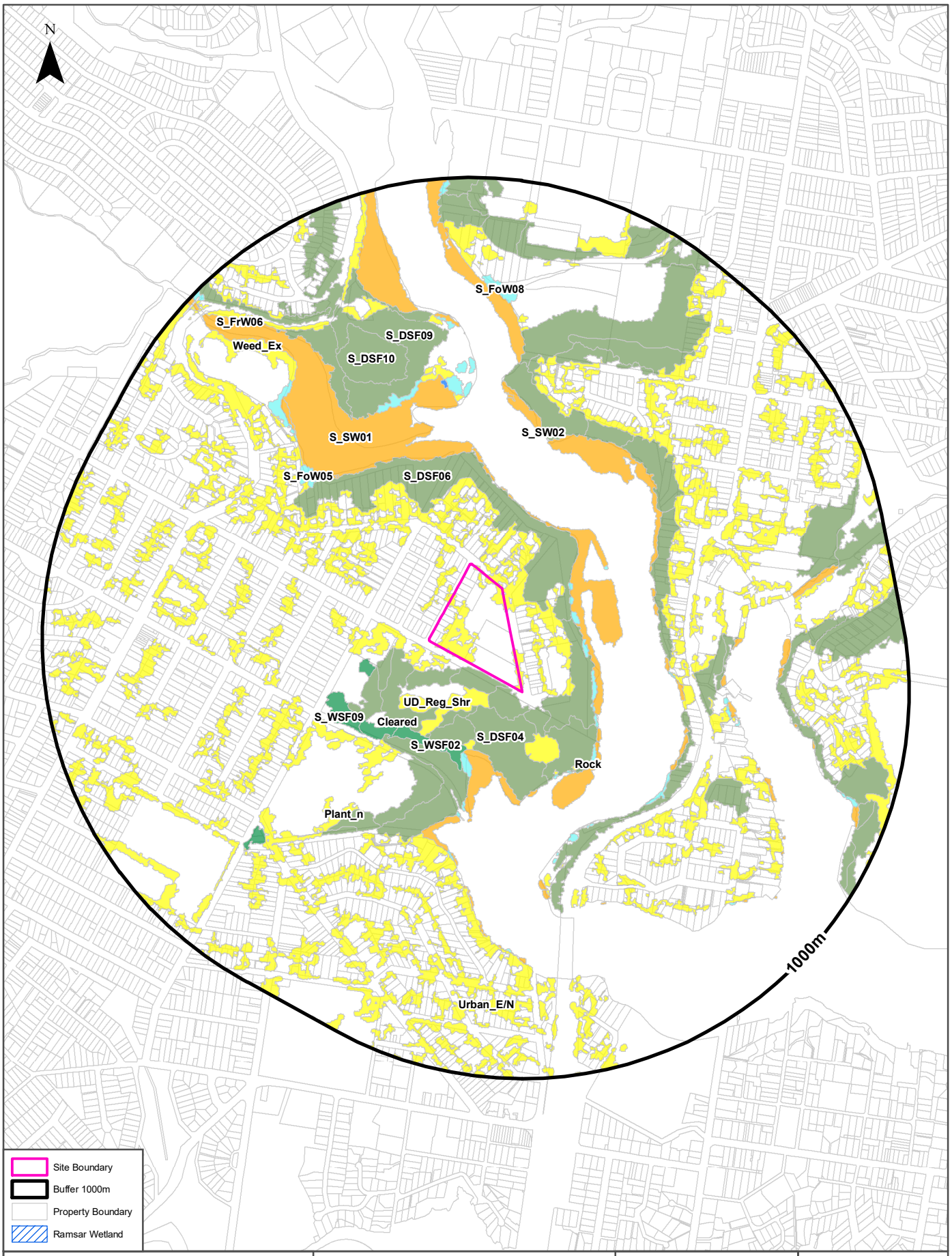
Ecological Constraints - Vegetation & Ramsar Wetlands

120 High Street, Hunters Hill, NSW 2110



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 July 2022

Ecological Constraints

120 High Street, Hunters Hill, NSW 2110

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Dir
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/Native	0m	On-site
S_DSF10	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland			19: Dense heath	20: Previously cleared 1943	3: High	E.haemastoma/C.gummifera/A.littoralisE.piperita/E.sieberi/A.hsipida	5m	South
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			12: Dry xeric shrubs	25: Edge disturbances only	1: Low	A.costata/E.piperita/C.gummifera/S.glomulifera/E.resinifera	7m	South
UD_Reg_Shr	UD_Reg_Shr: Undifferentiated Regenerating Shrubs			00: Not assessed	00: Not assessed	0: Not assessed	Undifferentiated Regenerating Scrubs	46m	South West
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	25: Edge disturbances only	1: Low	E.pilularis/A.costata/C.gummiferaE.resinifera	48m	North
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	3: High	E.piperita/A.costataE.pilularis	48m	South East
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	2: Moderate	E.piperita/A.costataE.pilularis	53m	South East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	15: Regrowth	1: Low	E.piperita/A.costataE.pilularis	56m	South
S_DSF10	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland			15: Grassy natives and exotics	20: Previously cleared 1943	3: High	E.haemastoma/C.gummifera/A.littoralisE.piperita/E.sieberi/A.hsipida	94m	South West
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	110m	South East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	15: Regrowth	2: Moderate	E.piperita/A.costataE.pilularis	116m	South East
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	1: Low	E.pilularis/A.costata/C.gummiferaE.resinifera	130m	South
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest		15: Grassy natives and exotics	20: Previously cleared 1943	3: High	E.paniculata/S.globuliferaE.resinifera/E.punctata	155m	West
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		00: Not assessed	00: Not assessed	0: Not assessed	C.glauca	160m	East
S_SW01	S_SW01: Estuarine Mangrove Forest			00: Not assessed	00: Not assessed	0: Not assessed	Mangroves	162m	East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		18: Swampy sedges, shrubs, ferns and herbs	13: Weeds	1: Low	C.glauca	174m	East
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	13: Weeds	1: Low	E.pilularis/A.costata/C.gummiferaE.resinifera	195m	South
Cleared	Cleared			00: Not assessed	00: Not assessed	0: Not assessed	Cleared	206m	South West
Rock	Rock			00: Not assessed	00: Not assessed	0: Not assessed	Rock	217m	South East

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Dir
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	13: Weeds	3: High	E.pilularis/A.costata/C.gummifera E.resinifera	225m	South West
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	2: Moderate	E.pilularis/A.costata/C.gummifera E.resinifera	226m	South
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest		15: Grassy natives and exotics	20: Previously cleared 1943	2: Moderate	E.paniculata/S.glomuliferaE.resinifera/E.punctata	260m	South West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	13: Weeds	2: Moderate	E.piperita/A.costataE.pilularis	277m	South
S_SW02	S_SW02: Estuarine Saltmarsh	Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh (possible)	00: Not assessed	00: Not assessed	0: Not assessed	S.repens/S.quinqueflora/S.virginicusJ.krausii	377m	North
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			17: Pittosporum dominant	20: Previously cleared 1943	3: High	E.piperita/A.costataE.pilularis	383m	South East
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	20: Previously cleared 1943	2: Moderate	E.piperita/A.costataE.pilularis	409m	South East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		18: Swampy sedges, shrubs, ferns and herbs	20: Previously cleared 1943	3: High	C.glauca	428m	South East
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	23: Plantings	4: Very high	E.piperita/A.costataE.pilularis	436m	North East
S_FoW05	S_FoW05: Riverflat Paperbark Swamp Forest	Swamp Sclerophyll Forest on Coastal Floodplains		11: Semi sheltered dry/mesic	13: Weeds	2: Moderate	M.stypheliodes/M.linariifolia	447m	North West
S_FrW06	S_FrW06: Estuarine Reedland	Swamp Oak Floodplain Forest		00: Not assessed	00: Not assessed	0: Not assessed	P.australis/B.juncea	460m	North
Plant_n	Plant_n: Plantation (native and/or exotic)			00: Not assessed	00: Not assessed	0: Not assessed	Native or Exotic Plantations	460m	South West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	13: Weeds	3: High	E.piperita/A.costataE.pilularis	461m	South West
S_DSF09	S_DSF09: Coastal Sandstone Gully Forest			11: Semi sheltered dry/mesic	14: Canopy gaps	2: Moderate	A.costata/E.piperita/C.gummifera/S.glomulifera/E.resinifera	463m	North
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			35: Casuarina glauca near waters edge	13: Weeds	3: High	E.piperita/A.costataE.pilularis	500m	East
S_DSF10	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland			12: Dry xeric shrubs	99: No visible disturbance	5: No visible disturbance	E.haemastoma/A.littoralis/E.piperita/C.gummifera	508m	North
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	1: Low	E.piperita/A.costataE.pilularis	530m	North East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			24: Urban and hard surface	24: Urban mixed use	4: Very high	E.piperita/A.costataE.pilularis	539m	South East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		31: Saltmarsh	15: Regrowth	3: High	C.glauca	549m	North West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	14: Canopy gaps	2: Moderate	E.piperita/A.costataE.pilularis	564m	North
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			17: Pittosporum dominant	13: Weeds	1: Low	E.racemosa/A.costata/E.punctata/C.gummiferaE.resinifera	628m	North East

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Dir
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			15: Grassy natives and exotics	14: Canopy gaps	3: High	E.piperita/A.costa taE.pilularis	632m	North East
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest		15: Grassy natives and exotics	13: Weeds	2: Moderate	E.paniculata/S.gl omuliferaE.resinif era/E.punctata	649m	South West
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	14: Canopy gaps	3: High	E.piperita/A.costa taE.pilularis	655m	East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	24: Urban mixed use	4: Very high	E.piperita/A.costa taE.pilularis	733m	North West
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	25: Edge disturbances only	1: Low	E.piperita/A.costa taE.pilularis	826m	North West
S_FrW06	S_FrW06: Estuarine Reedland	Swamp Oak Floodplain Forest		33: Weedy shrubs	13: Weeds	3: High	P.australis/B.junc ea	844m	North West
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			24: Urban and hard surface	24: Urban mixed use	4: Very high	E.pilularis/A.cost ata/C.gummifera E.resinifera	855m	East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			20: Weeds and exotics	13: Weeds	3: High	E.piperita/A.costa taE.pilularis	903m	North
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	15: Regrowth	2: Moderate	E.piperita/A.costa taE.pilularis	915m	South East
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	15: Regrowth	3: High	E.piperita/A.costa taE.pilularis	928m	South East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		13: Dry shrubs and grasses	13: Weeds	1: Low	C.glauca	956m	North

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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Ramsar Wetlands

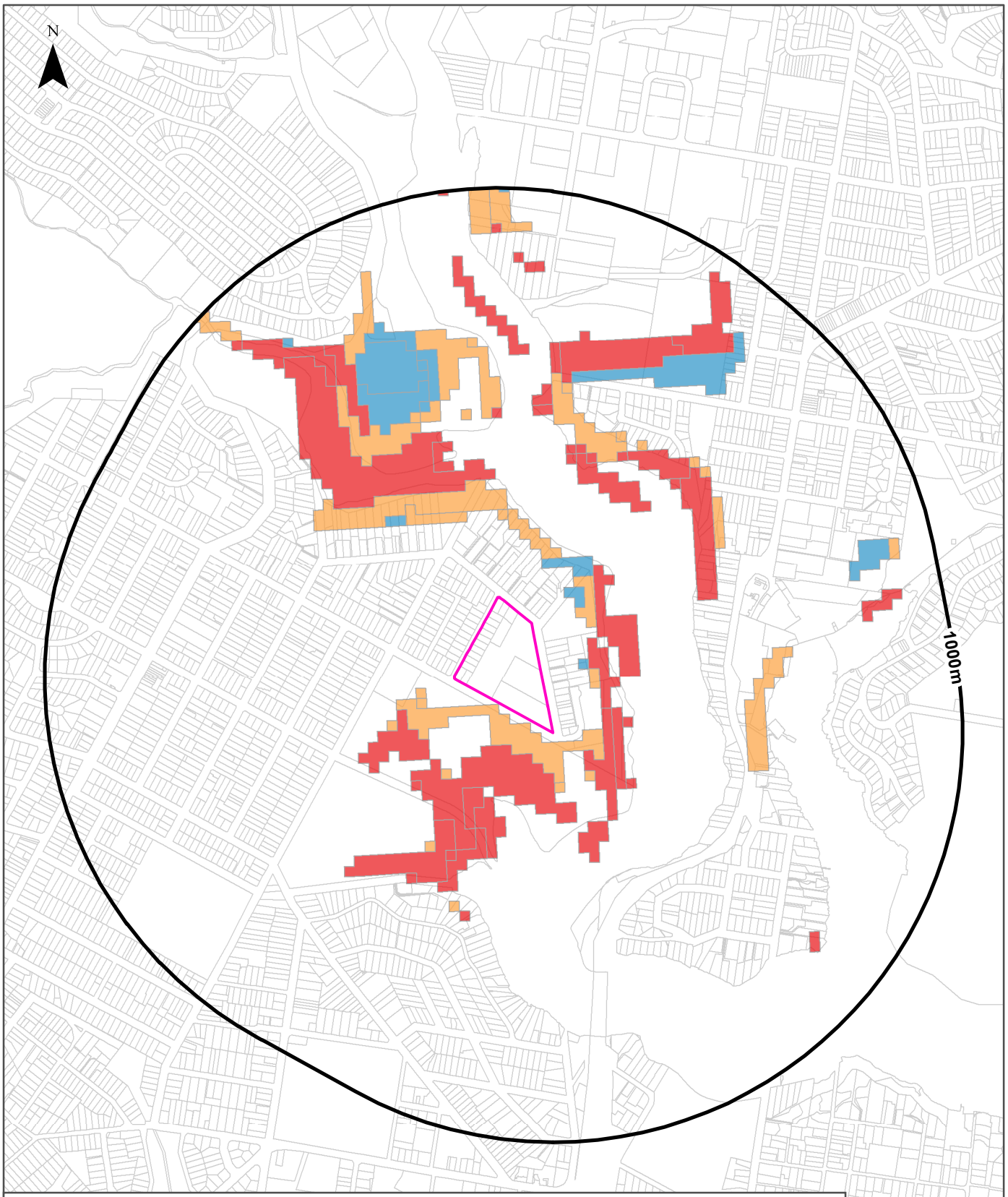
What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

120 High Street, Hunters Hill, NSW 2110



Ecological Constraints

120 High Street, Hunters Hill, NSW 2110

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Moderate potential GDE - from national assessment	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	3m	South
Terrestrial	High potential GDE - from national assessment	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	69m	South
Terrestrial	Low potential GDE - from national assessment	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	90m	East
Terrestrial	High potential GDE - from national assessment	Deeply dissected sandstone plateaus.	Vegetation		149m	East
Terrestrial	Moderate potential GDE - from national assessment	Deeply dissected sandstone plateaus.	Vegetation		423m	North West

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints - Inflow Dependent Ecosystems Likelihood

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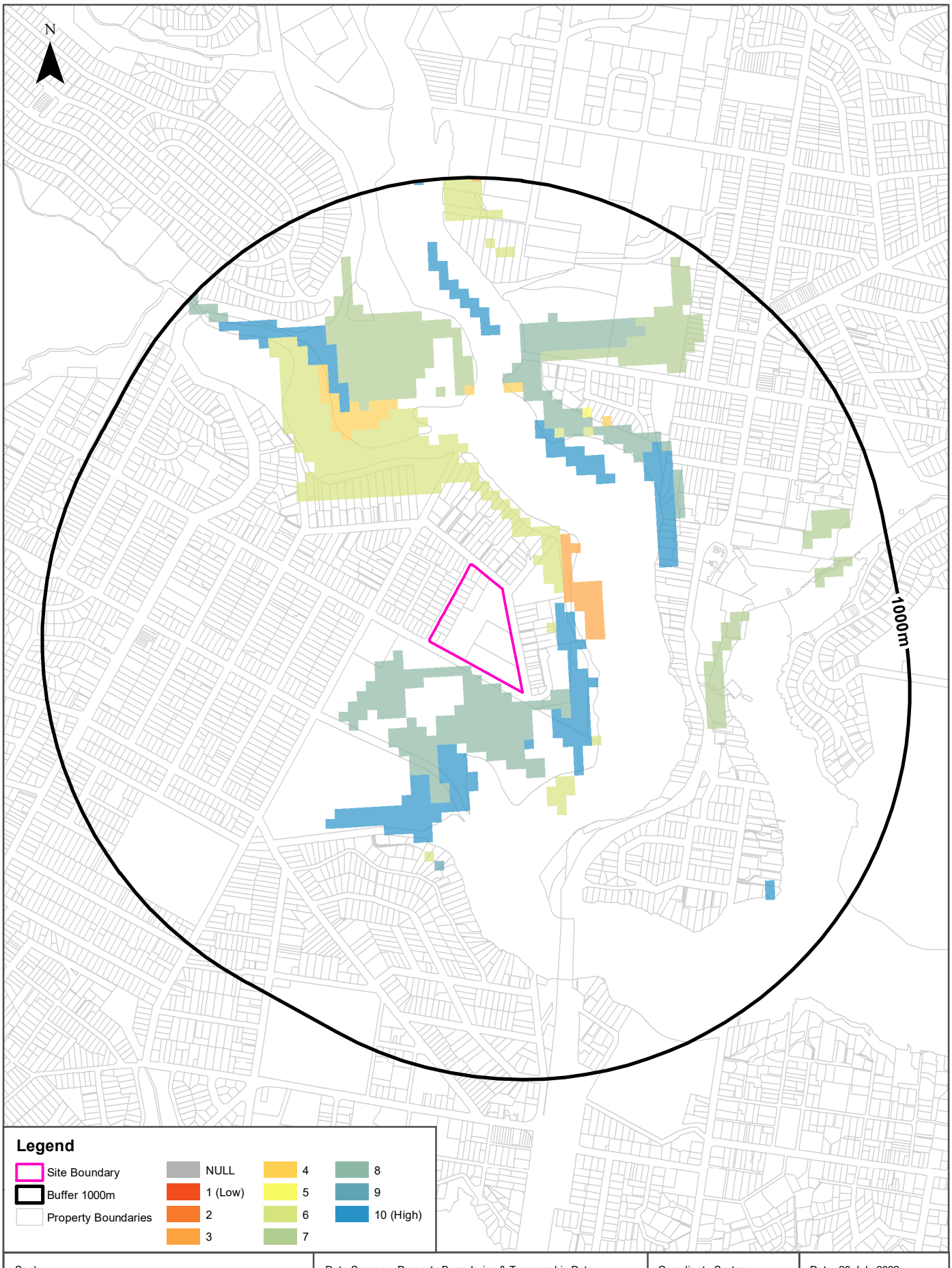

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GDA 1994 MGA Zone 56

Date: 29 July 2022

Ecological Constraints

120 High Street, Hunters Hill, NSW 2110

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	8	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	3m	South
Terrestrial	10	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	84m	South East
Terrestrial	6	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	90m	East
Terrestrial	3	Deeply dissected sandstone plateaus.	Vegetation		149m	East
Terrestrial	6	Deeply dissected sandstone plateaus.	Vegetation		232m	South East
Terrestrial	10	Deeply dissected sandstone plateaus.	Vegetation		335m	North East
Terrestrial	4	Deeply dissected sandstone plateaus.	Vegetation		423m	North West
Terrestrial	7	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	439m	North
Terrestrial	4	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	439m	North
Terrestrial	5	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	475m	North East
Terrestrial	9	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	480m	South
Terrestrial	3	Deeply dissected sandstone plateaus.	Vegetation	Consolidated sedimentary	989m	North

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

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NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris alba	Sanderling	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris tenuirostris	Great Knot	Vulnerable	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Endangered Population, Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Charadrius leschenaultii	Greater Sand-plover	Vulnerable	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Endangered Population, Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Erythrotriorchis radiatus	Red Goshawk	Critically Endangered	Category 2	Vulnerable	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Limicola falcinellus	Broad-billed Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Manorina melanotis	Black-eared Miner	Critically Endangered	Not Sensitive	Endangered	
Animalia	Aves	Menura alberti	Albert's Lyrebird	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Motacilla flava	Yellow Wagtail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Nettapus coromandelianus	Cotton Pygmy-Goose	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Phaethon lepturus	White-tailed Tropicbird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Philomachus pugnax	Ruff	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis anthopeplus monarchoides	Regent Parrot (eastern subspecies)	Endangered	Category 3	Vulnerable	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Sula dactylatra	Masked Booby	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Xenus cinereus	Terek Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Gastropoda	Pommerhelix duralensis	Dural Land Snail	Endangered	Not Sensitive	Endangered	
Animalia	Insecta	Petalura gigantea	Giant Dragonfly	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Perameles nasuta	Long-nosed Bandicoot	Endangered Population	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Reptilia	Myuchelys bellii	Western Sawshelled Turtle, Bell's Turtle	Endangered	Not Sensitive	Vulnerable	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Camarophyllopsis kearneyi		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe anomala var. ianthinomarginata		Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe aurantipes		Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe austropratensis		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe collucera		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe griseoramosa		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe lanecovensis		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe reesiae		Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe rubronivea		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia cluniesrossiae	Kanangra Wattle	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia gordonii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Extinct	Not Sensitive	Extinct	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Darwinia biflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Darwinia peduncularis		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Davidsonia jerseyana	Davidson's Plum	Endangered	Category 2	Endangered	
Plantae	Flora	Deyeuxia appressa		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Dillwynia tenuifolia		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Epacris purpurascens var. purpurascens		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Epacris sparsa	Sparse Heath	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus fracta	Broken Back Ironbark	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus pulverulenta	Silver-leafed Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Grevillea beadleana	Beadle's Grevillea	Endangered	Category 3	Endangered	
Plantae	Flora	Grevillea caleyi	Caley's Grevillea	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Grevillea hilliana	White Yiel Yiel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Haloragodendron lucasii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Hibbertia spanantha	Julian's Hibbertia	Critically Endangered	Category 2	Critically Endangered	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Lasiopetalum joyceae		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Leptospermum deanei		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Microtis angusii	Angus's Onion Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Pomaderris prunifolia	Plum-leaf Pomaderris	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Rhizanthella slateri	Eastern Australian Underground Orchid	Vulnerable	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Sarcochilus hartmannii	Hartman's Sarcochilus	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca glandulosa		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Thelymitra atronitida	Black-hooded Sun Orchid	Critically Endangered	Category 2	Not Listed	
Plantae	Flora	Thesium australe	Austral Toadflax	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Wahlenbergia multicaulis	Tadgell's Bluebell	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Wilsonia backhousei	Narrow-leafed Wilsonia	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Zannichellia palustris		Endangered	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.
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Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

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Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
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As Supplied	Spatial data supplied by provider

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APPENDIX E

LOCAL METEOROLOGY

Monthly Rainfall (millimetres)

CONCORD GOLF CLUB

Station Number: 066013 · State: NSW · Opened: 1930 · Status: Open · Latitude: 33.85°S · Longitude: 151.10°E · Elevation: 15 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1930	49.8	19.3	97.0	79.8	77.7	190.8	58.4	16.5	0.0	47.5	10.7	147.6	795.1
1931	31.5	35.1	134.9	303.3	131.1	27.7	384.3	7.4	150.4	9.4	114.8	101.9	1431.8
1932	0.0	99.6	98.8	67.1	48.3	25.9	70.9	72.1	186.4	39.1	139.2	137.2	984.6
1933	170.4	5.1	83.6	224.0	164.1	37.8	37.8	116.1	85.6	96.3	101.1	87.1	1209.0
1934	78.7	240.0	56.4	154.7	205.5	106.4	254.0	125.5	310.4	48.5	113.3	72.4	1765.8
1935	92.5	142.5	72.9	69.1	55.6	48.3	50.0	2.0	53.1	130.0	51.1	181.1	948.2
1936	129.8	145.3	224.5	75.9	88.6	83.6	17.8	46.0	15.0	23.1	11.9	102.4	963.9
1937	100.3	42.4	255.5	104.9	26.4	423.7	34.5	144.3	10.4	90.4	143.8	59.7	1436.3
1938	199.9	178.3	50.3	54.9	105.2	11.4	95.8	254.0	31.2	131.1	48.5	4.3	1164.9
1939	107.2	4.1	260.5	111.7	79.0	13.2	20.5	70.6	49.4	95.0	53.6	13.4	878.2
1940	21.0	16.3	16.5	169.2	67.1	30.5	91.9	24.6	112.8	50.8	45.2	261.1	907.0
1941	138.5	51.7	27.2	79.1	36.1	46.6	52.3	71.1	70.4	69.0	23.7	33.0	698.7
1942	9.7	32.5	546.1	17.0	40.9	114.6	43.1	18.6	27.5	277.5	169.3	129.8	1426.6
1943	74.2	15.2	26.6	59.4	626.0	23.5	7.6	211.9	178.8	31.5	191.8	70.4	1516.9
1944	54.5	78.5	29.9	71.7	79.9	68.0	149.2	127.6	49.8	18.5	14.5	17.0	759.1
1945	99.9	59.2	32.7	245.0	167.5	302.7	91.9	43.9	2.5	45.3	84.3	66.7	1241.6
1946	13.7	74.8	139.5	418.3	80.5	170.8	0.8	0.0	23.5	60.9	64.3	23.8	1070.9
1947	29.8	218.1	57.0	184.2	87.9	52.2	11.9	23.1	16.2	44.2	146.9	203.5	1075.0
1948	262.1	72.1	130.7	23.6	183.7	172.1	14.0	24.5	68.7	15.5	21.9	94.2	1083.1
1949	376.8	162.8	103.1	38.7	92.4	498.5	67.2	129.0	227.1	38.9	128.8	49.0	1912.3
1950	184.4	208.3	173.9	159.3	201.0	855.6	362.2	73.7	114.9	136.1	139.1	28.2	2636.7
1951	389.5	62.3	137.9	8.7	117.5	382.3	22.9	135.9	107.7	36.3	6.1	17.2	1424.3
1952	61.0	47.8	134.6	365.0	49.0	246.7	289.6	366.0	16.5	124.2	79.8	40.5	1820.7
1953	69.1	187.6	129.6	18.7	489.3	3.8	38.1	43.0	34.0	66.0	40.0	3.6	1122.8
1954	130.2	370.3	25.4	16.5	40.8	13.2	99.7	52.4	74.5	223.7	141.6	106.0	1294.3
1955	188.3	433.9	264.5	75.9	299.6	56.0	10.4	8.2	34.4	64.0	324.8	165.9	1925.9
1956	201.8	656.9	413.5	36.6	122.3	112.6	42.2	68.2	19.0	59.7	4.1	26.3	1763.2
1957	51.3	95.3	54.3	13.5	1.8	14.0	93.6	107.7	2.8	5.1	15.5	37.7	492.6
1958	106.1	232.8	329.1	35.1	8.0	159.1	22.9	64.0	30.1	43.7	11.7	83.9	1126.5
1959	104.8	156.3	103.2	34.3	24.9	85.1	106.5	33.4	49.8	228.2	98.9	31.8	1057.2
1960	44.7	91.1	52.5	19.9	110.3	58.5	104.7	40.5	41.2	200.4	54.9	173.5	992.2
1961	60.5	59.8	44.8	77.7	18.4	42.6	29.0	160.4	30.8	48.1	392.7	88.4	1053.2
1962	132.2	151.8	43.8	48.3	227.4	3.8	59.8	91.1	72.7	19.3	7.9	135.0	993.1
1963	102.1	63.8	307.9	209.5	157.4	179.3	38.6	188.3	31.1	44.8	37.5	277.9	1638.2
1964	12.8	27.0	209.2	140.3	26.8	335.0	8.9	26.2	13.9	80.1	69.4	38.9	988.5
1965	29.3	12.6	11.4	62.6	24.3	163.3	136.6	13.7	64.3	169.3	13.3	31.2	731.9
1966	16.4	100.1	116.0	133.6	42.6	113.8	9.2	55.3	50.6	46.6	110.5	93.0	887.7
1967	144.3	153.3	99.0	39.4	26.1	201.7	14.5	197.5	56.9	70.5	76.3	20.4	1099.9
1968	133.1	13.3	123.9	11.0	91.6	7.1	35.3	22.6	13.5	2.1	16.7	85.8	556.0
1969	33.1	216.2	79.4	188.2	33.0	110.1	25.6	130.4	60.0	61.1	255.0	39.8	1231.9
1970	102.9	42.7	74.8	39.1	12.8	21.1	0.0	28.8	205.5	18.1	152.8	288.4	987.0
1971	104.5	142.8	65.4	68.0	53.2	35.5	16.8	64.3	65.8	1.1	63.5	154.9	835.8
1972	302.8	95.8	214.3	79.1	59.7	68.6	2.4	27.6	14.2	290.4	120.8	26.1	1301.8
1973	113.7	302.1	22.9	100.5	25.7	58.9	103.7	59.8	38.6	162.4	120.8	31.3	1140.4
1974	138.3	93.4	274.8	128.6	180.3	172.7	5.8	91.4	32.2	67.2	56.2	16.0	1256.9
1975	29.0	142.6	245.0	72.8	8.8	241.8	135.8	21.5	31.8	93.3	23.0	17.2	1062.6
1976	231.2	214.0	304.7	28.8	35.6	123.2	155.5	7.4	59.0	194.6	101.4	17.4	1472.8
1977	87.0	159.6	169.0	16.0	120.2	97.6	4.2	17.2	44.4	7.5	19.3	35.5	777.5

Quality control: 12.3 Done & acceptable, *12.3* Not completed or unknown

Australian Government
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Monthly Rainfall (millimetres)

CONCORD GOLF CLUB

Station Number: 066013 · State: NSW · Opened: 1930 · Status: Open · Latitude: 33.85°S · Longitude: 151.10°E · Elevation: 15 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1978	237.0	23.5	328.6	101.6	109.5	327.4	6.7	20.0	82.4	82.7	96.5	66.4	1482.3
1979	84.0	29.4	91.2	17.2	78.9	145.8	16.6	5.0	20.9	30.1	51.0	1.8	571.9
1980	165.2	78.6	55.6	5.9	128.8	52.6	34.2	8.2	2.7	32.9	45.7	41.1	651.5
1981	61.8	188.3	55.6	118.4	92.6	31.6	33.8	8.3	7.3	150.3	125.0	77.8	950.8
1982	55.9	18.5	177.6	7.2	4.6	66.5	51.2	6.3	159.8	43.0	11.0	10.4	612.0
1983	31.3	35.9	238.3	96.4	139.2	74.3	39.8	37.9	42.5	121.2	33.9	87.2	977.9
1984	178.1	80.8	196.1	100.5	97.5	73.7	119.4	12.4	44.6	50.7	252.5	62.7	1269.0
1985	7.3	68.5	58.8	209.0	116.9	101.7	49.9	18.6	44.8	144.6	65.6	64.5	950.2
1986	175.8	64.1	8.7	68.8	18.2	14.7	21.9	415.6	28.4	56.3	139.3	24.9	1036.7
1987	73.9	19.7	166.1	37.4	48.3	63.7	99.0	234.8	10.0	209.7	181.4	57.1	1201.1
1988	218.6	174.8	81.8	536.9	176.3	56.8	184.2	44.7	101.0	1.2	167.2	162.3	1905.8
1989	81.2	78.8	119.0	313.1	117.1	204.7	16.7	71.0	0.4	10.2	35.4	147.0	1194.6
1990	78.1	691.4	170.1	315.8	107.0	23.0	52.6	187.9	112.0	47.0	49.2	20.4	1854.5
1991	73.4	74.2	26.4	21.6	51.6	310.4	65.3	5.8	19.0	9.0	31.6	171.0	859.3
1992	67.2	313.4	38.0	36.0	45.6	84.9	7.5	20.4	12.4	80.0	137.2	137.3	979.9
1993	76.0	74.3	95.0	31.0	17.2	39.4	79.7	38.3	83.1	37.7	78.9	35.3	685.9
1994	8.6	65.7	149.4	128.2	29.5	59.8	11.6	6.2	8.6	22.6	43.8	52.2	586.2
1995	87.0	27.8	194.8	26.0	173.7	68.4	1.6	0.0	210.7	*38.9*	154.3	96.2	*1079.4*
1996	181.5	40.1	42.6	33.4	143.5	70.4	61.7	145.4	82.9	29.2	62.9	50.6	944.2
1997	191.8	127.8	31.8	3.2	81.2	62.8	90.4	9.0	93.8	51.4	28.6	28.4	800.2
1998	99.8	34.8	19.8	240.6	243.4	83.0	72.7	352.0	27.6	49.2	47.8	31.6	1302.3
1999	192.4	202.6	41.4	193.6	36.6	47.0	168.2	72.4	47.2	158.4		97.0	
2000	27.2	7.4	248.2	48.0	31.8	31.4	23.0	20.0	31.4	62.8	149.2	37.4	717.8
2001	170.2		104.0	69.6	223.0	10.6		49.4	16.0	33.0	76.4	43.4	
2002			70.6	31.0	73.0	19.2	10.6	8.2		28.6	29.0	84.6	
2003	10.4	92.0	101.6	233.6	340.6	68.8	44.4	31.2	8.6	68.4	84.0	73.4	1157.0
2004	63.0	103.8	89.8	69.0	9.2	5.4	32.2	70.0		248.0	67.8	62.6	
2005	83.0	109.4		22.6	35.0	85.0	60.6	3.0	52.6	43.0	143.2	28.8	
2006	98.6	80.0	41.6	3.8	14.2	138.6	101.8	75.8	193.6	6.6		65.6	
2007	77.6	127.2		133.8	13.4	436.2	39.6	129.8		45.4	157.8	143.8	
2008	59.8	231.8	56.6	153.8	12.6	95.6	68.6	36.0	96.4	50.8	67.0	70.4	999.4
2009	11.4	135.2	70.6		113.8	68.4	53.4	5.2		124.0	8.4	57.4	
2010	25.6	227.6	59.0	27.2	119.6	104.4	69.6	24.2	53.4	102.0	132.2		
2011	35.8	13.8	168.2	168.0	115.6	94.6	204.0	39.8	80.4	36.2	159.6	113.4	1229.4
2012	129.4	137.4	231.6	189.0	18.8	220.6	32.4	12.6	24.4	28.8	40.2	40.2	1105.4
2013	127.8	147.2	90.6	136.4	56.8	259.0	34.4	11.8	34.8	16.0	162.8	30.2	1107.8
2014	18.0	65.4	111.2	40.2	7.8	33.0		227.8	43.4	98.0	28.2	200.8	
2015	160.0	97.0	49.8	450.2	111.6		43.4	55.2	44.8	48.4	101.2	76.0	
2016	294.8		83.8	40.2	13.8	339.6	97.6	148.4	68.4	16.8	23.8	60.8	
2017	34.0	157.4	339.0	56.8	15.2	164.4	0.8	21.6	0.0	55.8	49.2	55.2	949.4
2018	25.8	143.8	82.0	20.2	13.4	109.0	4.0	7.6	40.2	218.6	131.8	112.8	909.2
2019	59.6	88.2	169.8	20.4	10.2	133.6	40.4	*54.2*	*134.0*	*34.6*	29.6	3.2	*777.8*
2020	*47.4*	*469.2*	133.4	42.8	*86.0*	*55.2*	142.8	63.2	34.4	96.2	44.2	*96.2*	*1311.0*
2021	61.0	*87.2*	*392.0*	24.2	*87.4*	*51.2*	24.6	76.4	37.2	77.4	169.8	*95.0*	*1183.4*
2022	123.6	*319.4*	*552.6*	*193.4*	*139.8*	*5.0*	*368.4*	*37.4*					

Quality control: 12.3 Done & acceptable, *12.3* Not completed or unknown

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Monthly Rainfall (millimetres)

CONCORD GOLF CLUB

Station Number: 066013 · State: NSW · Opened: 1930 · Status: Open · Latitude: 33.85°S · Longitude: 151.10°E · Elevation: 15 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	103.4	128.7	135.2	104.3	94.3	119.6	69.3	71.6	60.4	75.2	88.1	77.4	1128.5
Lowest	0.0	4.1	8.7	3.2	1.8	3.8	0.0	0.0	0.0	1.1	4.1	1.8	492.6
5th percentile	10.9	13.5	24.1	10.0	9.0	9.0	3.2	5.1	2.7	7.1	10.8	11.9	610.7
10th percentile	18.3	19.2	29.9	17.0	13.4	14.1	7.5	7.4	9.6	15.6	14.4	17.2	715.9
Median	83.5	92.7	99.0	69.1	78.9	72.1	43.1	43.0	43.9	50.8	67.4	62.7	1073.0
90th percentile	199.1	233.5	274.8	232.6	183.0	298.3	149.2	182.4	138.9	168.6	163.2	162.3	1650.7
95th percentile	248.3	347.4	334.0	314.3	233.8	358.8	229.0	230.6	191.1	220.9	187.1	190.9	1857.1
Highest	389.5	691.4	552.6	536.9	626.0	855.6	384.3	415.6	310.4	290.4	392.7	288.4	2636.7

Statistics calculated over the period 1961-1990

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	107.4	118.1	138.5	112.4	79.3	107.1	50.3	75.8	51.4	78.5	96.4	74.0	1089.1
Lowest	7.3	12.6	8.7	5.9	4.6	3.8	0.0	5.0	0.4	1.1	7.9	1.8	556.0
5th Percentile	14.4	15.6	16.6	8.9	10.6	10.5	3.2	6.8	4.8	1.6	12.0	12.9	589.9
10th percentile	27.7	19.6	41.7	15.5	17.7	20.5	5.6	8.1	9.7	7.0	16.4	17.1	647.5
Median	94.6	79.8	117.5	78.4	69.3	74.0	34.0	33.3	43.5	53.5	67.5	49.1	1044.9
90th percentile	219.9	214.2	277.8	219.9	159.3	208.4	135.9	189.2	102.1	171.8	188.5	155.6	1497.9
95th percentile	234.4	263.4	306.5	314.6	178.5	288.9	147.0	218.0	138.3	202.9	253.9	225.9	1757.2
Highest	302.8	691.4	328.6	536.9	227.4	335.0	184.2	415.6	205.5	290.4	392.7	288.4	1905.8

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml.

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APPENDIX F

BOREHOLE LOGS

Aargus

BOREHOLE NUMBER BH01

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		Cl	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH01 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH02

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fined grained, dark brown		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH02 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH03

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Clayey Sand, fined grained, dark grey		PID = 3.7 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH03 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH04

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 3.5ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH04 terminated at 0.4m		
			1.0					

BOREHOLE NUMBER BH05

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fined grained, dark brown		PID = 1.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH05 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH06

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fined grained, dark brown		PID = 0.8 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH06 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH07

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Clayey Sand, fined grained, dark grey		PID = 0.8 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH07 terminated at 0.4m		
			1.0					

BOREHOLE ES8561 HUNTERS HILL.GPJ GINT STD AUSTRALIA.GDT 9/21/22

BOREHOLE NUMBER BH08

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 1.2 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			1.0			Borehole BH08 terminated at 0.6m		

BOREHOLE NUMBER BH09

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 2.5 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH09 terminated at 0.4m		
			1.0					

BOREHOLE NUMBER BH10

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 2.2 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			1.0			Borehole BH10 terminated at 0.4m		

BOREHOLE ES8561 HUNTERS HILL.GPJ GINT STD AUSTRALIA.GDT 9/21/22

BOREHOLE NUMBER BH11

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fined grained, dark brown		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH11 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH12

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fined grained, dark brown		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH12 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH13

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 23/8/22 **COMPLETED** 23/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.5 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			1.0			Borehole BH13 terminated at 0.4m		

BOREHOLE NUMBER BH14

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH14 terminated at 0.4m		
			1.0					

BOREHOLE NUMBER BH15

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Clayey Sand, fined grained, dark grey		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH15 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH16

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Clayey Sand, fined grained, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH16 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH17

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Sand, medium to fine grained, dark brown		PID = 1.5 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		PID = 1.5 ppm; No staining; No hydrocarbon odours; No ACM observed
						Borehole BH17 terminated at 0.6m		
			1.0					

BOREHOLE NUMBER BH18

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Clayey Sand, fined grained, dark grey		PID = 0.8 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH18 terminated at 0.4m		
			1.0					

BOREHOLE NUMBER BH19

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.5 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH19 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH20

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH20 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH21

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.0 ppm; No staining; No hydrocarbon odours; No ACM observed
					CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH21 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH22

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.1 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH22 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH23

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.7 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH23 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH24

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH24 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH25

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH25 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH26

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 1.5 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CL	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH26 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH27

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 3 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH27 terminated at 0.5m		
			1.0					

BOREHOLE NUMBER BH28

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.1 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH28 terminated at 0.4m		
			1.0					

BOREHOLE NUMBER BH29

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH29 terminated at 0.7m		
			1.0					

BOREHOLE NUMBER BH30

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.5 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH30 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH31

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.6 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH31 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH32

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH32 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH33

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.6 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH33 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH34

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			1.0			Borehole BH34 terminated at 0.6m		

BOREHOLE NUMBER BH35

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH35 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH36

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH36 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH37

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.4 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH37 terminated at 0.3m		
			1.0					

BOREHOLE NUMBER BH38

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH38 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH39

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.0 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH39 terminated at 0.2m		
			1.0					

BOREHOLE ES8561 HUNTERS HILL.GPJ GINT STD AUSTRALIA.GDT 9/21/22

BOREHOLE NUMBER BH40

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.0 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH40 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH41

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.0 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH41 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH42

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.1 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH42 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH43

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH43 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH44

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH44 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH45

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Clayey Sand, fined grained, dark grey		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					CI	Silty CLAY, medium plasticity, dark brown-yellow		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH45 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH46

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.1 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			1.0			Borehole BH46 terminated at 0.5m		

BOREHOLE NUMBER BH47

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH47 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH48

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH48 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH49

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.3 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH49 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH50

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA						Silty Clay, medium plasticity, dark grey		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
			0.5		SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
						Borehole BH50 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH51

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.2 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH51 terminated at 0.2m		
			1.0					

BOREHOLE NUMBER BH52

Aargus Pty Ltd

CLIENT Montefiore **PROJECT NAME** Detailed Site Investigation

PROJECT NUMBER ES8561 **PROJECT LOCATION** Hunters Hill

DATE STARTED 24/8/22 **COMPLETED** 24/8/22 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR Aargus Pty Ltd **SLOPE** 90° **BEARING** ---

EQUIPMENT Hand auger **HOLE LOCATION** See Figure 5 Borehole locations

HOLE SIZE 50mm **LOGGED BY** SK, DK **CHECKED BY** MK

NOTES Depths to lithogical units and contacts are approximate

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
HA					SC	Silty Sand, medium to fined grained, dark brown		PID = 0.0 ppm; No staining; No hydrocarbon odours; No ACM observed
					SC	Clayey SAND, medium to fine grained, pale brown		No staining; No hydrocarbon odours; No ACM observed
			0.5			Borehole BH52 terminated at 0.2m		
			1.0					

BOREHOLE ES8561 HUNTERS HILL.GPJ GINT STD AUSTRALIA.GDT 9/21/22

APPENDIX G

FIELD RECORD FORMS / CALIBRATION CERTIFICATES

Aargus

Site Inspection
Daily Worksheet Record

Aargus

PROJECT NAME: Detailed Site Investigation	**PROJECT NO:** ES8661
CLIENT: Mr. Robert Orie	**DATE:** 23/08/22
SITE ADDRESS: 120 High Street, Hunters Hill, NSW	
SITE CONTACT:	**PHONE:** 0448 281519
AARGUS REPRESENTATIVE: SK, DK, JJ	
TITLE: Environmental Engineer.	**PHONE:**
FIELD NOTES:	

Start Time 9:30 AM	Finish Time 3:30 PM
Weather Sunny.	Rainfall (mm)
Wind Direction SE → NW	Wind Speed 13 km/hr.
Humidity 43%	
Odours Present None	Staining Present None

Environmental and Safety Concerns

Actions

Machinery onsite —	Equipment onsite —
Site Safety Induction —	Stormwater Control —
Dust Suppression —	Traffic Control —

Site Inspection
Daily Worksheet Record

Aargus

PROJECT NAME: Detailed Site investigation	**PROJECT NO:** ES8561
CLIENT: Mr. Robert Orie	**DATE:** 24/08/22
SITE ADDRESS: 116-120, High St; 2-20 Gaza Av; 45-47 Baron Ge, Hunters Hill, NSW	
SITE CONTACT:	**PHONE:**
AARGUS REPRESENTATIVE: Divyansh Kumar; Sagar Koirala	
TITLE: Environmental Engineer	**PHONE:** 0448281519
FIELD NOTES:	

Start Time 9:00 AM	Finish Time 8:00 PM
Weather Sunny	Rainfall (mm)
Wind Direction SE → NW	Wind Speed 15 km/hr
Humidity 47 %	
Odours Present None	Staining Present None

Environmental and Safety Concerns

Actions

Machinery onsite	Equipment onsite
Site Safety Induction	Stormwater Control
Dust Suppression	Traffic Control

PID Measurements

Aargus

PID Monitor Description.....

Location	PID (ppm)	Location	PID (ppm)	Location	PID (ppm)
BH 1		BH 16	0.4	BH 34	0.4
BH 2		BH 17	1.5	BH 35	0.3
BH 3	3.7	BH 18	0.8	BH 36	0.3
BH 4	3.5	BH 19	0.5	BH 37	0.4
BH 5	1.2	BH 20	0.4	BH 38	0.2
BH 6	0.8	BH 21	0.0	BH 39	0.0
BH 7	0.8	BH 22	0.1	BH 40	0.0
BH 8	1.2	BH 23	0.7	BH 41	0.3
BH 9	2.5	BH 24	0.83	BH 42	0.1
BH 10	2.2	BH 25	0.3	BH 43	0.2
BH 11	0.3	BH 26	1.5	BH 44	0.3
BH 12	0.4	BH 27	3	BH 45	0.2
BH 13	0.5	BH 28	0.1	BH 46	0.1
BH 14	0.4	BH 29	0.4	BH 47	0.3
BH 15	0.3	BH 30	0.5	BH 48	0.2
		BH 31	0.6	BH 49	0.3
		BH 32	0.3	BH 50	0.2
		BH 33	0.6	BH 51	0.2
				BH 52	0.0

CALIBRATION CERTIFICATE

Date of Calibration: - 20th July 2022

Calibrated by: - P Kovacs

Customer: - Air-Met Scientific Pty Ltd

Description: - Tiger^{LT}

Manufacturer: - ION Science Ltd

Type Number: - N/A

Serial Number: - T-119477

Certificate Number: - 261594

Signed: - Kovacs

Service Due date: - July 2023

This instrument has been factory calibrated to fully documented procedures in accordance with our ISO 9001:2015 Quality Management System.
Measurement standards are derived from volumetric and time sources which have been calibrated at an accredited laboratory traceable to National or International standards. The following list indicates the serial numbers of equipment used during the calibration procedure.

BAR02	C9559 / A14353[1]	C9568 / A14744[1]			

[1] Gas mixtures prepared using equipment traceable to N.P.L. standards against Suppliers Certificate No.

The instrument has been calibrated at a temperature of 20.8°C ± 0.25°C and a barometric pressure of 1011.7 mbar ± 2 mbar.

ION Science hereby certify that on the day of calibration the instrument was working according to the manufacturer's original sales specification as checked by the calibration procedure, unless otherwise stated.
Copies of this certificate may only be reproduced in full.
Calibrations are valid as certified only on date of Calibration. For correct instrument operation please see the User Manual.

RESULTS ON DESPATCH

Applied Concentration	Instrument Indication
101.6 ppm Isobutylene	101.5 ppm Isobutylene
4932.4 ppm Isobutylene	4956 ppm Isobutylene

The estimated applied gas uncertainty is ± 2.0%

APPENDIX H

REGULATORY CRITERIA

NEPM 2013 - Schedule B1

Guideline on Investigation & Health or Ecological Screening Level For Soil

Table 1A(1) Health investigation levels for soil contaminants

Chemical	Health-based investigation levels (mg/kg)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial/ industrial[1] D
Metals and Inorganics				
Arsenic[2]	100	500	300	3 000
Beryllium	60	90	90	500
Boron	4500	40 000	20 000	300 000
Cadmium	20	150	90	900
Chromium (VI)	100	500	300	3600
Cobalt	100	600	300	4000
Copper	6000	30 000	17 000	240 000
Lead[3]	300	1200	600	1 500
Manganese	3800	14 000	19 000	60 000
Mercury (inorganic)[5]	40	120	80	730
Methyl mercury[4]	10	30	13	180
Nickel	400	1200	1200	6 000
Selenium	200	1400	700	10 000
Zinc	7400	60 000	30 000	400 000
Cyanide (free)	250	300	240	1 500
Polycyclic Aromatic Hydrocarbons (PAHs)				
Carcinogenic PAHs (as BaP TEQ)[6]	3	4	3	40
Total PAHs[7]	300	400	300	4000
Phenols				
Phenol	3000	45 000	40 000	240 000
Pentachlorophenol	100	130	120	660
Cresols	400	4 700	4 000	25 000
Organochlorine Pesticides				
DDT+DDE+DDD	240	600	400	3600
Aldrin and dieldrin	6	10	10	45
Chlordane	50	90	70	530
Endosulfan	270	400	340	2000
Endrin	10	20	20	100
Heptachlor	6	10	10	50
HCB	10	15	10	80
Methoxychlor	300	500	400	2500
Mirex	10	20	20	100
Toxaphene	20	30	30	160
Herbicides				
2,4,5-T	600	900	800	5000
2,4-D	900	1600	1300	9000

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Chemical	Health-based investigation levels (mg/kg)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial/ industrial[1] D
MCPA	600	900	800	5000
MCPB	600	900	800	5000
Mecoprop	600	900	800	5000
Picloram	4500	6600	5700	35000
Other Pesticides				
Atrazine	320	470	400	2500
Chlorpyrifos	160	340	250	2000
Bifenthrin	600	840	730	4500
Other Organics				
PCBs[8]	1	1	1	7
PBDE Flame Retardants (Br1–Br9)	1	2	2	10

Notes:

(1) Generic land uses are described in detail in Schedule B7 Section 3

HIL A – Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

HIL B – Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

HIL C – Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

HIL D – Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.

(2) Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7).

(3) Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

(4) Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

(5) Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

(6) Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01

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Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

(7) Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet the relevant HSL.

(8) PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

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Table 1A(2) Interim soil vapour health investigation levels for volatile organic chlorinated compounds

Chemical	Interim soil vapour HIL (mg/m^3)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial / Industrial[1] D
TCE	0.02	0.02	0.4	0.08
1,1,1-TCA	60	60	1200	230
PCE	2	2	40	8
cis-1,2-dichloroethene	0.08	0.08	2	0.3
Vinyl chloride	0.03	0.03	0.5	0.1

Notes:

1. Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7, though secondary school buildings should be assessed using residential 'A/B' for vapour intrusion purposes.
2. Interim HILs for VOCCs are conservative soil vapour concentrations that can be adopted for the purpose of screening sites where further investigation is required on a site-specific basis. They are based on the potential for vapour intrusion using an indoor air-to-soil vapour attenuation factor of 0.1 and an outdoor air-to-soil vapour attenuation factor of 0.05.
3. Application of the interim HILs is based on a measurement of shallow (to 1 m depth) soil vapour (or deeper where the values are to be applied to a future building with a basement) or sub-slab soil vapour.
4. The applicability of the interim HILs needs to be further considered when used for other building types such as homes with a crawl-space and no slab, which may require site-specific assessment.
5. Use of the interim HILs requires comparison with data that has been collected using appropriate methods and meets appropriate data quality requirements.
6. Oral and dermal exposure should be considered on a site-specific basis where direct contact exposure is likely to occur.

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Table 1A(3) Soil HSLs for vapour intrusion (mg/kg)

	HSL A & HSL B Low – high density residential				HSL C recreational / open space				HSL D Commercial / Industrial				
CHEMICAL	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4m**	**4 m+**	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m+**	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m+**	**Soil saturation concentration (Csat)**
SAND													
Toluene	160	220	310	540	NL	NL	NL	NL	NL	NL	NL	NL	560
Ethylbenzene	55	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	64
Xylenes	40	60	95	170	NL	NL	NL	NL	230	NL	NL	NL	300
Naphthalene	3	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	9
Benzene	0.5	0.5	0.5	0.5	NL	NL	NL	NL	3	3	3	3	360
F1[9]	45	70	110	200	NL	NL	NL	NL	260	370	630	NL	950
F2[10]	110	240	440	NL	NL	NL	NL	NL	NL	NL	NL	NL	560
SILT													
Toluene	390	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	640
Ethylbenzene	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	69

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	HSL A & HSL B Low – high density residential				HSL C recreational / open space				HSL D Commercial / Industrial				
Xylenes	95	210	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	330
Naphthalene	4	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	10
Benzene	0.6	0.7	1	2	NL	NL	NL	NL	4	4	6	10	440
F1[9]	40	65	100	190	NL	NL	NL	NL	250	360	590	NL	910
F2[10]	230	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	570
CLAY													
Toluene	480	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	630
Ethylbenzene	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	68
Xylenes	110	310	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	330
Naphthalene	5	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	10
Benzene	0.7	1	2	3	NL	NL	NL	NL	4	6	9	20	430
F1[9]	50	90	150	290	NL	NL	NL	NL	310	480	NL	NL	850
F2[10]	280	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	560

Notes:

(1) Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7. HSLs for vapour intrusion for high density residential assume residential occupation of the ground floor. If communal car parks or commercial properties occupy the ground floor, HSL D should be used,

(2) The key limitations of the HSLs should be referred to prior to application and are presented in Friebel and Nadebaum (2011b and 2011d).

(3) Detailed assumptions in the derivation of the HSLs and information on how to apply the HSLs are presented in Friebel and Nadebaum (2011a and 2011b).

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(4) Soil HSLs for vapour inhalation incorporate an adjustment factor of 10 applied to the vapour phase partitioning to reflect the differences observed between theoretical estimates of soil vapour partitioning and field measurements. Refer Friebel & Nadebaum (2011a) for further information.

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

(6) The HSLs for TPH C_6-C_{10} in sandy soil are based on a finite source that depletes in less than seven years, and therefore consideration has been given to use of sub-chronic toxicity values. The >C_8-C_{10} aliphatic toxicity has been adjusted to represent sub-chronic exposure, resulting in higher HSLs than if based on chronic toxicity. For further information refer to Section 8.2 and Appendix J in Friebel and Nadebaum (2011a).

(7) The figures in the above table may be multiplied by a factor to account for biodegradation of vapour. A factor of 10 may apply for source depths from 2 m to <4 m or a factor of 100 for source depths of 4 m and deeper. To apply the attenuation factor for vapour degradation, a number of conditions must be satisfied. Firstly the maximum length of the shorter side of the concrete slab and surrounding pavement cannot exceed 15 m, as this would prevent oxygen penetrating to the centre of the slab. Secondly, measurement of oxygen in the subsurface is required to determine the potential for biodegradation. Oxygen must be confirmed to be present at >5% to use these factors.

(8) For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit>50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out.

(9) To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.

(10) To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.

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Table 1A(4) Groundwater HSLs for vapour intrusion (mg/L)

	HSL A & HSL B Low – high density residential			HSL C recreational / open space			HSL D Commercial / industrial			
CHEMICAL	**2 m to <4 m**	**4 m to <8 m**	**8 m+**	**2 m to <4 m**	**4 m to <8 m**	**8 m+**	**2 m to <4 m**	**4 m to <8 m**	**8 m+**	**Solubility limit**
SAND										
Toluene	NL	NL	NL	NL	NL	NL	NL	NL	NL	61
Ethylbenzene	NL	NL	NL	NL	NL	NL	NL	NL	NL	3.9
Xylenes	NL	NL	NL	NL	NL	NL	NL	NL	NL	21
Naphthalene	NL	NL	NL	NL	NL	NL	NL	NL	NL	0.17
Benzene	0.8	0.8	0.9	NL	NL	NL	5	5	5	59
F1[7]	1	1	1	NL	NL	NL	6	6	7	9.0
F2[8]	1	1	1	NL	NL	NL	NL	NL	NL	3.0
SILT										
Toluene	NL	NL	NL	NL	NL	NL	NL	NL	NL	61
Ethylbenzene	NL	NL	NL	NL	NL	NL	NL	NL	NL	3.9
Xylenes	NL	NL	NL	NL	NL	NL	NL	NL	NL	21
Naphthalene	NL	NL	NL	NL	NL	NL	NL	NL	NL	0.17

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	HSL A & HSL B Low – high density residential			HSL C recreational / open space			HSL D Commercial / industrial			
Benzene	4	5	5	NL	NL	NL	30	30	30	59
F1[7]	6	6	6	NL	NL	NL	NL	NL	NL	9.0
F2[8]	NL	NL	NL	NL	NL	NL	NL	NL	NL	3.0
CLAY										
Toluene	NL	NL	NL	NL	NL	NL	NL	NL	NL	61
Ethylbenzene	NL	NL	NL	NL	NL	NL	NL	NL	NL	3.9
Xylenes	NL	NL	NL	NL	NL	NL	NL	NL	NL	21
Naphthalene	NL	NL	NL	NL	NL	NL	NL	NL	NL	0.17
Benzene	5	5	5	NL	NL	NL	30	30	35	59
F1[7]	NL	NL	NL	NL	NL	NL	NL	NL	NL	9.0
F2[8]	NL	NL	NL	NL	NL	NL	NL	NL	NL	3.0

Notes:

(1) Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7. HSLs for vapour intrusion for high density residential assume residential occupation of the ground floor. If communal car parks or commercial properties occupy the ground floor, HSL D should be used,

(2) The key limitations of the HSLs are presented in Friebel and Nadebaum (2011d) and should be referred to prior to application.

(3) Detailed assumptions in the derivation of the HSLs and information on the application of the HSLs are presented in Friebel and Nadebaum (2011a and 2011b).

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

(5) The figures in the above table may be multiplied by a factor to account for biodegradation of vapour. A factor of 10 may apply for source depths from 2 m to <4 m or a factor of 100 for source depths of 4 m and deeper. To apply the attenuation factor for vapour degradation, a number of conditions must be satisfied. Firstly, the maximum length of the shorter side of the concrete slab

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and surrounding pavement cannot exceed 15 m, as this would prevent oxygen penetrating to the centre of the slab. Secondly, measurement of oxygen in the subsurface is required to determine the potential for biodegradation. Oxygen must be confirmed to be present at >5% to use these factors.

(6) For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out.

(7) To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.

(8) To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.

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Table 1A(5) Soil vapour HSLs for vapour intrusion (mg/m³)

	HSL A & HSL B Low – high density residential					HSL C recreational / open space					HSL D Commercial / Industrial				
CHEMICAL	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m to <8 m**	**8 m+**	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m to <8 m**	**8 m+**	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m to <8 m**	**8 m+**
SAND															
Toluene	1300	3800	7300	15 000	29 000	NL	NL	NL	NL	NL	4800	16 000	39 000	84 000	NL
Ethylbenzene	330	1100	2200	4300	8700	NL	NL	NL	NL	NL	1300	4600	11 000	25 000	53 000
Xylenes	220	750	1500	3000	6100	NL	NL	NL	NL	NL	840	3,200	8000	18 000	37 000
Naphthalene	0.8	3	6	10	25	410	NL	NL	NL	NL	3	15	35	75	150
Benzene	1	3	6	10	20	360	2400	4700	9500	19 000	4	10	30	65	130
F1[8]	180	640	1,300	2600	5300	86 000	NL	NL	NL	NL	680	2800	7000	15 000	32 000
F2[9]	130	560	1200	2400	4800	NL	NL	NL	NL	NL	500	2400	NL	NL	NL
SILT															
Toluene	1400	14 000	32 000	69 000	140 000	NL	NL	NL	NL	NL	5700	63 000	NL	NL	NL
Ethylbenzene	380	4200	9700	21 000	43 000	NL	NL	NL	NL	NL	1500	19 000	54 000	NL	NL
Xylenes	260	2900	6800	15 000	30 000	NL	NL	NL	NL	NL	1000	13 000	38 000	NL	NL
Naphthalene	0.9	10	25	60	120	NL	NL	NL	NL	NL	4	50	150	350	750
Benzene	1	10	25	55	110	1800	12 000	24 000	48 000	97 000	4	50	140	320	670

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	HSL A & HSL B Low – high density residential					HSL C recreational / open space					HSL D Commercial / Industrial				
F1[8]	210	2600	6000	13 000	26 000	NL	NL	NL	NL	NL	850	11 000	33 000	77 000	160 000
F2[9]	160	2300	5400	NL	NL	NL	NL	NL	NL	NL	670	NL	NL	NL	NL
CLAY															
Toluene	1600	23 000	53 000	110 000	NL	NL	NL	NL	NL	NL	6500	100 000	NL	NL	NL
Ethylbenzene	420	6800	16 000	35 000	NL	NL	NL	NL	NL	NL	1800	31 000	NL	NL	NL
Xylenes	280	4800	11 000	24 000	50 000	NL	NL	NL	NL	NL	1200	21 000	NL	NL	NL
Naphthalene	1	20	45	95	200	NL	NL	NL	NL	NL	4	85	240	560	1200
Benzene	1	15	40	90	180	3000	20 000	40 000	81 000	160 000	5	80	230	530	1100
F1[8]	230	4200	9900	21 000	44 000	NL	NL	NL	NL	NL	1000	19 000	55 000	130 000	270 000
F2[9]	180	3,800	NL	NL	NL	NL	NL	NL	NL	NL	800	NL	NL	NL	NL

1. Land use settings are equivalent to those described in Table 1A(1) Footnote 1 and Schedule B7. HSLs for vapour intrusion for high density residential assume residential occupation of the ground floor. If communal car parks or commercial properties occupy the ground floor, HSL D should be used,
2. The key limitations of the HSLs should be referred to prior to application and are presented in Friebel and Nadebaum (2011b and 2011d).
3. Detailed assumptions in the derivation of the HSLs and information on how to apply the HSLs are presented in Friebel and Nadebaum (2011a and 2011b).
4. The maximum possible soil vapour concentrations have been calculated based on vapour pressures of the pure chemicals. Where soil vapour HSLs exceed these values a soil-specific source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.
5. Soil vapour HSLs should be compared with measurements taken as laterally close as possible to the soil or groundwater sources of vapour (i.e. within or above vapour sources). Consideration is required of where the sample is taken, the current condition of the site and the likely future condition of the site. Shallow gas measurements in open space (less than 1 m below ground surface) may be subject to influences of weather conditions and moisture.
6. The figures in the above table may be multiplied by a factor to account for biodegradation of vapour. A factor of 10 may apply for source depths from 2 m to <4 m or a factor of 100 for source depths of 4 m and deeper. To apply the attenuation factor for vapour degradation, a number of conditions must be satisfied. Firstly, the maximum length of the shorter side of the concrete slab and surrounding pavement cannot exceed 15 m, as this would prevent oxygen penetrating to the centre of the slab. Secondly, measurement of oxygen in the subsurface is required to determine the potential for biodegradation. Oxygen must be confirmed to be present at >5% to use these factors.

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7. For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out.
8. To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
9. To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.

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Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil

Zn added contaminant limits (ACL, mg added contaminant/kg)						
Areas of ecological significance						
***pH*[a]**	***CEC*[b] *(cmol$_c$/kg)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	15	20	20	20	20	20
4.5	20	25	25	25	25	25
5.0	30	40	40	40	40	40
5.5	40	60	60	60	60	60
6.0	50	90	90	90	90	90
6.5	50	90	130	130	130	130
7.0	50	90	150	190	190	190
7.5	50	90	150	210	260	280
Urban residential/public open space[1]						
***pH*[a]**	***CEC*[b] *(cmol$_c$/kg)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	70	85	85	85	85	85
4.5	100	120	120	120	120	120
5.0	130	180	180	180	180	180
5.5	180	270	270	270	270	270
6.0	230	400	400	400	400	400
6.5	230	400	590	590	590	590
7.0	230	400	700	880	880	880
7.5	230	400	700	960	1200	1300
Commercial/industrial						
***pH*[a]**	***CEC*[b] *(cmol$_c$/kg)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	110	130	130	130	130	130
4.5	150	190	190	190	190	190
5.0	210	290	290	290	290	290
5.5	280	420	420	420	420	420
6.0	360	620	620	620	620	620
6.5	360	620	920	920	920	920
7.0	360	620	1100	1400	1400	1400
7.5	360	620	1100	1500	1900	2000

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

a = pH measured using the $CaCl_2$ method (Rayment & Higginson 1992).

b = CEC measured using the silver thiourea method (Chabra et al. 1972).

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Table 1B(2) Soil-specific added contaminant limits for aged copper in soils

Cu added contaminant limits (ACL, mg added contaminant/kg)					
Areas of ecological significance					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
30	65	70	70	75	80
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
20	45	65	90	190	270
Urban residential/public open space[1]					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
95	190	210	220	220	230
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
60	130	190	280	560	800
Commercial/industrial					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
140	280	300	320	330	340
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
85	190	280	400	830	1200

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. The lower of the CEC or the pH-based ACLs for the land use and soil conditions is the ACL to be used.
3. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
4. The EIL is calculated from summing the ACL and the ABC.

a = CEC measured using the silver thiourea method (Chabra et al. 1972).

b = pH measured using the $CaCl_2$ method (Rayment & Higginson 1992).

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Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil

CHEMICAL	Clay content (% clay)	Added contaminant limits (mg added contaminant/kg) for various land uses		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
Chromium III	*1*	60	190	310
	2.5	80	250	420
	5	100	320	530
	≥10	130	400	660
Nickel	CEC[a] ($cmol_c/kg$)	Areas of ecological significance	Urban residential and public open space[1]	Commercial and industrial
	5	5	30	55
	10	30	170	290
	20	45	270	460
	30	60	350	600
	40	70	420	730
	60	95	560	960

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

a = CEC measured using the silver thiourea method (Chabra et al. 1972).

Table 1B(4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties

	Pb added contaminant limit (ACL, mg added contaminant/kg) for various land uses		
CHEMICAL	Areas of ecological significance	Urban residential and public open space[1]	Commercial and industrial
Lead	470	1100	1800

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to lead contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

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Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties

	Ecological Investigation Levels (mg total contaminant/kg)		
CHEMICAL	Areas of ecological significance	Urban residential and public open space[1]	Commercial and industrial
Arsenic[2]	40	100	160
DDT[3]	3	180	640
Naphthalene[3]	10	170	370

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.
4. Insufficient data was available to calculate ACLs for As, DDT and naphthalene. The EIL should be taken directly from Table 1B(5).

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Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil

CHEMICAL	Soil texture	ESLs (mg/kg dry soil)		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
F1 C_6-C_{10}	*Coarse/ Fine*	125*	180*	215*
F2 >C_{10}-C_{16}		25*	120*	170*
F3 >C_{16}-C_{34}	*Coarse*	-	300	1700
	Fine	-	1300	2500
F4 >C_{34}-C_{40}	*Coarse*	-	2800	3300
	Fine	-	5600	6600
Benzene	*Coarse*	8	50	75
	Fine	8	65	95
Toluene	*Coarse*	10	85	135
	Fine	65	105	135
Ethylbenzene	*Coarse*	1.5	70	165
	Fine	40	125	185
Xylenes	*Coarse*	10	105	180
	Fine	1.6	45	95
Benzo(a)pyrene	*Coarse*	0.7	0.7	1.4
	Fine	0.7	0.7	1.4

Notes:

(1) ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.

(2) '-' indicates that insufficient data was available to derive a value.

(3) To obtain F1, subtract the sum of BTEX concentrations from C_6-C_{10} fraction.

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Table 1 B(7) Management Limits for TPH fractions F1–F4 in soil

TPH fraction	Soil texture	Management Limits[1] (mg/kg dry soil)	
		Residential, parkland and public open space	Commercial and industrial
F1[2] C_6- C_{10}	*Coarse*	700	700
	Fine	800	800
F2[2] >C_{10}-C_{16}	*Coarse*	1000	1000
	Fine	1000	1000
F3 >C_{16}-C_{34}	*Coarse*	2500	3500
	Fine	3500	5000
F4 >C_{34}-C_{40}	*Coarse*	10 000	10 000
	Fine	10 000	10 000

[1] Management limits are applied after consideration of relevant ESLs and HSLs

[2] Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

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Table 4

SOIL HEALTH SCREENING LEVELS FOR DIRECT CONTACT (mg/kg)[a,b]

Chemical	HSL-A Residential (Low Density)	HSL-B Residential (High **Density**)	HSL-C Recreational Open Space	HSL-D Commercial / Industrial
Toluene	14,000	21,000	18,000	99,000
Ethylbenzene	4,500	5,900	5,300	27,000
Xylenes	12,000	17,000	15,000	81,000
Naphthalene	1,400	2,200	1,900	11,000
Benzene	100	140	120	430
C6-C10	4,400	5,600	5,100	26,000
>C10-C16	3,300	4,200	3,800	20,000
>C16-C34	4,500	5,800	5,300	27,000
>C34-C40	6,300	8,100	7,400	38,000

Note:

(a) Derived assumptions used in the derivation of the HSLs and information on how to apply the HSLs are presented in:

- Frebel E & Nadebaum P 2011. Health screening levels for petroleum hydrocarbons in soil and groundwater Part 1: Technical development document, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment, Adelaide, Australia
- Frebel E & Nadebaum P 2011. Health screening levels for petroleum hydrocarbons in soil and groundwater Part 2: Application document, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment, Adelaide, Australia

(b) The key limitations in the development of the HSLs should be referred to prior to application. These are presented in the text of the summary document and the HSL application checklist in Appendix A of the Application Document (Frebel & Nadebaum 2011 – Part 2)

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Table 7: Health screening levels for asbestos contamination in soil

Form of Asbestos	Health Screening Level (w/w)			
	Residential A[1]	Residential B[2]	**Recreational C[3]**	Commercial/ Industrial D[4]
Bonded ACM	0.01%	0.04%	**0.02%**	0.05%
FA & AF (friable asbestos & fines)	**0.001%**			
All forms of asbestos	**No visible asbestos for surface soil**			

Notes:

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
3. Residential C includes public open space such as parks, playgrounds, playing fields (e.g. Ovals), secondary schools and unpaved footpaths.
4. Commercial/Industrial D includes premises such as shops, offices, factories and industrial sites.

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PFAS - Environmental Guideline Values

Source: PFAS National Environmental Management Plan Version 2.0 – January 2020

PFAS ENVIRONMENTAL GUIDELINE VALUES

1. Human Health Guideline Values

The national methodologies used by health agencies in deriving the values in Table 1 include a level of conservatism in the drinking water and recreational water health-based guideline values. The methods assume only a minor portion (10%) of the TDI is allocated to this source. Therefore, 90% of intake is attributed to other exposure pathways, which means that exceeding these values does not constitute a risk if other pathways are controlled.

The recreational water quality values have been updated from the values published in the NEMP 1.0 and are based on revised numbers derived by NHMRC (2019). The revised numbers are based on changes in the assumption for the frequency and likelihood of exposure during recreational activities.

Table 1. Human health guideline values developed by health regulators

Sum of PFOS and PFHxS	PFOA	Description	Comments and source
0.02 µg/kg$_{bw}$/day	0.16 µg/kg$_{bw}$/day	Tolerable daily intake (TDI)	FSANZ 2017
0.07 µg/L	0.56 µg/L	Drinking water quality guideline value	Australian Government Department of Health 2019
2 µg/L	10 µg/L	Recreational water quality guideline value*	NHMRC 2019

Notes: bw = body weight, µg = micrograms.

Where the guideline values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.

*NHMRC (2019) notes that people's use of recreational water is not the same, given Australia's climate and geography. Some recreational water resources may be used less frequently than the assumed guidelines (150 days/year), and (in rare cases) some may be used more frequently. In such cases more locally-appropriate event frequency based recreational guidelines can be considered in consultation with the state and regulatory health regulator.

Source: PFAS National Environmental Management Plan Version 2.0 – January 2020

1.1 Human health investigation levels for soil

Table 2. Human health investigation levels for soil

Sum of PFOS and PFHxS	PFOA	Land use	Comments and source
0.01 mg/kg	0.1 mg/kg	Residential with garden/accessible soil (HIL A)	Assumes home-grown produce provides up to 10% of fruit and vegetable intake (does not account for consumption of any eggs from home poultry, nor of milk or meat from stock on the premises). Also includes children's day care centres, preschools and primary schools. The HILs were derived using the methodology consistent with assumptions set out in the ASC NEPM for HIL A. Note: If home-grown produce provides more than the 10% of fruit and vegetable intake assumed in the ASC NEPM generic example, a site-specific risk assessment is required. As an example, if home grown produce provides up to 50% of fruit and vegetable intake, the screening value would be 0.002 mg/kg for the sum of PFOS and PFHxS, and 0.02 mg/kg for PFOA.
2 mg/kg	20 mg/kg	Residential with minimal opportunities for soil access (HIL B)	Assumes no potential use of soil for consumption of home-grown produce. Includes dwellings with fully and permanently paved yard space such as high rise-buildings and flats. These were derived using the methodology consistent with assumptions set out in the ASC NEPM for HIL B.
1 mg/kg	10 mg/kg	Public open space (HIL C)	Relevant for public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools (except for soil used for agricultural studies) and footpaths. Excludes undeveloped public open space (such as urban bushland and reserves), which should be subject to a site-specific assessment where appropriate. These were derived using the methodology consistent with assumptions set out in the ASC NEPM for HIL C.
20 mg/kg	50 mg/kg	Industrial/ commercial (HIL D)	Assumes 8 hours is spent indoors and 1 hour spent outdoors at a site such as a shop, office, factory or industrial site. If the typical exposure for a site is predominantly outdoors with significant earthen areas, recalculation of a site-specific value is recommended. These were derived using the methodology consistent with assumptions set out in the ASC NEPM for HIL D. Note: the industrial/commercial direct exposure criterion for PFOA (including its salts and related compounds) has been set as 50 mg/kg in anticipation of the Stockholm Convention low content limit of 50 mg/kg.
Note: Where the guideline values refer to the sum of PFOS and PFHxS, this includes PFOS only, PFHxS only, and the sum of the two.			

Source: PFAS National Environmental Management Plan Version 2.0 – January 2020

2. Ecological guideline values

The ecological guideline values are used to assess and investigate potential risks to aquatic and terrestrial ecosystems.

2.1 Ecological soil guidelines values

Table 3. Ecological guideline values for soil

Exposure scenario	PFOS	PFOA	Land use	Comments and source
Ecological direct exposure	1 mg/kg	10 mg/kg	All land uses	Future work may be undertaken to review available soil guideline values proposed by Australian research and industry organisations The human health screening value for public open space is used as an interim value (see Table 2 above).
Ecological indirect exposure	0.01 mg/kg		All land uses	The guideline value is based on dietary exposure of a secondary consumer as the most sensitive exposure pathway assessed. This value may not be protective of specific animals relevant to Australia, including predatory animals such as quolls, antechinus and reptiles. For intensively developed sites with no secondary consumers and minimal potential for indirect ecological exposure, a higher criterion of up to 0.14 mg/kg may be appropriate as outlined in the accompanying text in section 8.2.1.

Source: PFAS National Environmental Management Plan Version 2.0 – January 2020

2.2 Ecological water quality guideline values

Table 5 Ecological water quality guideline values developed by water regulators

Exposure scenario	PFOS	PFOA	Exposure scenario	Comments and source
Freshwater	0.00023 µg/L	19 µg/L	99% species protection - high conservation value systems	Australian and New Zealand Guidelines for Fresh and Marine Water Quality - technical draft default guideline values for PFOS and PFOA. Note 1: The 99% species protection level for PFOS is close to the level of detection. Agencies may wish to apply a 'detect' threshold in such circumstances rather than a quantified measurement. Note 2: The draft guidelines do not account for effects which result from the biomagnification of toxicants in air-breathing animals or in animals which prey on aquatic organisms. Note 3: The WQGs advise that the 99% level of protection be used for slightly to moderately disturbed systems. This approach is generally adopted for chemicals that bioaccumulate and biomagnify in wildlife. Regulators may specify or environmental legislation may prescribe the level of species protection required, rather than allowing for case-by-case assessments.
	0.13 µg/L	220 µg/L	95% species protection - slightly to moderately disturbed systems	
	2 µg/L	632 µg/L	90% species protection - highly disturbed systems	
	31 µg/L	1824 µg/L	80% species protection - highly disturbed systems	
Interim marine	0.00023 µg/L	19 µg/L	99% species protection - high conservation value systems	As above. Freshwater values are to be used on an interim basis until final marine guideline values can be set using the nationally-agreed process under the Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Note 1: The WQG advise that in the case of estuaries, the most stringent of freshwater and marine criteria apply, taking account of any available salinity correction. Note 2: Marine guideline values developed by CRC CARE are under consideration through the nationally-agreed water quality guideline development process.
	0.13 µg/L	220 µg/L	95% species protection - slightly to moderately disturbed systems	
	2 µg/L	632 µg/L	90% species protection - highly disturbed systems	
	31 µg/L	1824 µg/L	80% species protection - highly disturbed systems	

Source: PFAS National Environmental Management Plan Version 2.0 – January 2020

NEPM 2013 - Schedule B1

Guideline - Groundwater Investigation Levels

Table 1C Groundwater Investigation Levels (GILs)

Substance		Groundwater Investigation Levels		
		Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
		(µg/L)	(µg/L)	(mg/L)
Metals and Metalloids				
Aluminium, Al pH>6.5		55	-	-
Antimony		-	-	0.003
Arsenic		24 as As(III) 13 as As(V)	-	0.01
Barium		-	-	2
Beryllium		-	-	0.06
Boron		370[C]	-	4
Cadmium	H	0.2	0.7[D]	0.002
Chromium, Cr (III)	H	-	27	-
Chromium, Cr (VI)		1[C]	4.4	0.05
Cobalt		-	1	-
Copper	H	1.4	1.3	2
Iron, (Total)		-	-	-
Lead	H	3.4	4.4	0.01
Manganese		1900[C]	-	0.5
Mercury (Total)		0.06[D]	0.1[D]	0.001
Molybdenum		-	-	0.05
Nickel	H	11	7	0.02
Selenium (Total)		5[D]	-	0.01
Silver		0.05	1.4	0.1
Tributyl tin (as Sn)		-	0.006[C]	-
Tributyl tin oxide		-	-	0.001
Uranium		-	-	0.017
Vanadium		-	100	-
Zinc	H	8[C]	15[C]	-
Non-metallic Inorganics				
Ammonia[E] (as NH_3-N at pH 8)		900[C]	910	-
Bromate		-	-	0.02
Chloride		-	-	-
Cyanide (as un-ionised Cn)		7	4	0.08
Fluoride		-	-	1.5

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Hydrogen sulphide (un-ionised H_2S measured as S)	1	-	-
Iodide	-	-	0.5
Nitrate (as NO_3)	refer to guideline	refer to guideline	50
Nitrite (as NO_2)	refer to guideline	refer to guideline	3
Nitrogen	refer to guideline	refer to guideline	-
Phosphorus	refer to guideline	refer to guideline	-
Sulphate (as SO_4)	-	-	500
Organic alchohols/other organics			
Ethanol	1400	-	-
Ethylenediamine tetra-acetic acid (EDTA)	-	-	0.25
Formaldehyde	-	-	0.5
Nitrilotriacetic acid	-	-	0.2
Anilines			
Aniline	8	-	-
2,4-Dichloroaniline	7	-	-
3,4-Dichloroaniline	3	150	-
Chlorinated Alkanes			
Dichloromethane	-	-	0.004
Trihalomethanes (total)	-	-	0.25
Tetrachloromethane (carbon tetrachloride)	-	-	0.003
1,2-Dichloroethane	-	-	0.003
1,1,2-Trichloroethane	6500	1900	-
Hexachloroethane	290[D]	-	-
Chlorinated Alkenes			
Chloroethene (vinyl chloride)	-	-	0.0003
1,1-Dichloroethene	-	-	0.03
1,2-Dichoroethene	-	-	0.06
Tetrachloroethene (PCE) (Perchloroethene)	-	-	0.05

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Chlorinated Benzenes			
Chlorobenzene	-	-	0.3
1,2- Dichlorobenzene	160	-	1.5
1,3- Dichlorobenzene	260	-	-
1,4- Dichlorobenzene	60	-	0.04
1,2,3- Trichlorobenzene	3[D]	-	0.03 for individual or total trichlorobenzenes
1,2,4- Trichlorobenzene	85[D]	20[D]	
1,3,5-Trichlorobenzene	-	-	
Polychlorinated Biphenyls (PCBs)			
Aroclor 1242	0.3[D]	-	-
Aroclor 1254	0.01[D]	-	-
Other Chlorinated Compounds			
Epichlorohydrin	-	-	0.1
Hexachlorobutadiene	-	-	0.0007
Monochloramine	-	-	3
Monocyclic Aromatic Hydrocarbons			
Benzene	950	500[C]	0.001
Toluene	-	-	0.8
Ethylbenzene	-	-	0.3
Xylenes	350 (as o-xylene) 200 (as p-xylene)	-	0.6
Styrene (Vinyl benzene)	-	-	0.03
Polycyclic Aromatic Hydrocarbons (PAHs)			
Naphthalene	16	50[C]	-
Benzo[a]pyrene	-	-	0.00001
Phenols			
Phenol	320	400	-
2-Chlorophenol	340[C]	-	0.3
4-Chlorophenol	220	-	-
2,4-Dichlorophenol	120	-	0.2
2,4,6-Trichlorophenol	3[D]	-	0.02
2,3,4,6-Tetrachlorophenol	10[D]	-	-
Pentachlorophenol	3.6[D]	11[D]	0.01

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
2,4-Dinitrophenol	45	-	-
Phthalates			
Dimethylphthalate	3700	-	-
Diethylphthalate	1000	-	-
Dibutylphthalate	10[D]	-	-
Di(2-ethylhexyl) phthalate	-	-	0.01
Pesticides			
Acephate	-	-	0.008
Aldicarb	-	-	0.004
Aldrin plus Dieldrin	-	-	0.0003
Ametryn	-	-	0.07
Amitraz	-	-	0.009
Amitrole	-	-	0.0009
Asulam	-	-	0.07
Atrazine	13	-	0.02
Azinphos-methyl	-	-	0.03
Benomyl	-	-	0.09
Bentazone	-	-	0.4
Bioresmethrin	-	-	0.1
Bromacil	-	-	0.4
Bromoxynil	-	-	0.01
Captan	-	-	0.4
Carbaryl	-	-	0.03
Carbendazim (Thiophanate-methyl)	-	-	0.09
Carbofuran	0.06	-	0.01
Carboxin	-	-	0.3
Carfentrazone-ethyl	-	-	0.1
Chlorantraniliprole	-	-	6
Chlordane	0.03[D]	-	0.002
Chlorfenvinphos	-	-	0.002
Chlorothalonil	-	-	0.05
Chlorpyrifos	0.01[D]	0.009[D]	0.01
Chlorsulfuron	-	-	0.2
Clopyralid	-	-	2

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Cyfluthrin, Beta-cyfluthrin	-	-	0.05
Cypermethrin isomers	-	-	0.2
Cyprodinil	-	-	0.09
1,3-Dichloropropene	-	-	0.1
2,2-DPA	-	-	0.5
2,4-D [2,4-dichlorophenoxy acetic acid]	280	-	0.03
DDT	0.006[D]	-	0.009
Deltramethrin	-	-	0.04
Diazinon	0.01	-	0.004
Dicamba	-	-	0.1
Dichloroprop	-	-	0.1
Dichlorvos	-	-	0.005
Dicofol	-	-	0.004
Diclofop-methyl	-	-	0.005
Dieldrin plus Aldrin	-	-	0.0003
Diflubenzuron	-	-	0.07
Dimethoate	0.15	-	0.007
Diquat	1.4	-	0.007
Disulfoton	-	-	0.004
Diuron	-	-	0.02
Endosulfan	0.03[D]	0.005[D]	0.02
Endothal	-	-	0.1
Endrin	0.01[D]	0.004[D]	-
EPTC	-	-	0.3
Esfenvalerate	-	-	0.03
Ethion	-	-	0.004
Ethoprophos	-	-	0.001
Etridiazole	-	-	0.1
Fenamiphos	-	-	0.0005
Fenarimol	-	-	0.04
Fenitrothion	0.2	-	0.007
Fenthion	-	-	0.007
Fenvalerate	-	-	0.06
Fipronil	-	-	0.0007

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Flamprop-methyl	-	-	0.004
Fluometuron	-	-	0.07
Flupropanate	-	-	0.009
Glyphosate	370	-	1
Haloxyfop	-	-	0.001
Heptachlor	0.01[D]	-	-
Heptachlor epoxide	-	-	0.0003
Hexazinone	-	-	0.4
Imazapyr	-	-	9
Iprodione	-	-	0.1
Lindane (γ-HCH)	0.2	-	0.01
Malathion	0.05	-	0.07
Mancozeb (as ETU, ethylene thiourea)	-	-	0.009
MCPA	-	-	0.04
Metaldehyde	-	-	0.02
Metham (as methylisothiocyanate, MITC)	-	-	0.001
Methidathion	-	-	0.006
Methiocarb	-	-	0.007
Methomyl	3.5		0.02
Methyl bromide	-	-	0.001
Metiram (as ETU, ethylene thiourea)	-	-	0.009
Metolachlor/s–Metolachlor	-	-	0.30
Metribuzin	-	-	0.07
Metsulfuron-methyl	-	-	0.04
Mevinphos	-	-	0.006
Molinate	3.4	-	0.004
Napropamide	-	-	0.4
Nicarbazin	-	-	1
Norflurazon	-	-	0.05
Omethoate	-	-	0.001
Oryzalin	-	-	0.4
Oxamyl	-	-	0.007

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Paraquat	-	-	0.02
Parathion	0.004[C]	-	0.02
Parathion methyl	-	-	0.0007
Pebulate	-	-	0.03
Pendimethalin	-	-	0.4
Pentachlorophenol	-	-	0.01
Permethrin	-	-	0.2
Picloram	-	-	0.30
Piperonyl butoxide	-	-	0.6
Pirimicarb	-	-	0.007
Pirimiphos methyl	-	-	0.09
Polihexanide	-	-	0.7
Profenofos	-	-	0.0003
Propachlor	-	-	0.07
Propanil	-	-	0.7
Propargite	-	-	0.007
Proparzine	-	-	0.05
Propiconazole	-	-	0.1
Propyzamide	-	-	0.07
Pyrasulfatole	-	-	0.04
Pyrazophos	-	-	0.02
Pyroxsulam	-	-	4
Quintozene	-	-	0.03
Simazine	3.2	-	0.02
Spirotetramat	-	-	0.2
Sulprofos	-	-	0.01
2,4,5-T	36	-	0.1
Tebuthiuron	2.2	-	-
Temephos	-	0.05[D]	0.4
Terbacil	-	-	0.2
Terbufos	-	-	0.0009
Terbuthylazine	-	-	0.01
Terbutryn	-	-	0.4
Thiobencarb	2.8	-	0.04
Thiometon	-	-	0.004

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Substance	Groundwater Investigation Levels		
	Fresh Waters[A]	Marine Waters[A]	Drinking Water[B]
	(µg/L)	(µg/L)	(mg/L)
Thiram	0.01	-	0.007
Toltrazuril	-	-	0.004
Toxafene	0.1 [D]	-	-
Triadimefon	-	-	0.09
Trichlorfon	-	-	0.007
Triclopyr	-	-	0.02
Trifluralin	2.6[D]	-	0.09
Vernolate	-	-	0.04
Surfactants			
Linear alkylbenzene sulfonates (LAS)	280	-	-
Alcohol ethoxylated sulfate (AES)	650	-	-
Alcohol ethoxylated surfactants (AE)	140	-	-

A Investigation levels apply to typical slightly-moderately disturbed systems. See ANZECC & ARMCANZ (2000) for guidance on applying these levels to different ecosystem conditions.

B Investigation levels are taken from the health values of the Australian Drinking Water Guidelines (NHMRC 2011).

C Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

D Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.

E For changes in GIL with pH refer to ANZECC & ARMCANZ (2000) for further guidance.

H Values have been calculated using a hardness of 30 mg/L $CaCO_3$ refer to ANZECC & ARMCANZ (2000) for further guidance on recalculating for site-specific hardness.

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US EPA Regional Screening Level Summary Table

November 2021

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information														Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				3.0E-04	O					1	0.1		Acephate	30560-19-1	1.9E+01	n	2.5E+02	n					6.0E+00	n		1.3E-03	n		
		2.2E-06	I			9.0E-03	I	V		1		1.1E+05	Acetaldehyde	75-07-0	1.1E+01	c**	4.9E+01	c**	1.3E+00	c**	5.6E+00	c**	2.6E+00	c**		5.2E-04	c**		
				2.0E-02	I					1	0.1		Acetochlor	34256-82-1	1.3E+03	n	1.6E+04	n					3.5E+02	n		2.8E-01	n		
				9.0E-01	I			V		1		1.1E+05	Acetone	67-64-1	7.0E+04	n	1.1E+06	nms					1.8E+04	n		3.7E+00	n		
						2.0E-03	X			1	0.1		Acetone Cyanohydrin	75-86-5	2.8E+06	nm	1.2E+07	nm	2.1E+00	n	8.8E+00	n							
						6.0E-02	I	V		1		1.3E+05	Acetonitrile	75-05-8	8.1E+02	n	3.4E+03	n	6.3E+01	n	2.6E+02	n	1.3E+02	n		2.6E-02	n		
				1.0E-01	I			V		1		2.5E+03	Acetophenone	98-86-2	7.8E+03	ns	1.2E+05	nms					1.9E+03	n		5.8E-01	n		
3.8E+00	C	1.3E-03	C							1	0.1		Acetylaminofluorene, 2-	53-96-3	1.4E-01	c	6.0E-01	c	2.2E-03	c	9.4E-03	c	1.6E-02	c		7.5E-05	c		
				5.0E-04	I	2.0E-05	I	V		1		2.3E+04	Acrolein	107-02-8	1.4E-01	n	6.0E-01	n	2.1E-02	n	8.8E-02	n	4.2E-02	n		8.4E-06	n		
5.0E-01	I	1.0E-04	I	2.0E-03	I	6.0E-03	I		M	1	0.1		Acrylamide	79-06-1	2.4E-01	c	4.6E+00	c	1.0E-02	c	1.2E-01	c	5.0E-02	c		1.1E-05	c		
				5.0E-01	I	2.0E-04	P	V		1		1.1E+05	Acrylic Acid	79-10-7	2.0E+01	n	8.3E+01	n	2.1E-01	n	8.8E-01	n	4.2E-01	n		8.5E-05	n		
5.4E-01	I	6.8E-05	I	1.0E-02	A	2.0E-03	I	V		1		1.1E+04	Acrylonitrile	107-13-1	2.5E-01	c*	1.1E+00	c*	4.1E-02	c*	1.8E-01	c*	5.2E-02	c*		1.1E-05	c*		
						6.0E-03	P			1	0.1		Adiponitrile	111-69-3	8.5E+06	nm	3.6E+07	nm	6.3E+00	n	2.6E+01	n							
5.6E-02	C			1.0E-02	I					1	0.1		Alachlor	15972-60-8	9.7E+00	c*	4.1E+01	c					1.1E+00	c	2.0E+00	8.7E-04	c	1.6E-03	
				1.0E-03	I					1	0.1		Aldicarb	116-06-3	6.3E+01	n	8.2E+02	n					2.0E+01	n	3.0E+00	4.9E-03	n	7.5E-04	
				1.0E-03	I					1	0.1		Aldicarb Sulfone	1646-88-4	6.3E+01	n	8.2E+02	n					2.0E+01	n	2.0E+00	4.4E-03	n	4.4E-04	
										1	0.1		Aldicarb sulfoxide	1646-87-3											4.0E+00			8.8E-04	
1.7E+01	I	4.9E-03	I	3.0E-05	I			V		1			Aldrin	309-00-2	3.9E-02	c*	1.8E-01	c	5.7E-04	c	2.5E-03	c	9.2E-04	c		1.5E-04	c		
				4.0E-03	P	1.0E-04	X	V		1		1.1E+05	Allyl Alcohol	107-18-6	3.5E+00	n	1.5E+01	n	1.0E-01	n	4.4E-01	n	2.1E-01	n		4.2E-05	n		
2.1E-02	C	6.0E-06	C			1.0E-03	I	V		1		1.4E+03	Allyl Chloride	107-05-1	7.2E-01	c**	3.2E+00	c**	4.7E-01	c**	2.0E+00	c**	7.3E-01	c**		2.3E-04	c**		
				1.0E+00	P	5.0E-03	P			1			Aluminum	7429-90-5	7.7E+04	n	1.1E+06	nm	5.2E+00	n	2.2E+01	n	2.0E+04	n		3.0E+04	n		
				4.0E-04	I					1			Aluminum Phosphide	20859-73-8	3.1E+01	n	4.7E+02	n					8.0E+00	n					
				9.0E-03	I					1	0.1		Ametryn	834-12-8	5.7E+02	n	7.4E+03	n					1.5E+02	n		1.6E-01	n		
2.1E+01	C	6.0E-03	C							1	0.1		Aminobiphenyl, 4-	92-67-1	2.6E-02	c	1.1E-01	c	4.7E-04	c	2.0E-03	c	3.0E-03	c		1.5E-05	c		
				8.0E-02	P					1	0.1		Aminophenol, m-	591-27-5	5.1E+03	n	6.6E+04	n					1.6E+03	n		6.1E-01	n		
				4.0E-03	X					1	0.1		Aminophenol, o-	95-55-6	2.5E+02	n	3.3E+03	n					7.9E+01	n		3.0E-02	n		
				2.0E-02	P					1	0.1		Aminophenol, p-	123-30-8	1.3E+03	n	1.6E+04	n					4.0E+02	n		1.5E-01	n		
				2.5E-03	I					1	0.1		Amitraz	33089-61-1	1.6E+02	n	2.1E+03	n					8.2E+00	n		4.2E+00	n		
						5.0E-01	I	V		1			Ammonia	7664-41-7					5.2E+02	n	2.2E+03	n							
				2.0E-03	X					1	0.1		Ammonium Picrate	131-74-8	1.3E+02	n	1.6E+03	n					4.0E+01	n		1.9E-01	n		
				2.0E-01	I					1			Ammonium Sulfamate	7773-06-0	1.6E+04	n	2.3E+05	nm					4.0E+03	n					
						3.0E-03	X	V		1		1.4E+04	Amyl Alcohol, tert-	75-85-4	8.2E+01	n	3.4E+02	n	3.1E+00	n	1.3E+01	n	6.3E+00	n		1.3E-03	n		
5.7E-03	I	1.6E-06	C	7.0E-03	P	1.0E-03	I			1	0.1		Aniline	62-53-3	9.5E+01	c**	4.0E+02	c*	1.0E+00	n	4.4E+00	n	1.3E+01	c*		4.6E-03	c*		
4.0E-02	P			2.0E-03	X					1	0.1		Anthraquinone, 9,10-	84-65-1	1.4E+01	c**	5.7E+01	c*					1.4E+00	c*		1.4E-02	c*		
				4.0E-04	I	3.0E-04	A			0.15			Antimony (metallic)	7440-36-0	3.1E+01	n	4.7E+02	n	3.1E-01	n	1.3E+00	n	7.8E+00	n	6.0E+00	3.5E-01	n	2.7E-01	
				5.0E-04	H					0.15			Antimony Pentoxide	1314-60-9	3.9E+01	n	5.8E+02	n					9.7E+00	n					
				4.0E-04	H					0.15			Antimony Tetroxide	1332-81-6	3.1E+01	n	4.7E+02	n					7.8E+00	n					
						2.0E-04	I			0.15			Antimony Trioxide	1309-64-4	2.8E+05	nm	1.2E+06	nm	2.1E-01	n	8.8E-01	n							
1.5E+00	I	4.3E-03	I	3.0E-04	I	1.5E-05	C			1	0.03		Arsenic, Inorganic	7440-38-2	6.8E-01	c*R	3.0E+00	cR	6.5E-04	c*	2.9E-03	c*	5.2E-02	c	1.0E+01	1.5E-03	c	2.9E-01	
				3.5E-06	C	5.0E-05	I			1			Arsine	7784-42-1	2.7E-01	n	4.1E+00	n	5.2E-02	n	2.2E-01	n	7.0E-02	n					
										1			Asbestos (units in fibers)	1332-21-4											7.0E+06(G)				
				3.6E-02	O					1	0.1		Asulam	3337-71-1	2.3E+03	n	3.0E+04	n					7.2E+02	n		1.8E-01	n		
2.3E-01	C			3.0E-03	A					1	0.1		Atrazine	1912-24-9	2.4E+00	c*	1.0E+01	c					3.0E-01	c	3.0E+00	2.0E-04	c	1.9E-03	
8.8E-01	C	2.5E-04	C							1	0.1		Auramine	492-80-8	6.2E-01	c	2.6E+00	c	1.1E-02	c	4.9E-02	c	7.8E-02	c		7.1E-04	c		
				4.0E-04	I					1	0.1		Avermectin B1	65195-55-3	2.5E+01	n	3.3E+02	n					8.0E+00	n		1.4E+01	n		
				3.0E-03	A	1.0E-02	A			1	0.1		Azinphos-methyl	86-50-0	1.9E+02	n	2.5E+03	n	1.0E+01	n	4.4E+01	n	5.6E+01	n		1.7E-02	n		
1.1E-01	I	3.1E-05	I					V		1			Azobenzene	103-33-3	5.6E+00	c	2.6E+01	c	9.1E-02	c	4.0E-01	c	1.2E-01	c		9.3E-04	c		
				1.0E+00	P	7.0E-06	P			1	0.1		Azodicarbonamide	123-77-3	8.6E+03	n	4.0E+04	n	7.3E-03	n	3.1E-02	n	2.0E+04	n		6.8E+00	n		
				2.0E-01	I	5.0E-04	H			0.07			Barium	7440-39-3	1.5E+04	n	2.2E+05	nm	5.2E-01	n	2.2E+00	n	3.8E+03	n	2.0E+03	1.6E+02	n	8.2E+01	
				5.0E-03	O			V		1			Benfluralin	1861-40-1	3.9E+02	n	5.8E+03	n					2.8E+01	n		9.4E-01	n		
				5.0E-02	I					1	0.1		Benomyl	17804-35-2	3.2E+03	n	4.1E+04	n					9.7E+02	n		8.5E-01	n		
				2.0E-01	I					1	0.1		Bensulfuron-methyl	83055-99-6	1.3E+04	n	1.6E+05	nm					3.9E+03	n		1.0E+00	n		
				3.0E-02	I					1	0.1		Bentazon	25057-89-0	1.9E+03	n	2.5E+04	n					5.7E+02	n		1.2E-01	n		
4.0E-03	P			1.0E-01	I			V		1		1.2E+03	Benzaldehyde	100-52-7	1.7E+02	c*	8.2E+02	c					1.9E+01	c		4.1E-03	c		
5.5E-02	I	7.8E-06	I	4.0E-03	I	3.0E-02	I	V		1		1.8E+03	Benzene	71-43-2	1.2E+00	c*	5.1E+00	c*	3.6E-01	c*	1.6E+00	c*	4.6E-01	c*	5.0E+00	2.3E-04	c*	2.6E-03	
1.0E-01	X			3.0E-04	X					1	0.1		Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	5.4E+00	c**	2.3E+01	c*					7.8E-01	c**		2.2E-04	c**		
				1.0E-03	P			V		1		1.3E+03	Benzenethiol	108-98-5	7.8E+01	n	1.2E+03	n					1.7E+01	n		1.1E-02	n		
2.3E+02	I	6.7E-02	I	3.0E-03	I				M	1	0.1		Benzidine	92-87-5	5.3E-04	c	1.0E-02	c	1.5E-05	c	1.8E-04	c	1.1E-04	c		2.8E-07	c		
				9.0E-05	X	2.0E-06	X			1	0.1		Benzo(e)pyrene	192-97-2	5.7E+00	n	7.3E+01	n	2.1E-03	n	8.8E-03	n	1.8E+00	n		2.2E+00	n		
				4.0E+00	I					1	0.1		Benzoic Acid	65-85-0	2.5E+05	nm	3.3E+06	nm					7.5E+04	n		1.5E+01	n		
1.3E+01	I							V		1		3.2E+02	Benzotrichloride	98-07-7	5.3E-02	c	2.5E-01	c					3.0E-03	c		6.6E-06	c		
				1.0E-01	P					1	0.1		Benzyl Alcohol	100-51-6	6.3E+03	n	8.2E+04	n					2.0E+03	n		4.8E-01	n		
1.7E-01	I	4.9E-05	C	2.0E-03	P	1.0E-03	P	V		1		1.5E+03	Benzyl Chloride	100-44-7	1.1E+00	c*	4.8E+00	c*	5.7E-02	c*	2.5E-01	c*	8.9E-02	c*		9.8E-05	c*		
		2.4E-03	I	2.0E-03	I	2.0E-05	I			0.007			Beryllium and compounds	7440-41-7	1.6E+02	n	2.3E+03	n	1.2E-03	c*	5.1E-03	c*	2.5E+01	n	4.0E+00	1.9E+01	n	3.2E+00	
				9.0E-03	P					1	0.1		Bifenox	42576-02-3	5.7E+02	n	7.4E+03	n					1.0E+02	n		7.6E-01	n		
				1.5E-02	I					1	0.1		Biphenthrin	82657-04-3	9.5E+02	n	1.2E+04	n					3.0E+02	n		1.4E+03	n		
8.0E-03	I			5.0E-01	I	4.0E-04	X	V		1			Biphenyl, 1,1'-	92-52-4	4.7E+01	n	2.0E+02	n	4.2E-01	n	1.8E+00	n	8.3E-01	n		8.7E-03	n		
				4.0E-02	I			V		1		1.0E+03	Bis(2-chloro-1-methylethyl) ether	108-60-1	3.1E+03	ns	4.7E+04	ns					7.1E+02	n		2.6E-01	n		
				3.0E-03	P					1	0.1		Bis(2-chloroethoxy)methane	111-91-1	1.9E+02	n	2.5E+03	n					5.9E+01	n		1.3E-02	n		
1.1E+00	I	3.3E-04	I					V		1		5.1E+03	Bis(2-chloroethyl)ether	111-44-4	2.3E-01	c	1.0E+00	c	8.5E-03	c	3.7E-02	c	1.4E-02	c		3.6E-06	c		
2.2E+02	I	6.2E-02	I					V		1		4.2E+03	Bis(chloromethyl)ether	542-88-1	8.3E-05	c	3.6E-04	c	4.5E-05	c	2.0E-04	c	7.2E-05	c		1.7E-08	c		
				5.0E-02	I					1	0.1		Bisphenol A	80-05-7	3.2E+03	n	4.1E+04	n					7.7E+02	n		5.8E+01	n		
				2.0E-01	I	2.0E-02	H			1			Boron And Borates Only	7440-42-8	1.6E+04	n	2.3E+05	nm	2.1E+01	n	8.8E+01	n	4.0E+03	n		1.3E+01	n		
				2.0E+00	P	2.0E-02	P	V		1			Boron Trichloride	10294-34-5	1.6E+05	nm	2.3E+06	nm	2.1E+01	n	8.8E+01	n	4.2E+01	n					
				4.0E-02	C	1.3E-02	C	V		1			Boron Trifluoride	7637-07-2	3.1E+03	n	4.7E+04	n	1.4E+01	n	5.7E+01	n	2.6E+01	n					
7.0E-01	I			4.0E-03	I					1			Bromate	15541-45-4	9.9E-01	c	4.7E+00	c					1.1E-01	c	1.0E+01	8.5E-04	c	7.7E-02	
				1.0E-04	X	6.0E-05	X	V		1		2.4E+03	Bromo-2-chloroethane, 1-	107-04-0	3.5E-01	n	1.5E+00	n	6.3E-02	n	2.6E-01	n	1.2E-01	n		3.3E-05	n		

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels													Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				3.0E-04	X			V		1		9.0E+02	Bromo-3-fluorobenzene, 1-	1073-06-9	2.3E+01	n	3.5E+02	ns					4.9E+00	n		4.7E-03	n	
				3.0E-04	X			V		1		3.2E+02	Bromo-4-fluorobenzene, 1-	460-00-4	2.3E+01	n	3.5E+02	ns					4.6E+00	n		4.4E-03	n	
										1	0.1		Bromoacetic acid	79-08-3											6.0E+01(G)			1.2E-02
				8.0E-03	I	6.0E-02	I	V		1		6.8E+02	Bromobenzene	108-86-1	2.9E+02	n	1.8E+03	ns	6.3E+01	n	2.6E+02	n	6.2E+01	n		4.2E-02	n	
						4.0E-02	X	V		1		4.0E+03	Bromochloromethane	74-97-5	1.5E+02	n	6.3E+02	n	4.2E+01	n	1.8E+02	n	8.3E+01	n		2.1E-02	n	
6.2E-02	I	3.7E-05	C	8.0E-03	P			V		1		9.3E+02	Bromodichloromethane	75-27-4	2.9E-01	c	1.3E+00	c	7.6E-02	c	3.3E-01	c	1.3E-01	c	8.0E+01(G)	3.6E-05	c	2.2E-02
7.9E-03	I	1.1E-06	I	2.0E-02	I			V		1		9.2E+02	Bromoform	75-25-2	1.9E+01	c*	8.6E+01	c	2.6E+00	c	1.1E+01	c	3.3E+00	c	8.0E+01(G)	8.7E-04	c	2.1E-02
				1.4E-03	I	5.0E-03	I	V		1		3.6E+03	Bromomethane	74-83-9	6.8E+00	n	3.0E+01	n	5.2E+00	n	2.2E+01	n	7.5E+00	n		1.9E-03	n	
				5.0E-03	H			V		1			Bromophos	2104-96-3	3.9E+02	n	5.8E+03	n					3.5E+01	n		1.5E-01	n	
						1.0E-01	A	V		1		9.7E+02	Bromopropane, 1-	106-94-5	2.2E+02	n	9.4E+02	n	1.0E+02	n	4.4E+02	n	2.1E+02	n		6.4E-02	n	
1.0E-01	O			1.5E-02	O					1	0.1		Bromoxynil	1689-84-5	5.3E+00	c	2.2E+01	c					6.1E-01	c		5.2E-04	c	
1.0E-01	O			1.5E-02	O			V		1			Bromoxynil Octanoate	1689-99-2	6.7E+00	c	3.2E+01	c					2.4E-01	c		2.1E-03	c	
6.0E-01	C	3.0E-05	I			2.0E-03	I	V		1		6.7E+02	Butadiene, 1,3-	106-99-0	7.6E-02	c*	3.3E-01	c*	9.4E-02	c*	4.1E-01	c*	7.1E-02	c*		3.9E-05	c*	
				1.0E-01	I			V		1		7.6E+03	Butanol, N-	71-36-3	7.8E+03	ns	1.2E+05	nms					2.0E+03	n		4.1E-01	n	
5.0E-04	I			4.0E-01	I	5.0E+00	I	V		1			Butyl Alcohol, t-	75-65-0	1.4E+03	c*	6.5E+03	c*	5.2E+03	n	2.2E+04	n	1.5E+02	c*		3.2E-02	c*	
				2.0E+00	P	3.0E+01	P	V		1		2.1E+04	Butyl alcohol, sec-	78-92-2	1.3E+05	nms	1.5E+06	nms	3.1E+04	n	1.3E+05	n	2.4E+04	n		5.0E+00	n	
				5.0E-02	I			V		1			Butylate	2008-41-5	3.9E+03	n	5.8E+04	n					4.6E+02	n		4.5E-01	n	
2.0E-04	C	5.7E-08	C							1	0.1		Butylated hydroxyanisole	25013-16-5	2.7E+03	c	1.1E+04	c	4.9E+01	c	2.2E+02	c	1.5E+02	c		2.9E-01	c	
3.6E-03	P			3.0E-01	P					1	0.1		Butylated hydroxytoluene	128-37-0	1.5E+02	c	6.4E+02	c					3.4E+00	c		1.0E-01	c	
				5.0E-02	P			V		1		1.1E+02	Butylbenzene, n-	104-51-8	3.9E+03	ns	5.8E+04	ns					1.0E+03	n		3.2E+00	n	
				1.0E-01	X			V		1		1.5E+02	Butylbenzene, sec-	135-98-8	7.8E+03	ns	1.2E+05	nms					2.0E+03	n		5.9E+00	n	
				1.0E-01	X			V		1		1.8E+02	Butylbenzene, tert-	98-06-6	7.8E+03	ns	1.2E+05	nms					6.9E+02	n		1.6E+00	n	
				2.0E-02	A					1	0.1		Cacodylic Acid	75-60-5	1.3E+03	n	1.6E+04	n					4.0E+02	n		1.1E-01	n	
		1.8E-03	I	1.0E-04	A	1.0E-05	A			0.025	0.001		Cadmium (Diet)	7440-43-9	7.1E+00	n	1.0E+02	n	1.6E-03	c**	6.8E-03	c**						
		1.8E-03	I	1.0E-04	A	1.0E-05	A			0.05	0.001		Cadmium (Water)	7440-43-9					1.6E-03	c**	6.8E-03	c**	1.8E+00	n	5.0E+00	1.4E-01	n	3.8E-01
				5.0E-01	I	2.2E-03	C			1	0.1		Caprolactam	105-60-2	3.1E+04	n	4.0E+05	nm	2.3E+00	n	9.6E+00	n	9.9E+03	n		2.5E+00	n	
1.5E-01	C	4.3E-05	C	2.0E-03	I					1	0.1		Captafol	2425-06-1	3.6E+00	c*	1.5E+01	c	6.5E-02	c	2.9E-01	c	4.0E-01	c*		7.1E-04	c*	
2.3E-03	C	6.6E-07	C	1.3E-01	I					1	0.1		Captan	133-06-2	2.4E+02	c*	1.0E+03	c	4.3E+00	c	1.9E+01	c	3.1E+01	c*		2.2E-02	c*	
				1.0E-01	I					1	0.1		Carbaryl	63-25-2	6.3E+03	n	8.2E+04	n					1.8E+03	n		1.7E+00	n	
				5.0E-03	I					1	0.1		Carbofuran	1563-66-2	3.2E+02	n	4.1E+03	n					9.4E+01	n	4.0E+01	3.7E-02	n	1.6E-02
				1.0E-01	I	7.0E-01	I	V		1		7.4E+02	Carbon Disulfide	75-15-0	7.7E+02	ns	3.5E+03	ns	7.3E+02	n	3.1E+03	n	8.1E+02	n		2.4E-01	n	
7.0E-02	I	6.0E-06	I	4.0E-03	I	1.0E-01	I	V		1		4.6E+02	Carbon Tetrachloride	56-23-5	6.5E-01	c	2.9E+00	c	4.7E-01	c	2.0E+00	c	4.6E-01	c	5.0E+00	1.8E-04	c	1.9E-03
						1.0E-01	P	V		1		5.9E+03	Carbonyl Sulfide	463-58-1	6.7E+01	n	2.8E+02	n	1.0E+02	n	4.4E+02	n	2.1E+02	n		5.1E-01	n	
				1.0E-02	I					1	0.1		Carbosulfan	55285-14-8	6.3E+02	n	8.2E+03	n					5.1E+01	n		1.2E+00	n	
				1.0E-01	I					1	0.1		Carboxin	5234-68-4	6.3E+03	n	8.2E+04	n					1.9E+03	n		1.0E+00	n	
						9.0E-04	I			1			Ceric oxide	1306-38-3	1.3E+06	nm	5.4E+06	nm	9.4E-01	n	3.9E+00	n						
				1.0E-01	I			V		1			Chloral Hydrate	302-17-0	7.8E+03	n	1.2E+05	nm					2.0E+03	n		4.0E-01	n	
				1.5E-02	I					1	0.1		Chloramben	133-90-4	9.5E+02	n	1.2E+04	n					2.9E+02	n		7.0E-02	n	
													Chloramines, Organic	E701235											4.0E+03(G)			
4.0E-01	H									1	0.1		Chloranil	118-75-2	1.3E+00	c	5.7E+00	c					1.8E-01	c		1.5E-04	c	
				5.0E-04	G			V		1	0.04		Chlordane (alpha)	5103-71-9	3.6E+01	n	5.0E+02	n					3.6E+00	n		4.9E-01	n	
				5.0E-04	G			V		1	0.04		Chlordane (gamma)	5103-74-2	3.6E+01	n	5.0E+02	n					1.0E+01	n		1.4E+00	n	
3.5E-01	I	1.0E-04	I	5.0E-04	I	7.0E-04	I	V		1	0.04		Chlordane (technical mixture)	12789-03-6	1.7E+00	c*	7.7E+00	c*	2.8E-02	c*	1.2E-01	c*	2.0E-02	c*	2.0E+00	2.7E-03	c*	2.7E-01
1.0E+01	I	4.6E-03	C	3.0E-04	I					1	0.1		Chlordecone (Kepone)	143-50-0	5.4E-02	c	2.3E-01	c	6.1E-04	c	2.7E-03	c	3.5E-03	c		1.2E-04	c	
				7.0E-04	A					1	0.1		Chlorfenvinphos	470-90-6	4.4E+01	n	5.7E+02	n					1.1E+01	n		3.1E-02	n	
				9.0E-02	O					1	0.1		Chlorimuron, Ethyl-	90982-32-4	5.7E+03	n	7.4E+04	n					1.8E+03	n		6.0E-01	n	
				1.0E-01	I	1.5E-04	A	V		1		2.8E+03	Chlorine	7782-50-5	1.8E-01	n	7.8E-01	n	1.5E-01	n	6.4E-01	n	3.0E-01	n	4.0E+03(G)	1.5E-04	n	2.0E+00
				3.0E-02	I	2.0E-04	I	V		1			Chlorine Dioxide	10049-04-4	2.3E+03	n	3.4E+04	n	2.1E-01	n	8.8E-01	n	4.2E-01	n	8.0E+02(G)			
				3.0E-02	I					1			Chlorite (Sodium Salt)	7758-19-2	2.3E+03	n	3.5E+04	n					6.0E+02	n	1.0E+03			
						5.0E+01	I	V		1		1.2E+03	Chloro-1,1-difluoroethane, 1-	75-68-3	5.4E+04	ns	2.3E+05	nms	5.2E+04	n	2.2E+05	n	1.0E+05	n		5.2E+01	n	
		3.0E-04	I	2.0E-02	H	2.0E-02	I	V		1		7.9E+02	Chloro-1,3-butadiene, 2-	126-99-8	1.0E-02	c	4.4E-02	c	9.4E-03	c	4.1E-02	c	1.9E-02	c		9.8E-06	c	
4.6E-01	H									1	0.1		Chloro-2-methylaniline HCl, 4-	3165-93-3	1.2E+00	c	5.0E+00	c					1.7E-01	c		1.5E-04	c	
1.0E-01	P	7.7E-05	C	3.0E-03	X					1	0.1		Chloro-2-methylaniline, 4-	95-69-2	5.4E+00	c*	2.3E+01	c	3.6E-02	c	1.6E-01	c	7.0E-01	c*		4.0E-04	c*	
2.7E-01	X							V		1		1.2E+04	Chloroacetaldehyde, 2-	107-20-0	2.6E+00	c	1.2E+01	c					2.9E-01	c		5.8E-05	c	
										1	0.1		Chloroacetic Acid	79-11-8											6.0E+01(G)			1.2E-02
						3.0E-05	I			1	0.1		Chloroacetophenone, 2-	532-27-4	4.3E+04	n	1.8E+05	nm	3.1E-02	n	1.3E-01	n						
2.0E-01	P			5.0E-04	P					1	0.1		Chloroaniline, p-	106-47-8	2.7E+00	c*	1.1E+01	c*					3.7E-01	c*		1.6E-04	c*	
				2.0E-02	I	5.0E-02	P	V		1		7.6E+02	Chlorobenzene	108-90-7	2.8E+02	n	1.3E+03	ns	5.2E+01	n	2.2E+02	n	7.8E+01	n	1.0E+02	5.3E-02	n	6.8E-02
				1.0E-01	X					1	0.1		Chlorobenzene sulfonic acid, p-	98-66-8	6.3E+03	n	8.2E+04	n					2.0E+03	n		4.7E-01	n	
1.1E-01	C	3.1E-05	C	2.0E-02	I					1	0.1		Chlorobenzilate	510-15-6	4.9E+00	c	2.1E+01	c	9.1E-02	c	4.0E-01	c	3.1E-01	c		1.0E-03	c	
				3.0E-02	X					1	0.1		Chlorobenzoic Acid, p-	74-11-3	1.9E+03	n	2.5E+04	n					5.1E+02	n		1.3E-01	n	
		8.6E-06	C	3.0E-03	P	3.0E-01	P	V		1		2.9E+02	Chlorobenzotrifluoride, 4-	98-56-6	2.2E+00	c*	9.6E+00	c	3.3E-01	c	1.4E+00	c	6.5E-01	c*		2.3E-03	c*	
				4.0E-02	P			V		1		7.3E+02	Chlorobutane, 1-	109-69-3	3.1E+03	ns	4.7E+04	ns					6.4E+02	n		2.6E-01	n	
						5.0E+01	I	V		1		1.7E+03	Chlorodifluoromethane	75-45-6	4.9E+04	ns	2.1E+05	nms	5.2E+04	n	2.2E+05	n	1.0E+05	n		4.3E+01	n	
				2.0E-02	P			V		1		1.1E+05	Chloroethanol, 2-	107-07-3	1.6E+03	n	2.3E+04	n					4.0E+02	n		8.1E-02	n	
3.1E-02	C	2.3E-05	I	1.0E-02	I	9.8E-02	A	V		1		2.5E+03	Chloroform	67-66-3	3.2E-01	c	1.4E+00	c	1.2E-01	c	5.3E-01	c	2.2E-01	c	8.0E+01(G)	6.1E-05	c	2.2E-02
						9.0E-02	I	V		1		1.3E+03	Chloromethane	74-87-3	1.1E+02	n	4.6E+02	n	9.4E+01	n	3.9E+02	n	1.9E+02	n		4.9E-02	n	
2.4E+00	C	6.9E-04	C					V		1		9.3E+03	Chloromethyl Methyl Ether	107-30-2	2.0E-02	c	8.9E-02	c	4.1E-03	c	1.8E-02	c	6.5E-03	c		1.4E-06	c	
3.0E-01	P			3.0E-03	P	1.0E-05	X			1	0.1		Chloronitrobenzene, o-	88-73-3	1.8E+00	c	7.7E+00	c	1.0E-02	n	4.4E-02	n	2.4E-01	c		2.2E-04	c	
6.0E-02	P			7.0E-04	P	2.0E-03	P			1	0.1		Chloronitrobenzene, p-	100-00-5	9.0E+00	c**	3.8E+01	c*	2.1E+00	n	8.8E+00	n	1.2E+00	c*		1.1E-03	c*	
				5.0E-03	I			V		1		2.7E+04	Chlorophenol, 2-	95-57-8	3.9E+02	n	5.8E+03	n					9.1E+01	n		8.9E-02	n	
						4.0E-04	C	V		1		6.2E+02	Chloropicrin	76-06-2	2.0E+00	n	8.2E+00	n	4.2E-01	n	1.8E+00	n	8.3E-01	n		2.5E-04	n	
1.7E-02	C			1.5E-02	I					1	0.1		Chlorothalonil	1897-45-6	3.2E+01	c*	1.4E+02	c*					4.0E+00	c*		9.0E-03	c*	
				2.0E-02	I			V		1		9.1E+02	Chlorotoluene, o-	95-49-8	1.6E+03	ns	2.3E+04	ns					2.4E+02	n		2.3E-01	n	
				2.0E-02	X			V		1		2.5E+02	Chlorotoluene, p-	106-43-4	1.6E+03	ns	2.3E+04	ns					2.5E+02	n		2.4E-01	n	
2.4E+02	C	6.9E-02	C							1	0.1		Chlorozotocin	54749-90-5	2.3E-03	c	9.6E-03	c	4.1E-05	c	1.8E-04	c	3.2E-04	c		7.1E-08	c	
				5.0E-03	O					1	0.1		Chlorpropham	101-21-3	3.2E+02	n	4.1E+03	n					7.1E+01	n		6.4E-02	n	

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information														Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				1.0E-03	A					1	0.1		Chlorpyrifos	2921-88-2	6.3E+01	n	8.2E+02	n					8.4E+00	n		1.2E-01	n	
				1.0E-02	H					1	0.1		Chlorpyrifos Methyl	5598-13-0	6.3E+02	n	8.2E+03	n					1.2E+02	n		5.4E-01	n	
				5.0E-02	O					1	0.1		Chlorsulfuron	64902-72-3	3.2E+03	n	4.1E+04	n					9.9E+02	n		8.3E-01	n	
				1.0E-02	I					1	0.1		Chlorthal-dimethyl	1861-32-1	6.3E+02	n	8.2E+03	n					1.2E+02	n		1.5E-01	n	
				8.0E-04	H					1	0.1		Chlorthiophos	60238-56-4	5.1E+01	n	6.6E+02	n					2.8E+00	n		7.3E-02	n	
				1.5E+00	I					0.013			Chromium(III), Insoluble Salts	16065-83-1	1.2E+05	nm	1.8E+06	nm					2.2E+04	n		4.0E+07	n	
5.0E-01	C	8.4E-02	G	3.0E-03	I	1.0E-04	I		M	0.025			Chromium(VI)	18540-29-9	3.0E-01	c	6.3E+00	c	1.2E-05	c	1.5E-04	c	3.5E-02	c		6.7E-04	c	
										0.013			Chromium, Total	7440-47-3											1.0E+02			1.8E+05
				1.3E-02	I					1	0.1		Clofentezine	74115-24-5	8.2E+02	n	1.1E+04	n					2.3E+02	n		1.4E+01	n	
		9.0E-03	P	3.0E-04	P	6.0E-06	P			1			Cobalt	7440-48-4	2.3E+01	n	3.5E+02	n	3.1E-04	c*	1.4E-03	c*	6.0E+00	n		2.7E-01	n	
		6.2E-04	I					V	M	1			Coke Oven Emissions	E649830					1.6E-03	c	2.0E-02	c						
				4.0E-02	H					1			Copper	7440-50-8	3.1E+03	n	4.7E+04	n					8.0E+02	n	1.3E+03	2.8E+01	n	4.6E+01
				5.0E-02	I	6.0E-01	C			1	0.1		Cresol, m-	108-39-4	3.2E+03	n	4.1E+04	n	6.3E+02	n	2.6E+03	n	9.3E+02	n		7.4E-01	n	
				5.0E-02	I	6.0E-01	C			1	0.1		Cresol, o-	95-48-7	3.2E+03	n	4.1E+04	n	6.3E+02	n	2.6E+03	n	9.3E+02	n		7.5E-01	n	
				2.0E-02	P	6.0E-01	C			1	0.1		Cresol, p-	106-44-5	1.3E+03	n	1.6E+04	n	6.3E+02	n	2.6E+03	n	3.7E+02	n		3.0E-01	n	
				1.0E-01	A					1	0.1		Cresol, p-chloro-m-	59-50-7	6.3E+03	n	8.2E+04	n					1.4E+03	n		1.7E+00	n	
				1.0E-01	A	6.0E-01	C			1	0.1		Cresols	1319-77-3	6.3E+03	n	8.2E+04	n	6.3E+02	n	2.6E+03	n	1.5E+03	n		1.3E+00	n	
1.9E+00	H			1.0E-03	P			V		1		1.7E+04	Crotonaldehyde, trans-	123-73-9	3.7E-01	c	1.7E+00	c					4.0E-02	c		8.2E-06	c	
				1.0E-01	I	4.0E-01	I	V		1		2.7E+02	Cumene	98-82-8	1.9E+03	ns	9.9E+03	ns	4.2E+02	n	1.8E+03	n	4.5E+02	n		7.4E-01	n	
2.2E-01	C	6.3E-05	C							1	0.1		Cupferron	135-20-6	2.5E+00	c	1.0E+01	c	4.5E-02	c	1.9E-01	c	3.5E-01	c		6.1E-04	c	
8.4E-01	H			2.0E-03	H					1	0.1		Cyanazine	21725-46-2	6.5E-01	c	2.7E+00	c					8.8E-02	c		4.1E-05	c	
													Cyanides															
				1.0E-03	I					1			~Calcium Cyanide	592-01-8	7.8E+01	n	1.2E+03	n					2.0E+01	n				
				5.0E-03	I					1			~Copper Cyanide	544-92-3	3.9E+02	n	5.8E+03	n					1.0E+02	n				
				6.0E-04	I	8.0E-04	G	V		1		9.5E+05	~Cyanide (CN-)	57-12-5	2.3E+01	n	1.5E+02	n	8.3E-01	n	3.5E+00	n	1.5E+00	n	2.0E+02	1.5E-02	n	2.0E+00
				1.0E-03	I			V		1			~Cyanogen	460-19-5	7.8E+01	n	1.2E+03	n					2.0E+01	n				
				9.0E-02	I			V		1			~Cyanogen Bromide	506-68-3	7.0E+03	n	1.1E+05	nm					1.8E+03	n				
				5.0E-02	I			V		1			~Cyanogen Chloride	506-77-4	3.9E+03	n	5.8E+04	n					1.0E+03	n				
				6.0E-04	I	8.0E-04	I	V		1		1.0E+07	~Hydrogen Cyanide	74-90-8	2.3E+01	n	1.5E+02	n	8.3E-01	n	3.5E+00	n	1.5E+00	n		1.5E-02	n	
				2.0E-03	I					1			~Potassium Cyanide	151-50-8	1.6E+02	n	2.3E+03	n					4.0E+01	n				
				5.0E-03	I					0.04			~Potassium Silver Cyanide	506-61-6	3.9E+02	n	5.8E+03	n					8.2E+01	n				
				1.0E-01	I					0.04			~Silver Cyanide	506-64-9	7.8E+03	n	1.2E+05	nm					1.8E+03	n				
				1.0E-03	I					1			~Sodium Cyanide	143-33-9	7.8E+01	n	1.2E+03	n					2.0E+01	n	2.0E+02			
				2.0E-04	P					1			~Thiocyanates	E1790664	1.6E+01	n	2.3E+02	n					4.0E+00	n				
				2.0E-04	X			V		1			~Thiocyanic Acid	463-56-9	1.6E+01	n	2.3E+02	n					4.0E+00	n				
				5.0E-02	I					1			~Zinc Cyanide	557-21-1	3.9E+03	n	5.8E+04	n					1.0E+03	n				
						6.0E+00	I	V		1		1.2E+02	Cyclohexane	110-82-7	6.5E+03	ns	2.7E+04	ns	6.3E+03	n	2.6E+04	n	1.3E+04	n		1.3E+01	n	
2.0E-02	X			2.0E-02	X					1	0.1		Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	2.7E+01	c*	1.1E+02	c					2.8E+00	c		1.6E-02	c	
				5.0E+00	I	7.0E-01	P	V		1		5.1E+03	Cyclohexanone	108-94-1	2.8E+04	ns	1.3E+05	nms	7.3E+02	n	3.1E+03	n	1.4E+03	n		3.4E-01	n	
				5.0E-03	P	1.0E+00	X	V		1		2.8E+02	Cyclohexene	110-83-8	3.1E+02	ns	3.1E+03	ns	1.0E+03	n	4.4E+03	n	7.0E+01	n		4.6E-02	n	
				2.0E-01	I			V		1		2.9E+05	Cyclohexylamine	108-91-8	1.6E+04	n	2.3E+05	nm					3.8E+03	n		1.0E+00	n	
				2.5E-02	I					1	0.1		Cyfluthrin	68359-37-5	1.6E+03	n	2.1E+04	n					1.2E+02	n		3.1E+01	n	
				7.2E-02	O					1	0.1		Cypermethrin	52315-07-8	4.5E+03	n	5.9E+04	n					1.4E+03	n		2.3E+02	n	
				5.0E-01	O					1	0.1		Cyromazine	66215-27-8	3.2E+04	n	4.1E+05	nm					9.9E+03	n		2.5E+00	n	
2.4E-01	I	6.9E-05	C	3.0E-05	X					1	0.1		DDD, p,p`- (DDD)	72-54-8	1.9E+00	n	9.6E+00	c**	4.1E-02	c	1.8E-01	c	3.2E-02	c**		7.5E-03	c**	
3.4E-01	I	9.7E-05	C	3.0E-04	X			V		1			DDE, p,p'-	72-55-9	2.0E+00	c*	9.3E+00	c*	2.9E-02	c	1.3E-01	c	4.6E-02	c		1.1E-02	c	
3.4E-01	I	9.7E-05	I	5.0E-04	I					1	0.03		DDT	50-29-3	1.9E+00	c*	8.5E+00	c*	2.9E-02	c	1.3E-01	c	2.3E-01	c*		7.7E-02	c*	
				3.0E-02	I					1	0.1		Dalapon	75-99-0	1.9E+03	n	2.5E+04	n					6.0E+02	n	2.0E+02	1.2E-01	n	4.1E-02
1.8E-02	C	5.1E-06	C	1.5E-01	I					1	0.1		Daminozide	1596-84-5	3.0E+01	c	1.3E+02	c	5.5E-01	c	2.4E+00	c	4.3E+00	c		9.5E-04	c	
7.0E-04	I			7.0E-03	I					1	0.1		Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	4.4E+02	n	3.3E+03	c**					1.1E+02	c**		6.2E+01	c**	
				4.0E-05	I					1	0.1		Demeton	8065-48-3	2.5E+00	n	3.3E+01	n					4.2E-01	n				
1.2E-03	I			6.0E-01	I					1	0.1		Di(2-ethylhexyl)adipate	103-23-1	4.5E+02	c*	1.9E+03	c					6.5E+01	c	4.0E+02	4.7E+00	c	2.9E+01
6.1E-02	H									1	0.1		Diallate	2303-16-4	8.9E+00	c	3.8E+01	c					5.4E-01	c		8.0E-04	c	
				7.0E-04	A					1	0.1		Diazinon	333-41-5	4.4E+01	n	5.7E+02	n					1.0E+01	n		6.5E-02	n	
				1.0E-02	X			V		1			Dibenzothiophene	132-65-0	7.8E+02	n	1.2E+04	n					6.5E+01	n		1.2E+00	n	
8.0E-01	P	6.0E-03	P	2.0E-04	P	2.0E-04	I	V	M	1		9.8E+02	Dibromo-3-chloropropane, 1,2-	96-12-8	5.3E-03	c	6.4E-02	c	1.7E-04	c	2.0E-03	c	3.3E-04	c	2.0E-01	1.4E-07	c	8.6E-05
										1	0.1		Dibromoacetic acid	631-64-1											6.0E+01(G)			1.2E-02
				4.0E-04	X			V		1		1.6E+02	Dibromobenzene, 1,3-	108-36-1	3.1E+01	n	4.7E+02	ns					5.3E+00	n		5.1E-03	n	
				1.0E-02	I			V		1			Dibromobenzene, 1,4-	106-37-6	7.8E+02	n	1.2E+04	n					1.3E+02	n		1.2E-01	n	
8.4E-02	I			2.0E-02	I			V		1		8.0E+02	Dibromochloromethane	124-48-1	8.3E+00	c	3.9E+01	c					8.7E-01	c	8.0E+01(G)	2.3E-04	c	2.1E-02
2.0E+00	I	6.0E-04	I	9.0E-03	I	9.0E-03	I	V		1		1.3E+03	Dibromoethane, 1,2-	106-93-4	3.6E-02	c	1.6E-01	c	4.7E-03	c	2.0E-02	c	7.5E-03	c	5.0E-02	2.1E-06	c	1.4E-05
						4.0E-03	X	V		1		2.8E+03	Dibromomethane (Methylene Bromide)	74-95-3	2.4E+01	n	9.9E+01	n	4.2E+00	n	1.8E+01	n	8.3E+00	n		2.1E-03	n	
				3.0E-04	P					1	0.1		Dibutyltin Compounds	E1790660	1.9E+01	n	2.5E+02	n					6.0E+00	n				
				3.0E-02	I					1	0.1		Dicamba	1918-00-9	1.9E+03	n	2.5E+04	n					5.7E+02	n		1.5E-01	n	
													Dichloramine	3400-09-7											4.0E+03(G)			
		4.2E-03	P					V		1		5.5E+02	Dichloro-2-butene, 1,4-	764-41-0	2.1E-03	c	9.4E-03	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.6E-07	c	
		4.2E-03	P					V		1		5.2E+02	Dichloro-2-butene, cis-1,4-	1476-11-5	7.4E-03	c	3.2E-02	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.2E-07	c	
		4.2E-03	P					V		1		7.6E+02	Dichloro-2-butene, trans-1,4-	110-57-6	7.4E-03	c	3.2E-02	c	6.7E-04	c	2.9E-03	c	1.3E-03	c		6.2E-07	c	
5.0E-02	I			4.0E-03	I					1	0.1		Dichloroacetic Acid	79-43-6	1.1E+01	c*	4.6E+01	c*					1.5E+00	c*	6.0E+01(G)	3.1E-04	c*	1.2E-02
				9.0E-02	I	2.0E-01	H	V		1		3.8E+02	Dichlorobenzene, 1,2-	95-50-1	1.8E+03	ns	9.3E+03	ns	2.1E+02	n	8.8E+02	n	3.0E+02	n	6.0E+02	3.0E-01	n	5.8E-01
5.4E-03	C	1.1E-05	C	7.0E-02	A	8.0E-01	I	V		1			Dichlorobenzene, 1,4-	106-46-7	2.6E+00	c	1.1E+01	c	2.6E-01	c	1.1E+00	c	4.8E-01	c	7.5E+01	4.6E-04	c	7.2E-02
4.5E-01	I	3.4E-04	C							1	0.1		Dichlorobenzidine, 3,3'-	91-94-1	1.2E+00	c	5.1E+00	c	8.3E-03	c	3.6E-02	c	1.3E-01	c		8.2E-04	c	
				9.0E-03	X					1	0.1		Dichlorobenzophenone, 4,4'-	90-98-2	5.7E+02	n	7.4E+03	n					7.8E+01	n		4.7E-01	n	
				2.0E-01	I	1.0E-01	X	V		1		8.5E+02	Dichlorodifluoromethane	75-71-8	8.7E+01	n	3.7E+02	n	1.0E+02	n	4.4E+02	n	2.0E+02	n		3.0E-01	n	
5.7E-03	C	1.6E-06	C	2.0E-01	P			V		1		1.7E+03	Dichloroethane, 1,1-	75-34-3	3.6E+00	c	1.6E+01	c	1.8E+00	c	7.7E+00	c	2.8E+00	c		7.8E-04	c	
9.1E-02	I	2.6E-05	I	6.0E-03	X	7.0E-03	P	V		1		3.0E+03	Dichloroethane, 1,2-	107-06-2	4.6E-01	c*	2.0E+00	c*	1.1E-01	c*	4.7E-01	c*	1.7E-01	c*	5.0E+00	4.8E-05	c*	1.4E-03
				5.0E-02	I	2.0E-01	I	V		1		1.2E+03	Dichloroethylene, 1,1-	75-35-4	2.3E+02	n	1.0E+03	n	2.1E+02	n	8.8E+02	n	2.8E+02	n	7.0E+00	1.0E-01	n	2.5E-03

TR=1E-06
THQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD$_o$ (mg/kg-day)	key	RfC$_i$ (mg/m^3)	key	vol	mutagen	GIABS	ABS$_d$	C$_{sat}$ (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				2.0E-03	I			V		1		2.4E+03	Dichloroethylene, cis-1,2-	156-59-2	1.6E+02	n	2.3E+03	n					3.6E+01	n	7.0E+01	1.1E-02	n	2.1E-02
				2.0E-02	I	4.0E-02	X	V		1		1.9E+03	Dichloroethylene, trans-1,2-	156-60-5	7.0E+01	n	3.0E+02	n	4.2E+01	n	1.8E+02	n	6.8E+01	n	1.0E+02	2.1E-02	n	3.1E-02
				3.0E-03	I					1	0.1		Dichlorophenol, 2,4-	120-83-2	1.9E+02	n	2.5E+03	n					4.6E+01	n		2.3E-02	n	
				1.0E-02	I					1	0.05		Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	7.0E+02	n	9.6E+03	n					1.7E+02	n	7.0E+01	4.5E-02	n	1.8E-02
3.7E-02	P	3.7E-06	P	4.0E-02	P	4.0E-03	I	V		1		1.4E+03	Dichloropropane, 1,2-	78-87-5	2.5E+00	c**	1.1E+01	c**	7.6E-01	c**	3.3E+00	c**	8.5E-01	c**	5.0E+00	2.8E-04	c**	1.7E-03
				2.0E-02	P			V		1		1.5E+03	Dichloropropane, 1,3-	142-28-9	1.6E+03	ns	2.3E+04	ns					3.7E+02	n		1.3E-01	n	
				3.0E-03	I					1	0.1		Dichloropropanol, 2,3-	616-23-9	1.9E+02	n	2.5E+03	n					5.9E+01	n		1.3E-02	n	
1.0E-01	I	4.0E-06	I	3.0E-02	I	2.0E-02	I	V		1		1.6E+03	Dichloropropene, 1,3-	542-75-6	1.8E+00	c*	8.2E+00	c*	7.0E-01	c*	3.1E+00	c*	4.7E-01	c*		1.7E-04	c*	
2.9E-01	I	8.3E-05	C	5.0E-04	I	5.0E-04	I			1	0.1		Dichlorvos	62-73-7	1.9E+00	c*	7.9E+00	c*	3.4E-02	c*	1.5E-01	c*	2.6E-01	c*		8.1E-05	c*	
				3.0E-05	O					1	0.1		Dicrotophos	141-66-2	1.9E+00	n	2.5E+01	n					6.0E-01	n		1.4E-04	n	
				8.0E-02	P	3.0E-04	X	V		1		2.6E+02	Dicyclopentadiene	77-73-6	1.3E+00	n	5.4E+00	n	3.1E-01	n	1.3E+00	n	6.3E-01	n		2.2E-03	n	
1.6E+01	I	4.6E-03	I	5.0E-05	I					1	0.1		Dieldrin	60-57-1	3.4E-02	c*	1.4E-01	c	6.1E-04	c	2.7E-03	c	1.8E-03	c		7.1E-05	c	
		3.0E-04	C			5.0E-03	I			1	0.1		Diesel Engine Exhaust	E17136615					9.4E-03	c	4.1E-02	c						
				2.0E-03	P	2.0E-04	P			1	0.1		Diethanolamine	111-42-2	1.3E+02	n	1.6E+03	n	2.1E-01	n	8.8E-01	n	4.0E+01	n		8.1E-03	n	
				3.0E-02	P	1.0E-04	P			1	0.1		Diethylene Glycol Monobutyl Ether	112-34-5	1.9E+03	n	2.4E+04	n	1.0E-01	n	4.4E-01	n	6.0E+02	n		1.3E-01	n	
				6.0E-02	P	3.0E-04	P			1	0.1		Diethylene Glycol Monoethyl Ether	111-90-0	3.8E+03	n	4.8E+04	n	3.1E-01	n	1.3E+00	n	1.2E+03	n		2.4E-01	n	
				1.0E-03	P			V		1		1.1E+05	Diethylformamide	617-84-5	7.8E+01	n	1.2E+03	n					2.0E+01	n		4.1E-03	n	
3.5E+02	C	1.0E-01	C							1	0.1		Diethylstilbestrol	56-53-1	1.6E-03	c	6.6E-03	c	2.8E-05	c	1.2E-04	c	5.1E-05	c		2.8E-05	c	
				8.3E-02	O					1	0.1		Difenzoquat	43222-48-6	5.2E+03	n	6.8E+04	n					1.7E+03	n		2.6E+02	n	
				2.0E-02	I					1	0.1		Diflubenzuron	35367-38-5	1.3E+03	n	1.6E+04	n					2.9E+02	n		3.3E-01	n	
						4.0E+01	I	V		1		1.4E+03	Difluoroethane, 1,1-	75-37-6	4.8E+04	ns	2.0E+05	nms	4.2E+04	n	1.8E+05	n	8.3E+04	n		2.8E+01	n	
						3.0E+01	X	V		1		6.9E+02	Difluoropropane, 2,2-	420-45-1	2.4E+04	ns	1.0E+05	ns	3.1E+04	n	1.3E+05	n	6.3E+04	n		1.4E+02	n	
4.4E-02	C	1.3E-05	C					V		1			Dihydrosafrole	94-58-6	9.9E+00	c	4.5E+01	c	2.2E-01	c	9.4E-01	c	3.0E-01	c		1.9E-04	c	
						7.0E-01	P	V		1		2.3E+03	Diisopropyl Ether	108-20-3	2.2E+03	n	9.4E+03	ns	7.3E+02	n	3.1E+03	n	1.5E+03	n		3.7E-01	n	
				8.0E-02	I			V		1		5.3E+02	Diisopropyl Methylphosphonate	1445-75-6	6.3E+03	ns	9.3E+04	ns					1.6E+03	n		4.5E-01	n	
				2.2E-02	O					1	0.1		Dimethipin	55290-64-7	1.4E+03	n	1.8E+04	n					4.4E+02	n		9.6E-02	n	
				2.2E-03	O					1	0.1		Dimethoate	60-51-5	1.4E+02	n	1.8E+03	n					4.4E+01	n		9.9E-03	n	
1.6E+00	P									1	0.1		Dimethoxybenzidine, 3,3'-	119-90-4	3.4E-01	c	1.4E+00	c					4.7E-02	c		5.8E-05	c	
1.7E-03	P			6.0E-02	P					1	0.1		Dimethyl methylphosphonate	756-79-6	3.2E+02	c*	1.4E+03	c*					4.6E+01	c*		9.6E-03	c*	
4.6E+00	C	1.3E-03	C							1	0.1		Dimethylamino azobenzene [p-]	60-11-7	1.2E-01	c	5.0E-01	c	2.2E-03	c	9.4E-03	c	5.0E-03	c		2.1E-05	c	
5.8E-01	H									1	0.1		Dimethylaniline HCl, 2,4-	21436-96-4	9.4E-01	c	4.0E+00	c					1.3E-01	c		1.2E-04	c	
2.0E-01	P			2.0E-03	X					1	0.1		Dimethylaniline, 2,4-	95-68-1	2.7E+00	c*	1.1E+01	c					3.7E-01	c		2.1E-04	c	
2.7E-02	P			2.0E-03	I			V		1		8.3E+02	Dimethylaniline, N,N-	121-69-7	2.6E+01	c**	1.2E+02	c*					2.5E+00	c*		9.0E-04	c*	
1.1E+01	P									1	0.1		Dimethylbenzidine, 3,3'-	119-93-7	4.9E-02	c	2.1E-01	c					6.5E-03	c		4.3E-05	c	
				1.0E-01	P	3.0E-02	I	V		1		1.1E+05	Dimethylformamide	68-12-2	2.6E+03	n	1.5E+04	n	3.1E+01	n	1.3E+02	n	6.1E+01	n		1.2E-02	n	
				1.0E-04	X	2.0E-06	X	V		1		1.7E+05	Dimethylhydrazine, 1,1-	57-14-7	5.7E-02	n	2.4E-01	n	2.1E-03	n	8.8E-03	n	4.2E-03	n		9.3E-07	n	
5.5E+02	C	1.6E-01	C					V		1		1.9E+05	Dimethylhydrazine, 1,2-	540-73-8	8.8E-04	c	4.1E-03	c	1.8E-05	c	7.7E-05	c	2.8E-05	c		6.5E-09	c	
				2.0E-02	I					1	0.1		Dimethylphenol, 2,4-	105-67-9	1.3E+03	n	1.6E+04	n					3.6E+02	n		4.2E-01	n	
				6.0E-04	I					1	0.1		Dimethylphenol, 2,6-	576-26-1	3.8E+01	n	4.9E+02	n					1.1E+01	n		1.3E-02	n	
				1.0E-03	I					1	0.1		Dimethylphenol, 3,4-	95-65-8	6.3E+01	n	8.2E+02	n					1.8E+01	n		2.1E-02	n	
4.5E-02	C	1.3E-05	C					V		1		4.7E+02	Dimethylvinylchloride	513-37-1	1.1E+00	c	4.8E+00	c	2.2E-01	c	9.4E-01	c	3.3E-01	c		1.1E-04	c	
				8.0E-05	X					1	0.1		Dinitro-o-cresol, 4,6-	534-52-1	5.1E+00	n	6.6E+01	n					1.5E+00	n		2.6E-03	n	
				2.0E-03	I					1	0.1		Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	1.3E+02	n	1.6E+03	n					2.3E+01	n		7.7E-01	n	
				4.0E-04	X	2.0E-03	X			1	0.1		Dinitroaniline, 3,5-	618-87-1	2.5E+01	n	3.3E+02	n	2.1E+00	n	8.8E+00	n	7.7E+00	n		4.1E-03	n	
				1.0E-04	P					1	0.1		Dinitrobenzene, 1,2-	528-29-0	6.3E+00	n	8.2E+01	n					1.9E+00	n		1.8E-03	n	
				1.0E-04	I					1	0.1		Dinitrobenzene, 1,3-	99-65-0	6.3E+00	n	8.2E+01	n					2.0E+00	n		1.8E-03	n	
				1.0E-04	P					1	0.1		Dinitrobenzene, 1,4-	100-25-4	6.3E+00	n	8.2E+01	n					2.0E+00	n		1.8E-03	n	
				2.0E-03	I					1	0.1		Dinitrophenol, 2,4-	51-28-5	1.3E+02	n	1.6E+03	n					3.9E+01	n		4.4E-02	n	
6.8E-01	I									1	0.1		Dinitrotoluene Mixture, 2,4/2,6-	E1615210	8.0E-01	c	3.4E+00	c					1.1E-01	c		1.5E-04	c	
3.1E-01	C	8.9E-05	C	2.0E-03	I					1	0.102		Dinitrotoluene, 2,4-	121-14-2	1.7E+00	c*	7.4E+00	c	3.2E-02	c	1.4E-01	c	2.4E-01	c		3.2E-04	c	
1.5E+00	P			3.0E-04	X					1	0.099		Dinitrotoluene, 2,6-	606-20-2	3.6E-01	c*	1.5E+00	c					4.9E-02	c		6.7E-05	c	
				1.0E-04	X					1	0.006		Dinitrotoluene, 2-Amino-4,6-	35572-78-2	7.7E+00	n	1.1E+02	n					1.9E+00	n		1.5E-03	n	
				1.0E-04	X					1	0.009		Dinitrotoluene, 4-Amino-2,6-	19406-51-0	7.7E+00	n	1.1E+02	n					1.9E+00	n		1.5E-03	n	
4.5E-01	X			9.0E-04	X					1	0.1		Dinitrotoluene, Technical grade	25321-14-6	1.2E+00	c*	5.1E+00	c					1.0E-01	c		1.4E-04	c	
				1.0E-03	I					1	0.1		Dinoseb	88-85-7	6.3E+01	n	8.2E+02	n					1.5E+01	n	7.0E+00	1.3E-01	n	6.2E-02
1.0E-01	I	5.0E-06	I	3.0E-02	I	3.0E-02	I	V		1		1.2E+05	Dioxane, 1,4-	123-91-1	5.3E+00	c	2.4E+01	c	5.6E-01	c*	2.5E+00	c*	4.6E-01	c		9.4E-05	c	
													Dioxins																
6.2E+03	I	1.3E+00	I							1	0.03		~Hexachlorodibenzo-p-dioxin, Mixture	34465-46-8	1.0E-04	c	4.7E-04	c	2.2E-06	c	9.4E-06	c	1.3E-05	c		1.7E-05	c	
1.3E+05	C	3.8E+01	C	7.0E-10	I	4.0E-08	C	V		1	0.03		~TCDD, 2,3,7,8-	1746-01-6	4.8E-06	c*	2.2E-05	c*	7.4E-08	c	3.2E-07	c	1.2E-07	c	3.0E-05	5.9E-08	c	1.5E-05
				3.0E-02	I					1	0.1		Diphenamid	957-51-7	1.9E+03	n	2.5E+04	n					5.3E+02	n		5.2E+00	n	
						4.0E-04	X	V		1			Diphenyl Ether	101-84-8	3.4E+01	n	1.4E+02	n	4.2E-01	n	1.8E+00	n	8.3E-01	n		3.4E-03	n	
				8.0E-04	X					1	0.1		Diphenyl Sulfone	127-63-9	5.1E+01	n	6.6E+02	n					1.5E+01	n		3.6E-02	n	
				1.0E-01	O					1	0.1		Diphenylamine	122-39-4	6.3E+03	n	8.2E+04	n					1.3E+03	n		2.3E+00	n	
8.0E-01	I	2.2E-04	I							1	0.1		Diphenylhydrazine, 1,2-	122-66-7	6.8E-01	c	2.9E+00	c	1.3E-02	c	5.6E-02	c	7.8E-02	c		2.5E-04	c	
				2.2E-03	I					1	0.1		Diquat	2764-72-9	1.4E+02	n	1.8E+03	n					4.0E+01	n	2.0E+01	3.3E-01	n	1.7E-01
7.4E+00	C	2.1E-03	C							1	0.1		Direct Black 38	1937-37-7	7.3E-02	c	3.1E-01	c	1.3E-03	c	5.8E-03	c	1.1E-02	c		5.1E+00	c	
7.4E+00	C	2.1E-03	C							1	0.1		Direct Blue 6	2602-46-2	7.3E-02	c	3.1E-01	c	1.3E-03	c	5.8E-03	c	1.1E-02	c		1.7E+01	c	
6.7E+00	C	1.9E-03	C							1	0.1		Direct Brown 95	16071-86-6	8.1E-02	c	3.4E-01	c	1.5E-03	c	6.5E-03	c	1.2E-02	c		1.6E-01	c	
				4.0E-05	I					1	0.1		Disulfoton	298-04-4	2.5E+00	n	3.3E+01	n					5.0E-01	n		9.4E-04	n	
				1.0E-02	I			V		1			Dithiane, 1,4-	505-29-3	7.8E+02	n	1.2E+04	n					2.0E+02	n		9.7E-02	n	
				2.0E-03	I					1	0.1		Diuron	330-54-1	1.3E+02	n	1.6E+03	n					3.6E+01	n		1.5E-02	n	
				2.0E-02	O					1	0.1		Dodine	2439-10-3	1.3E+03	n	1.6E+04	n					4.0E+02	n		2.1E+00	n	
				5.0E-02	O			V		1			EPTC	759-94-4	3.9E+03	n	5.8E+04	n					7.5E+02	n		4.0E-01	n	
				6.0E-03	I			V		1			Endosulfan	115-29-7	4.7E+02	n	7.0E+03	n					1.0E+02	n		1.4E+00	n	
				6.0E-03	P					1	0.1		Endosulfan Sulfate	1031-07-8	3.8E+02	n	4.9E+03	n					1.1E+02	n		2.1E+00	n	
				2.0E-02	I					1	0.1		Endothall	145-73-3	1.3E+03	n	1.6E+04	n					3.8E+02	n	1.0E+02	9.1E-02	n	2.4E-02
				3.0E-04	I					1	0.1		Endrin	72-20-8	1.9E+01	n	2.5E+02	n					2.3E+00	n	2.0E+00	9.2E-02	n	8.1E-02

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels										Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
9.9E-03	I	1.2E-06	I	6.0E-03	P	1.0E-03	I	V		1		1.1E+04	Epichlorohydrin	106-89-8	1.9E+01	n	8.2E+01	n	1.0E+00	n	4.4E+00	n	2.0E+00	n		4.5E-04	n	
						2.0E-02	I	V		1		1.5E+04	Epoxybutane, 1,2-	106-88-7	1.6E+02	n	6.7E+02	n	2.1E+01	n	8.8E+01	n	4.2E+01	n		9.2E-03	n	
				4.0E-02	P					1	0.1		Ethanol, 2-(2-methoxyethoxy)-	111-77-3	2.5E+03	n	3.3E+04	n					8.0E+02	n		1.6E-01	n	
				5.0E-03	I					1	0.1		Ethephon	16672-87-0	3.2E+02	n	4.1E+03	n					1.0E+02	n		2.1E-02	n	
				5.0E-04	I					1	0.1		Ethion	563-12-2	3.2E+01	n	4.1E+02	n					4.3E+00	n		8.5E-03	n	
				1.0E-01	P	6.0E-02	P	V		1		2.4E+04	Ethoxyethanol Acetate, 2-	111-15-9	2.6E+03	n	1.4E+04	n	6.3E+01	n	2.6E+02	n	1.2E+02	n		2.5E-02	n	
				9.0E-02	P	4.0E-02	P	V		1		1.1E+05	Ethoxyethanol, 2-	110-80-5	2.6E+03	n	1.5E+04	n	4.2E+01	n	1.8E+02	n	8.0E+01	n		1.6E-02	n	
				7.0E-01	P	7.0E-02	P	V		1		1.1E+04	Ethyl Acetate	141-78-6	6.2E+02	n	2.6E+03	n	7.3E+01	n	3.1E+02	n	1.4E+02	n		3.1E-02	n	
				5.0E-03	P	8.0E-03	P	V		1		2.5E+03	Ethyl Acrylate	140-88-5	4.7E+01	n	2.1E+02	n	8.3E+00	n	3.5E+01	n	1.4E+01	n		3.2E-03	n	
						4.0E+00	P	V		1		2.1E+03	Ethyl Chloride (Chloroethane)	75-00-3	5.4E+03	ns	2.3E+04	ns	4.2E+03	n	1.8E+04	n	8.3E+03	n		2.4E+00	n	
				2.0E-01	I			V		1		1.0E+04	Ethyl Ether	60-29-7	1.6E+04	ns	2.3E+05	nms					3.9E+03	n		8.8E-01	n	
						3.0E-01	P	V		1		1.1E+03	Ethyl Methacrylate	97-63-2	1.8E+03	ns	7.6E+03	ns	3.1E+02	n	1.3E+03	n	6.3E+02	n		1.5E-01	n	
		8.0E-08	I	1.0E+00	I	4.0E+01	I	V		1			Ethyl Tertiary Butyl Ether (ETBE)	637-92-3	1.3E+02	c	5.6E+02	c	3.5E+01	c	1.5E+02	c	7.0E+01	c		1.7E-02	c	
				1.0E-05	I					1	0.1		Ethyl-p-nitrophenyl Phosphonate	2104-64-5	6.3E-01	n	8.2E+00	n					8.9E-02	n		2.8E-03	n	
1.1E-02	C	2.5E-06	C	5.0E-02	P	1.0E+00	I	V		1		4.8E+02	Ethylbenzene	100-41-4	5.8E+00	c	2.5E+01	c	1.1E+00	c	4.9E+00	c	1.5E+00	c	7.0E+02	1.7E-03	c	7.8E-01
				7.0E-02	P					1	0.1		Ethylene Cyanohydrin	109-78-4	4.4E+03	n	5.7E+04	n					1.4E+03	n		2.8E-01	n	
				9.0E-02	P			V		1		1.9E+05	Ethylene Diamine	107-15-3	7.0E+03	n	1.1E+05	nm					1.8E+03	n		4.1E-01	n	
				8.0E-01	A	4.0E-01	C			1	0.1		Ethylene Glycol	107-21-1	5.1E+04	n	6.6E+05	nm	4.2E+02	n	1.8E+03	n	1.6E+04	n		3.2E+00	n	
				1.0E-01	I	1.6E+00	I			1	0.1		Ethylene Glycol Monobutyl Ether	111-76-2	6.3E+03	n	8.2E+04	n	1.7E+03	n	7.0E+03	n	2.0E+03	n		4.1E-01	n	
3.1E-01	C	3.0E-03	I			3.0E-02	C	V	M	1		1.2E+05	Ethylene Oxide	75-21-8	2.0E-03	c	2.5E-02	c	3.4E-04	c	4.1E-03	c	6.7E-04	c		1.4E-07	c	
4.5E-02	C	1.3E-05	C	8.0E-05	I					1	0.1		Ethylene Thiourea	96-45-7	5.1E+00	n	5.1E+01	c**	2.2E-01	c	9.4E-01	c	1.6E+00	n		3.6E-04	n	
6.5E+01	C	1.9E-02	C					V		1		1.5E+05	Ethyleneimine	151-56-4	2.7E-03	c	1.2E-02	c	1.5E-04	c	6.5E-04	c	2.4E-04	c		5.2E-08	c	
				3.0E+00	I					1	0.1		Ethylphthalyl Ethyl Glycolate	84-72-0	1.9E+05	nm	2.5E+06	nm					5.8E+04	n		1.3E+02	n	
				2.5E-04	I					1	0.1		Fenamiphos	22224-92-6	1.6E+01	n	2.1E+02	n					4.4E+00	n		4.3E-03	n	
				2.5E-02	I					1	0.1		Fenpropathrin	39515-41-8	1.6E+03	n	2.1E+04	n					6.4E+01	n		2.9E+00	n	
				2.5E-02	I					1	0.1		Fenvalerate	51630-58-1	1.6E+03	n	2.1E+04	n					5.0E+02	n		3.2E+02	n	
				1.3E-02	I					1	0.1		Fluometuron	2164-17-2	8.2E+02	n	1.1E+04	n					2.4E+02	n		1.9E-01	n	
				4.0E-02	C	1.3E-02	C			1			Fluoride	16984-48-8	3.1E+03	n	4.7E+04	n	1.4E+01	n	5.7E+01	n	8.0E+02	n	4.0E+03	1.2E+02	n	6.0E+02
				6.0E-02	I	1.3E-02	C			1			Fluorine (Soluble Fluoride)	7782-41-4	4.7E+03	n	7.0E+04	n	1.4E+01	n	5.7E+01	n	1.2E+03	n	4.0E+03	1.8E+02	n	6.0E+02
				8.0E-02	I					1	0.1		Fluridone	59756-60-4	5.1E+03	n	6.6E+04	n					1.4E+03	n		1.6E+02	n	
				4.0E-02	O					1	0.1		Flurprimidol	56425-91-3	2.5E+03	n	3.3E+04	n					6.9E+02	n		3.1E+00	n	
				2.0E-03	O					1	0.1		Flusilazole	85509-19-9	1.3E+02	n	1.6E+03	n					3.1E+01	n		5.1E+00	n	
				5.0E-01	O					1	0.1		Flutolanil	66332-96-5	3.2E+04	n	4.1E+05	nm					7.9E+03	n		4.2E+01	n	
				1.0E-02	I					1	0.1		Fluvalinate	69409-94-5	6.3E+02	n	8.2E+03	n					2.0E+02	n		2.9E+02	n	
				9.0E-02	O					1	0.1		Folpet	133-07-3	5.7E+03	n	7.4E+04	n					1.6E+03	n		3.9E-01	n	
				1.0E-02	O					1	0.1		Fomesafen	72178-02-0	6.3E+02	n	8.2E+03	n					1.9E+02	n		6.3E-01	n	
				2.0E-03	I					1	0.1		Fonofos	944-22-9	1.3E+02	n	1.6E+03	n					2.4E+01	n		4.7E-02	n	
2.1E-02	C	1.3E-05	I	2.0E-01	I	9.8E-03	A	V		1		4.2E+04	Formaldehyde	50-00-0	1.1E+01	c*	5.0E+01	c*	2.2E-01	c*	9.4E-01	c*	3.9E-01	c*		7.8E-05	c*	
				9.0E-01	P	3.0E-04	X	V		1		1.1E+05	Formic Acid	64-18-6	2.9E+01	n	1.2E+02	n	3.1E-01	n	1.3E+00	n	6.3E-01	n		1.3E-04	n	
				2.5E+00	O					1	0.1		Fosetyl-AL	39148-24-8	1.6E+05	nm	2.1E+06	nm					5.0E+04	n		6.6E+02	n	
													Furans																
				1.0E-03	X			V		1			~Dibenzofuran	132-64-9	7.8E+01	n	1.2E+03	n					7.9E+00	n		1.5E-01	n	
				1.0E-03	I			V		1		6.2E+03	~Furan	110-00-9	7.8E+01	n	1.2E+03	n					1.9E+01	n		7.3E-03	n	
				9.0E-01	I	2.0E+00	I	V		1		1.7E+05	~Tetrahydrofuran	109-99-9	1.8E+04	n	9.5E+04	n	2.1E+03	n	8.8E+03	n	3.4E+03	n		7.5E-01	n	
3.8E+00	H									1	0.1		Furazolidone	67-45-8	1.4E-01	c	6.0E-01	c					2.0E-02	c		3.9E-05	c	
				3.0E-03	I	5.0E-02	H	V		1		1.0E+04	Furfural	98-01-1	2.1E+02	n	2.6E+03	n	5.2E+01	n	2.2E+02	n	3.8E+01	n		8.1E-03	n	
1.5E+00	C	4.3E-04	C							1	0.1		Furium	531-82-8	3.6E-01	c	1.5E+00	c	6.5E-03	c	2.9E-02	c	5.1E-02	c		6.8E-05	c	
3.0E-02	I	8.6E-06	C							1	0.1		Furmecyclox	60568-05-0	1.8E+01	c	7.7E+01	c	3.3E-01	c	1.4E+00	c	1.1E+00	c		1.2E-03	c	
				6.0E-03	O					1	0.1		Glufosinate, Ammonium	77182-82-2	3.8E+02	n	4.9E+03	n					1.2E+02	n		2.6E-02	n	
				1.0E-01	A	8.0E-05	C			1	0.1		Glutaraldehyde	111-30-8	6.0E+03	n	7.0E+04	n	8.3E-02	n	3.5E-01	n	2.0E+03	n		4.0E-01	n	
				4.0E-04	I	1.0E-03	X	V		1		1.1E+05	Glycidaldehyde	765-34-4	2.3E+01	n	2.1E+02	n	1.0E+00	n	4.4E+00	n	1.7E+00	n		3.3E-04	n	
				1.0E-01	I					1	0.1		Glyphosate	1071-83-6	6.3E+03	n	8.2E+04	n					2.0E+03	n	7.0E+02	8.8E+00	n	3.1E+00
				1.0E-02	X			V		1			Guanidine	113-00-8	7.8E+02	n	1.2E+04	n					2.0E+02	n		4.5E-02	n	
				2.0E-02	P					1	0.1		Guanidine Chloride	50-01-1	1.3E+03	n	1.6E+04	n					4.0E+02	n				
				3.0E-02	X					1	0.1		Guanidine Nitrate	506-93-4	1.9E+03	n	2.5E+04	n					6.0E+02	n		1.5E-01	n	
				5.0E-05	I					1	0.1		Haloxyfop, Methyl	69806-40-2	3.2E+00	n	4.1E+01	n					7.6E-01	n		8.4E-03	n	
4.5E+00	I	1.3E-03	I	1.0E-04	A			V		1			Heptachlor	76-44-8	1.3E-01	c*	6.3E-01	c	2.2E-03	c	9.4E-03	c	1.4E-03	c	4.0E-01	1.2E-04	c	3.3E-02
9.1E+00	I	2.6E-03	I	1.3E-05	I			V		1			Heptachlor Epoxide	1024-57-3	7.0E-02	c*	3.3E-01	c*	1.1E-03	c	4.7E-03	c	1.4E-03	c*	2.0E-01	2.8E-05	c*	4.1E-03
						3.0E-03	X	V		1		2.1E+02	Heptanal, n-	111-71-7	2.4E+01	n	1.0E+02	n	3.1E+00	n	1.3E+01	n	6.3E+00	n		1.4E-03	n	
				3.0E-04	X	4.0E-01	P	V		1		5.8E+01	Heptane, N-	142-82-5	2.2E+01	n	2.9E+02	ns	4.2E+02	n	1.8E+03	n	6.0E+00	n		4.8E-02	n	
				2.0E-03	I			V		1			Hexabromobenzene	87-82-1	1.6E+02	n	2.3E+03	n					4.0E+01	n		2.3E-01	n	
				2.0E-04	I					1	0.1		Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	1.3E+01	n	1.6E+02	n					4.0E+00	n				
1.6E+00	I	4.6E-04	I	1.0E-05	P			V		1			Hexachlorobenzene	118-74-1	2.1E-01	c**	9.6E-01	c*	6.1E-03	c	2.7E-02	c	9.8E-03	c*	1.0E+00	1.2E-04	c*	1.3E-02
7.8E-02	I	2.2E-05	I	1.0E-03	P			V		1		1.7E+01	Hexachlorobutadiene	87-68-3	1.2E+00	c*	5.3E+00	c	1.3E-01	c	5.6E-01	c	1.4E-01	c*		2.7E-04	c*	
6.3E+00	I	1.8E-03	I	8.0E-03	A					1	0.1		Hexachlorocyclohexane, Alpha-	319-84-6	8.6E-02	c	3.6E-01	c	1.6E-03	c	6.8E-03	c	7.2E-03	c		4.2E-05	c	
1.8E+00	I	5.3E-04	I							1	0.1		Hexachlorocyclohexane, Beta-	319-85-7	3.0E-01	c	1.3E+00	c	5.3E-03	c	2.3E-02	c	2.5E-02	c		1.5E-04	c	
1.1E+00	C	3.1E-04	C	1.0E-05	A					1	0.04		Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	5.7E-01	c**	2.5E+00	c**	9.1E-03	c	4.0E-02	c	4.2E-02	c**	2.0E-01	2.4E-04	c**	1.2E-03
1.8E+00	I	5.1E-04	I							1	0.1		Hexachlorocyclohexane, Technical	608-73-1	3.0E-01	c	1.3E+00	c	5.5E-03	c	2.4E-02	c	2.5E-02	c		1.5E-04	c	
				6.0E-03	I	2.0E-04	I	V		1		1.6E+01	Hexachlorocyclopentadiene	77-47-4	1.8E+00	n	7.5E+00	n	2.1E-01	n	8.8E-01	n	4.1E-01	n	5.0E+01	1.3E-03	n	1.6E-01
4.0E-02	I	1.1E-05	C	7.0E-04	I	3.0E-02	I	V		1			Hexachloroethane	67-72-1	1.8E+00	c*	8.0E+00	c*	2.6E-01	c	1.1E+00	c	3.3E-01	c*		2.0E-04	c*	
				3.0E-04	I					1	0.1		Hexachlorophene	70-30-4	1.9E+01	n	2.5E+02	n					6.0E+00	n		8.0E+00	n	
8.0E-02	I			4.0E-03	I					1	0.015		Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	8.3E+00	c*	3.8E+01	c					9.7E-01	c*		3.7E-04	c*	
						1.0E-05	I	V		1		3.4E+03	Hexamethylene Diisocyanate, 1,6-	822-06-0	3.1E+00	n	1.3E+01	n	1.0E-02	n	4.4E-02	n	2.1E-02	n		2.1E-04	n	
						4.0E-04	C			1	0.1		Hexamethylene diisocyanate biuret	4035-89-6	5.7E+05	nm	2.4E+06	nm	4.2E-01	n	1.8E+00	n						
						4.0E-04	C			1	0.1		Hexamethylene diisocyanate isocyanurate	3779-63-3	5.7E+05	nm	2.4E+06	nm	4.2E-01	n	1.8E+00	n						
				4.0E-04	P					1	0.1		Hexamethylphosphoramide	680-31-9	2.5E+01	n	3.3E+02	n					8.0E+00	n		1.8E-03	n	
		2.0E-07	X			6.0E-01	P	V		1		1.4E+02	Hexane, Commercial	E5241997	1.2E+01	c*	5.1E+01	c*	1.4E+01	c*	6.1E+01	c*	2.8E+01	c*		2.0E-01	c*	

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
						7.0E-01	I	V		1		1.4E+02	Hexane, N-	110-54-3	6.1E+02	ns	2.5E+03	ns	7.3E+02	n	3.1E+03	n	1.5E+03	n		1.0E+01	n	
				2.0E+00	P					1	0.1		Hexanedioic Acid	124-04-9	1.3E+05	nm	1.6E+06	nm					4.0E+04	n		9.9E+00	n	
9.5E-03	P			7.0E-02	P	4.0E-04	P	V		1		2.7E+02	Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)	104-76-7	1.5E+01	n	6.3E+01	n	4.2E-01	n	1.8E+00	n	8.3E-01	n		2.3E-04	n	
				5.0E-03	I	3.0E-02	I	V		1		3.3E+03	Hexanone, 2-	591-78-6	2.0E+02	n	1.3E+03	n	3.1E+01	n	1.3E+02	n	3.8E+01	n		8.8E-03	n	
				3.3E-02	I					1	0.1		Hexazinone	51235-04-2	2.1E+03	n	2.7E+04	n					6.4E+02	n		3.0E-01	n	
				2.5E-02	I					1	0.1		Hexythiazox	78587-05-0	1.6E+03	n	2.1E+04	n					1.1E+02	n		5.0E-01	n	
				1.7E-02	O					1	0.1		Hydramethylnon	67485-29-4	1.1E+03	n	1.4E+04	n					3.4E+02	n		1.2E+05	n	
3.0E+00	I	4.9E-03	I			3.0E-05	P	V		1		1.1E+05	Hydrazine	302-01-2	3.2E-02	c*	1.4E-01	c*	5.7E-04	c*	2.5E-03	c*	1.1E-03	c*		2.2E-07	c*	
3.0E+00	I	4.9E-03	I							1			Hydrazine Sulfate	10034-93-2	2.3E-01	c	1.1E+00	c	5.7E-04	c	2.5E-03	c	2.6E-02	c				
						2.0E-02	I	V		1			Hydrogen Chloride	7647-01-0	2.8E+07	nm	1.2E+08	nm	2.1E+01	n	8.8E+01	n	4.2E+01	n				
				4.0E-02	C	1.4E-02	C	V		1			Hydrogen Fluoride	7664-39-3	3.1E+03	n	4.7E+04	n	1.5E+01	n	6.1E+01	n	2.8E+01	n				
						2.0E-03	I	V		1			Hydrogen Sulfide	7783-06-4	2.8E+06	nm	1.2E+07	nm	2.1E+00	n	8.8E+00	n	4.2E+00	n				
6.0E-02	P			4.0E-02	P					1	0.1		Hydroquinone	123-31-9	9.0E+00	c	3.8E+01	c					1.3E+00	c		8.7E-04	c	
6.1E-02	O			1.1E-01	O					1	0.1		Imazalil	35554-44-0	8.9E+00	c	3.8E+01	c					9.0E-01	c		1.5E-02	c	
				2.5E-01	I					1	0.1		Imazaquin	81335-37-7	1.6E+04	n	2.1E+05	nm					4.9E+03	n		2.4E+01	n	
				2.5E+00	O					1	0.1		Imazethapyr	81335-77-5	1.6E+05	nm	2.1E+06	nm					4.7E+04	n		4.1E+01	n	
				1.0E-02	A					1			Iodine	7553-56-2	7.8E+02	n	1.2E+04	n					2.0E+02	n		1.2E+01	n	
				4.0E-02	I					1	0.1		Iprodione	36734-19-7	2.5E+03	n	3.3E+04	n					7.4E+02	n		2.2E-01	n	
				7.0E-01	P					1			Iron	7439-89-6	5.5E+04	n	8.2E+05	nm					1.4E+04	n		3.5E+02	n	
				3.0E-01	I			V		1		1.0E+04	Isobutyl Alcohol	78-83-1	2.3E+04	ns	3.5E+05	nms					5.9E+03	n		1.2E+00	n	
9.5E-04	I			2.0E-01	I	2.0E+00	C			1	0.1		Isophorone	78-59-1	5.7E+02	c*	2.4E+03	c*	2.1E+03	n	8.8E+03	n	7.8E+01	c*		2.6E-02	c*	
				1.5E-02	I			V		1			Isopropalin	33820-53-0	1.2E+03	n	1.8E+04	n					4.0E+01	n		9.2E-01	n	
				2.0E+00	P	2.0E-01	P	V		1		1.1E+05	Isopropanol	67-63-0	5.6E+03	n	2.4E+04	n	2.1E+02	n	8.8E+02	n	4.1E+02	n		8.4E-02	n	
				1.0E-01	I					1	0.1		Isopropyl Methyl Phosphonic Acid	1832-54-8	6.3E+03	n	8.2E+04	n					2.0E+03	n		4.3E-01	n	
				5.0E-02	I					1	0.1		Isoxaben	82558-50-7	3.2E+03	n	4.1E+04	n					7.3E+02	n		2.0E+00	n	
						3.0E-01	A	V		1			JP-7	E1737665	4.3E+08	nm	1.8E+09	nm	3.1E+02	n	1.3E+03	n	6.3E+02	n				
				8.0E-03	O					1	0.1		Lactofen	77501-63-4	5.1E+02	n	6.6E+03	n					1.0E+02	n		4.6E+00	n	
				2.0E-04	X					1	0.1		Lactonitrile	78-97-7	1.3E+01	n	1.6E+02	n					4.0E+00	n		8.1E-04	n	
				5.0E-05	P					1			Lanthanum	7439-91-0	3.9E+00	n	5.8E+01	n					1.0E+00	n				
				2.1E-05	P					1	0.1		Lanthanum Acetate Hydrate	100587-90-4	1.3E+00	n	1.7E+01	n					4.2E-01	n				
				1.9E-05	P					1			Lanthanum Chloride Heptahydrate	10025-84-0	1.5E+00	n	2.2E+01	n					3.7E-01	n				
				2.8E-05	P					1			Lanthanum Chloride, Anhydrous	10099-58-8	2.2E+00	n	3.3E+01	n					5.7E-01	n				
				1.6E-05	P					1			Lanthanum Nitrate Hexahydrate	10277-43-7	1.3E+00	n	1.9E+01	n					3.2E-01	n				
													Lead Compounds															
8.5E-03	C	1.2E-05	C							1			~Lead Phosphate	7446-27-7	8.2E+01	c	3.8E+02	c	2.3E-01	c	1.0E+00	c	9.1E+00	c				
2.1E-01	C	8.0E-05	C							1	0.1		~Lead acetate	301-04-2	2.6E+00	c	1.1E+01	c	3.5E-02	c	1.5E-01	c	3.7E-01	c		7.5E-05	c	
										1			~Lead and Compounds	7439-92-1	4.0E+02	G	8.0E+02	G	1.5E-01	G			1.5E+01	G	1.5E+01			1.4E+01
3.8E-02	C	1.1E-05	C							1	0.1		~Lead subacetate	1335-32-6	1.4E+01	c	6.0E+01	c	2.6E-01	c	1.1E+00	c	2.1E+00	c		4.5E-04	c	
				1.0E-07	I			V		1		2.4E+00	~Tetraethyl Lead	78-00-2	7.8E-03	n	1.2E-01	n					1.3E-03	n		4.7E-06	n	
				5.0E-06	P			V		1		3.8E+02	Lewisite	541-25-3	3.9E-01	n	5.8E+00	n					9.0E-02	n		3.8E-05	n	
				7.7E-03	O					1	0.1		Linuron	330-55-2	4.9E+02	n	6.3E+03	n					1.3E+02	n		1.1E-01	n	
				2.0E-03	P					1			Lithium	7439-93-2	1.6E+02	n	2.3E+03	n					4.0E+01	n		1.2E+01	n	
				5.0E-04	I					1	0.1		MCPA	94-74-6	3.2E+01	n	4.1E+02	n					7.5E+00	n		2.0E-03	n	
				4.4E-03	O					1	0.1		MCPB	94-81-5	2.8E+02	n	3.6E+03	n					6.5E+01	n		2.6E-02	n	
				1.0E-03	I					1	0.1		MCPP	93-65-2	6.3E+01	n	8.2E+02	n					1.6E+01	n		4.7E-03	n	
				2.0E-02	I					1	0.1		Malathion	121-75-5	1.3E+03	n	1.6E+04	n					3.9E+02	n		1.0E-01	n	
				1.0E-01	I	7.0E-04	C			1	0.1		Maleic Anhydride	108-31-6	6.3E+03	n	8.0E+04	n	7.3E-01	n	3.1E+00	n	1.9E+03	n		3.8E-01	n	
				5.0E-01	I					1	0.1		Maleic Hydrazide	123-33-1	3.2E+04	n	4.1E+05	nm					1.0E+04	n		2.1E+00	n	
				1.0E-04	P					1	0.1		Malononitrile	109-77-3	6.3E+00	n	8.2E+01	n					2.0E+00	n		4.1E-04	n	
				3.0E-02	H					1	0.1		Mancozeb	8018-01-7	1.9E+03	n	2.5E+04	n					5.4E+02	n		7.6E-01	n	
				5.0E-03	I					1	0.1		Maneb	12427-38-2	3.2E+02	n	4.1E+03	n					9.8E+01	n		1.4E-01	n	
				1.4E-01	I	5.0E-05	I			1			Manganese (Diet)	7439-96-5					5.2E-02	n	2.2E-01	n						
				2.4E-02	G	5.0E-05	I			0.04			Manganese (Non-diet)	7439-96-5	1.8E+03	n	2.6E+04	n	5.2E-02	n	2.2E-01	n	4.3E+02	n		2.8E+01	n	
				9.0E-05	H					1	0.1		Mephosfolan	950-10-7	5.7E+00	n	7.4E+01	n					1.8E+00	n		2.6E-03	n	
				3.0E-02	I					1	0.1		Mepiquat Chloride	24307-26-4	1.9E+03	n	2.5E+04	n					6.0E+02	n		2.0E-01	n	
1.1E-02	P			4.0E-03	P					1	0.1		Mercaptobenzothiazole, 2-	149-30-4	4.9E+01	c**	2.1E+02	c*					6.3E+00	c*		1.8E-02	c*	
													Mercury Compounds															
				3.0E-04	I	3.0E-04	G			0.07			~Mercuric Chloride (and other Mercury salts)	7487-94-7	2.3E+01	n	3.5E+02	n	3.1E-01	n	1.3E+00	n	5.7E+00	n	2.0E+00			
						3.0E-04	I	V		1		3.1E+00	~Mercury (elemental)	7439-97-6	1.1E+01	ns	4.6E+01	ns	3.1E-01	n	1.3E+00	n	6.3E-01	n	2.0E+00	3.3E-02	n	1.0E-01
				1.0E-04	I					1			~Methyl Mercury	22967-92-6	7.8E+00	n	1.2E+02	n					2.0E+00	n		1.4E+01	n	
				8.0E-05	I					1	0.1		~Phenylmercuric Acetate	62-38-4	5.1E+00	n	6.6E+01	n					1.6E+00	n		5.0E-04	n	
				3.0E-05	I			V		1			Merphos	150-50-5	2.3E+00	n	3.5E+01	n					6.0E-01	n		5.9E-02	n	
				6.0E-02	I					1	0.1		Metalaxyl	57837-19-1	3.8E+03	n	4.9E+04	n					1.2E+03	n		3.3E-01	n	
				1.0E-04	I	3.0E-02	P	V		1		4.6E+03	Methacrylonitrile	126-98-7	7.5E+00	n	1.0E+02	n	3.1E+01	n	1.3E+02	n	1.9E+00	n		4.3E-04	n	
				5.0E-05	I					1	0.1		Methamidophos	10265-92-6	3.2E+00	n	4.1E+01	n					1.0E+00	n		2.1E-04	n	
				2.0E+00	I	2.0E+01	I	V		1		1.1E+05	Methanol	67-56-1	1.2E+05	nms	1.2E+06	nms	2.1E+04	n	8.8E+04	n	2.0E+04	n		4.1E+00	n	
				1.5E-03	O					1	0.1		Methidathion	950-37-8	9.5E+01	n	1.2E+03	n					2.9E+01	n		7.1E-03	n	
				2.5E-02	I					1	0.1		Methomyl	16752-77-5	1.6E+03	n	2.1E+04	n					5.0E+02	n		1.1E-01	n	
4.9E-02	C									1	0.1		Methoxy-5-nitroaniline, 2-	99-59-2	1.1E+01	c	4.7E+01	c					1.5E+00	c		5.3E-04	c	
				5.0E-03	I					1	0.1		Methoxychlor	72-43-5	3.2E+02	n	4.1E+03	n					3.7E+01	n	4.0E+01	2.0E+00	n	2.2E+00
				8.0E-03	P	1.0E-03	P	V		1		1.2E+05	Methoxyethanol Acetate, 2-	110-49-6	1.1E+02	n	5.1E+02	n	1.0E+00	n	4.4E+00	n	2.1E+00	n		4.2E-04	n	
				5.0E-03	P	7.0E-03	P	V		1		1.1E+05	Methoxyethanol, 2-	109-86-4	2.6E+02	n	2.0E+03	n	7.3E+00	n	3.1E+01	n	1.3E+01	n		2.6E-03	n	
				1.0E+00	X			V		1		2.9E+04	Methyl Acetate	79-20-9	7.8E+04	ns	1.2E+06	nms					2.0E+04	n		4.1E+00	n	
						2.0E-02	P	V		1		6.8E+03	Methyl Acrylate	96-33-3	1.5E+02	n	6.1E+02	n	2.1E+01	n	8.8E+01	n	4.2E+01	n		8.9E-03	n	
				6.0E-01	I	5.0E+00	I	V		1		2.8E+04	Methyl Ethyl Ketone (2-Butanone)	78-93-3	2.7E+04	n	1.9E+05	nms	5.2E+03	n	2.2E+04	n	5.6E+03	n		1.2E+00	n	
		1.0E-03	X	1.0E-03	P	2.0E-05	X	V		1		1.8E+05	Methyl Hydrazine	60-34-4	1.4E-01	c**	6.2E-01	c**	2.8E-03	c**	1.2E-02	c**	5.6E-03	c**		1.3E-06	c**	
						3.0E+00	I	V		1		3.4E+03	Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	3.3E+04	ns	1.4E+05	nms	3.1E+03	n	1.3E+04	n	6.3E+03	n		1.4E+00	n	

TR=1E-06
THQ=1.0

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Toxicity and Chemical-specific Information												Contaminant		Screening Levels											Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD$_o$ (mg/kg-day)	key	RfC$_i$ (mg/m^3)	key	vol	mutagen	GIABS	ABS$_d$	C$_{sat}$ (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
						1.0E-03	C	V		1		1.0E+04	Methyl Isocyanate	624-83-9	4.6E+00	n	1.9E+01	n	1.0E+00	n	4.4E+00	n	2.1E+00	n		5.9E-04	n	
				1.4E+00	I	7.0E-01	I	V		1		2.4E+03	Methyl Methacrylate	80-62-6	4.4E+03	ns	1.9E+04	ns	7.3E+02	n	3.1E+03	n	1.4E+03	n		3.0E-01	n	
				2.5E-04	I					1	0.1		Methyl Parathion	298-00-0	1.6E+01	n	2.1E+02	n					4.5E+00	n		7.4E-03	n	
				6.0E-02	X					1	0.1		Methyl Phosphonic Acid	993-13-5	3.8E+03	n	4.9E+04	n					1.2E+03	n		2.4E-01	n	
				6.0E-03	H	4.0E-02	H	V		1		3.9E+02	Methyl Styrene (Mixed Isomers)	25013-15-4	3.2E+02	n	2.6E+03	ns	4.2E+01	n	1.8E+02	n	2.3E+01	n		3.8E-02	n	
9.9E-02	C	2.8E-05	C							1	0.1		Methyl methanesulfonate	66-27-3	5.5E+00	c	2.3E+01	c	1.0E-01	c	4.4E-01	c	7.9E-01	c		1.6E-04	c	
1.8E-03	C	2.6E-07	C			3.0E+00	I	V		1		8.9E+03	Methyl tert-Butyl Ether (MTBE)	1634-04-4	4.7E+01	c	2.1E+02	c	1.1E+01	c	4.7E+01	c	1.4E+01	c		3.2E-03	c	
				3.0E-04	X					1	0.1		Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	1.9E+01	n	2.5E+02	n					6.0E+00	n		3.6E-03	n	
						3.0E+00	X	V		1		2.5E+03	Methyl-2-Pentanol, 4-	108-11-2	5.4E+04	ns	2.3E+05	nms	3.1E+03	n	1.3E+04	n	6.3E+03	n		1.4E+00	n	
9.0E-03	P			2.0E-02	X					1	0.1		Methyl-5-Nitroaniline, 2-	99-55-8	6.0E+01	c*	2.6E+02	c*					8.2E+00	c*		4.6E-03	c*	
8.3E+00	C	2.4E-03	C							1	0.1		Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	6.5E-02	c	2.8E-01	c	1.2E-03	c	5.1E-03	c	9.4E-03	c		3.2E-06	c	
1.3E-01	C	3.7E-05	C							1	0.1		Methylaniline Hydrochloride, 2-	636-21-5	4.2E+00	c	1.8E+01	c	7.6E-02	c	3.3E-01	c	6.0E-01	c		2.6E-04	c	
				1.0E-02	A					1	0.1		Methylarsonic acid	124-58-3	6.3E+02	n	8.2E+03	n					2.0E+02	n		5.8E-02	n	
				2.0E-04	X					1	0.1		Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	1.3E+01	n	1.6E+02	n					4.0E+00	n				
1.0E-01	X			3.0E-04	X					1	0.1		Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	5.4E+00	c**	2.3E+01	c*					7.8E-01	c**				
2.2E+01	C	6.3E-03	C						M	1	0.1		Methylcholanthrene, 3-	56-49-5	5.5E-03	c	1.0E-01	c	1.6E-04	c	1.9E-03	c	1.1E-03	c		2.2E-03	c	
2.0E-03	I	1.0E-08	I	6.0E-03	I	6.0E-01	I	V	M	1		3.3E+03	Methylene Chloride	75-09-2	5.7E+01	c**	1.0E+03	c**	1.0E+02	c**	1.2E+03	c**	1.1E+01	c**	5.0E+00	2.9E-03	c**	1.3E-03
1.0E-01	P	4.3E-04	C	2.0E-03	P				M	1	0.1		Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	1.2E+00	c	2.3E+01	c*	2.4E-03	c	2.9E-02	c	1.6E-01	c		1.8E-03	c	
4.6E-02	I	1.3E-05	C							1	0.1		Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	1.2E+01	c	5.0E+01	c	2.2E-01	c	9.4E-01	c	7.0E-01	c		3.9E-03	c	
1.6E+00	C	4.6E-04	C			2.0E-02	C			1	0.1		Methylenebisbenzenamine, 4,4'-	101-77-9	3.4E-01	c	1.4E+00	c	6.1E-03	c	2.7E-02	c	4.7E-02	c		2.1E-04	c	
						6.0E-04	I			1	0.1		Methylenediphenyl Diisocyanate	101-68-8	8.5E+05	nm	3.6E+06	nm	6.3E-01	n	2.6E+00	n							
				7.0E-02	H			V		1		5.0E+02	Methylstyrene, Alpha-	98-83-9	5.5E+03	ns	8.2E+04	ns					7.8E+02	n		1.2E+00	n	
				1.5E-01	I					1	0.1		Metolachlor	51218-45-2	9.5E+03	n	1.2E+05	nm					2.7E+03	n		3.2E+00	n	
				2.5E-02	I					1	0.1		Metribuzin	21087-64-9	1.6E+03	n	2.1E+04	n					4.9E+02	n		1.5E-01	n	
				2.5E-01	I					1	0.1		Metsulfuron-methyl	74223-64-6	1.6E+04	n	2.1E+05	nm					4.9E+03	n		1.9E+00	n	
		4.5E-06	X	1.0E-02	X	1.0E-01	P	V		1		6.9E+00	Midrange Aliphatic Hydrocarbon Streams	E1790669	6.5E-01	c	2.8E+00	c	6.2E-01	c	2.7E+00	c	1.2E+00	c*		1.8E-02	c*	
				3.0E+00	P			V		1		3.4E-01	Mineral oils	8012-95-1	2.3E+05	nms	3.5E+06	nms					6.0E+04	n		2.4E+03	n	
1.8E+01	C	5.1E-03	C	2.0E-04	I			V		1			Mirex	2385-85-5	3.6E-02	c	1.7E-01	c	5.5E-04	c	2.4E-03	c	8.8E-04	c		6.3E-04	c	
				2.0E-03	I					1	0.1		Molinate	2212-67-1	1.3E+02	n	1.6E+03	n					3.0E+01	n		1.7E-02	n	
				5.0E-03	I	2.0E-03	A			1			Molybdenum	7439-98-7	3.9E+02	n	5.8E+03	n	2.1E+00	n	8.8E+00	n	1.0E+02	n		2.0E+00	n	
				1.0E-01	I					1			Monochloramine	10599-90-3	7.8E+03	n	1.2E+05	nm					2.0E+03	n	4.0E+03(G)			
				2.0E-03	P					1	0.1		Monomethylaniline	100-61-8	1.3E+02	n	1.6E+03	n					3.8E+01	n		1.4E-02	n	
				2.5E-02	I					1	0.1		Myclobutanil	88671-89-0	1.6E+03	n	2.1E+04	n					4.5E+02	n		5.6E+00	n	
				3.0E-04	X					1	0.1		N,N'-Diphenyl-1,4-benzenediamine	74-31-7	1.9E+01	n	2.5E+02	n					3.6E+00	n		3.7E-01	n	
				2.0E-03	I			V		1			Naled	300-76-5	1.6E+02	n	2.3E+03	n					4.0E+01	n		1.8E-02	n	
				3.0E-02	X	1.0E-01	P	V		1			Naphtha, High Flash Aromatic (HFAN)	64742-95-6	2.3E+03	n	3.5E+04	n	1.0E+02	n	4.4E+02	n	1.5E+02	n				
1.8E+00	C	0.0E+00	C							1	0.1		Naphthylamine, 2-	91-59-8	3.0E-01	c	1.3E+00	c					3.9E-02	c		2.0E-04	c	
				1.2E-01	O					1	0.1		Napropamide	15299-99-7	7.6E+03	n	9.8E+04	n					2.0E+03	n		1.3E+01	n	
		2.6E-04	C	1.1E-02	C	1.4E-05	C			1	0.1		Nickel Acetate	373-02-4	6.7E+02	n	8.1E+03	n	1.1E-02	c**	4.7E-02	c**	2.2E+02	n		4.5E-02	n	
		2.6E-04	C	1.1E-02	C	1.4E-05	C			1	0.1		Nickel Carbonate	3333-67-3	6.7E+02	n	8.1E+03	n	1.1E-02	c**	4.7E-02	c**	2.2E+02	n				
		2.6E-04	C	1.1E-02	C	1.4E-05	C	V		1			Nickel Carbonyl	13463-39-3	8.2E+02	n	1.1E+04	n	1.1E-02	c**	4.7E-02	c**	2.2E-02	c**				
		2.6E-04	C	1.1E-02	C	1.4E-05	C			0.04			Nickel Hydroxide	12054-48-7	8.2E+02	n	1.1E+04	n	1.1E-02	c**	4.7E-02	c**	2.0E+02	n				
		2.6E-04	C	1.1E-02	C	2.0E-05	C			0.04			Nickel Oxide	1313-99-1	8.4E+02	n	1.2E+04	n	1.1E-02	c**	4.7E-02	c**	2.0E+02	n				
		2.4E-04	I	1.1E-02	C	1.4E-05	C			0.04			Nickel Refinery Dust	E715532	8.2E+02	n	1.1E+04	n	1.2E-02	c**	5.1E-02	c**	2.2E+02	n		3.2E+01	n	
		2.6E-04	C	2.0E-02	I	9.0E-05	A			0.04			Nickel Soluble Salts	7440-02-0	1.5E+03	n	2.2E+04	n	1.1E-02	c**	4.7E-02	c**	3.9E+02	n		2.6E+01	n	
1.7E+00	C	4.8E-04	I	1.1E-02	C	1.4E-05	C			0.04			Nickel Subsulfide	12035-72-2	4.1E-01	c	1.9E+00	c	5.8E-03	c**	2.6E-02	c**	4.5E-02	c				
9.1E-01	C	2.6E-04	C	1.1E-02	C	1.4E-05	C			1	0.1		Nickelocene	1271-28-9	6.0E-01	c	2.5E+00	c	1.1E-02	c**	4.7E-02	c**	8.6E-02	c				
				1.6E+00	I					1			Nitrate (measured as nitrogen)	14797-55-8	1.3E+05	nm	1.9E+06	nm					3.2E+04	n	1.0E+04			
										1			Nitrate + Nitrite (measured as nitrogen)	E701177											1.0E+04			
				1.0E-01	I					1			Nitrite (measured as nitrogen)	14797-65-0	7.8E+03	n	1.2E+05	nm					2.0E+03	n	1.0E+03			
				1.0E-02	X	5.0E-05	X			1	0.1		Nitroaniline, 2-	88-74-4	6.3E+02	n	8.0E+03	n	5.2E-02	n	2.2E-01	n	1.9E+02	n		8.0E-02	n	
2.0E-02	P			4.0E-03	P	6.0E-03	P			1	0.1		Nitroaniline, 4-	100-01-6	2.7E+01	c**	1.1E+02	c*	6.3E+00	n	2.6E+01	n	3.8E+00	c*		1.6E-03	c*	
		4.0E-05	I	2.0E-03	I	9.0E-03	I	V		1		3.1E+03	Nitrobenzene	98-95-3	5.1E+00	c*	2.2E+01	c*	7.0E-02	c	3.1E-01	c	1.4E-01	c*		9.2E-05	c*	
				3.0E+03	P					1	0.1		Nitrocellulose	9004-70-0	1.9E+08	nm	2.5E+09	nm					6.0E+07	n		1.3E+04	n	
				7.0E-02	H					1	0.1		Nitrofurantoin	67-20-9	4.4E+03	n	5.7E+04	n					1.4E+03	n		6.1E-01	n	
1.3E+00	C	3.7E-04	C							1	0.1		Nitrofurazone	59-87-0	4.2E-01	c	1.8E+00	c	7.6E-03	c	3.3E-02	c	6.0E-02	c		5.4E-05	c	
1.7E-02	P			1.0E-04	P					1	0.1		Nitroglycerin	55-63-0	6.3E+00	n	8.2E+01	n					2.0E+00	n		8.5E-04	n	
				1.0E-01	I					1	0.1		Nitroguanidine	556-88-7	6.3E+03	n	8.2E+04	n					2.0E+03	n		4.8E-01	n	
		8.8E-06	P			5.0E-03	P	V		1		1.8E+04	Nitromethane	75-52-5	5.4E+00	c*	2.4E+01	c*	3.2E-01	c*	1.4E+00	c*	6.4E-01	c*		1.4E-04	c*	
		5.8E-04	X			2.0E-02	I	V		1		4.9E+03	Nitropropane, 2-	79-46-9	6.4E-02	c	2.8E-01	c	4.8E-03	c	2.1E-02	c	9.7E-03	c		2.5E-06	c	
2.7E+01	C	7.7E-03	C						M	1	0.1		Nitroso-N-ethylurea, N-	759-73-9	4.5E-03	c	8.5E-02	c	1.3E-04	c	1.6E-03	c	9.2E-04	c		2.2E-07	c	
1.2E+02	C	3.4E-02	C						M	1	0.1		Nitroso-N-methylurea, N-	684-93-5	1.0E-03	c	1.9E-02	c	3.0E-05	c	3.6E-04	c	2.1E-04	c		4.6E-08	c	
5.4E+00	I	1.6E-03	I					V		1			Nitroso-di-N-butylamine, N-	924-16-3	9.9E-02	c	4.6E-01	c	1.8E-03	c	7.7E-03	c	2.7E-03	c		5.5E-06	c	
7.0E+00	I	2.0E-03	C							1	0.1		Nitroso-di-N-propylamine, N-	621-64-7	7.8E-02	c	3.3E-01	c	1.4E-03	c	6.1E-03	c	1.1E-02	c		8.1E-06	c	
2.8E+00	I	8.0E-04	C							1	0.1		Nitrosodiethanolamine, N-	1116-54-7	1.9E-01	c	8.2E-01	c	3.5E-03	c	1.5E-02	c	2.8E-02	c		5.6E-06	c	
1.5E+02	I	4.3E-02	I						M	1	0.1		Nitrosodiethylamine, N-	55-18-5	8.1E-04	c	1.5E-02	c	2.4E-05	c	2.9E-04	c	1.7E-04	c		6.1E-08	c	
5.1E+01	I	1.4E-02	I	8.0E-06	P	4.0E-05	X	V	M	1		2.4E+05	Nitrosodimethylamine, N-	62-75-9	2.0E-03	c	3.4E-02	c	7.2E-05	c	8.8E-04	c	1.1E-04	c		2.7E-08	c	
4.9E-03	I	2.6E-06	C							1	0.1		Nitrosodiphenylamine, N-	86-30-6	1.1E+02	c	4.7E+02	c	1.1E+00	c	4.7E+00	c	1.2E+01	c		6.7E-02	c	
2.2E+01	I	6.3E-03	C					V		1		1.1E+05	Nitrosomethylethylamine, N-	10595-95-6	2.0E-02	c	9.1E-02	c	4.5E-04	c	1.9E-03	c	7.1E-04	c		2.0E-07	c	
6.7E+00	C	1.9E-03	C							1	0.1		Nitrosomorpholine [N-]	59-89-2	8.1E-02	c	3.4E-01	c	1.5E-03	c	6.5E-03	c	1.2E-02	c		2.8E-06	c	
9.4E+00	C	2.7E-03	C							1	0.1		Nitrosopiperidine [N-]	100-75-4	5.8E-02	c	2.4E-01	c	1.0E-03	c	4.5E-03	c	8.2E-03	c		4.4E-06	c	
2.1E+00	I	6.1E-04	I							1	0.1		Nitrosopyrrolidine, N-	930-55-2	2.6E-01	c	1.1E+00	c	4.6E-03	c	2.0E-02	c	3.7E-02	c		1.4E-05	c	
				1.0E-04	X					1	0.1		Nitrotoluene, m-	99-08-1	6.3E+00	n	8.2E+01	n					1.7E+00	n		1.6E-03	n	
2.2E-01	P			9.0E-04	P			V		1		1.5E+03	Nitrotoluene, o-	88-72-2	3.2E+00	c*	1.5E+01	c*					3.1E-01	c*		3.0E-04	c*	
1.6E-02	P			4.0E-03	P					1	0.1		Nitrotoluene, p-	99-99-0	3.4E+01	c**	1.4E+02	c*					4.3E+00	c*		4.0E-03	c*	
				3.0E-04	X	2.0E-02	P	V		1		6.9E+00	Nonane, n-	111-84-2	1.1E+01	ns	7.2E+01	ns	2.1E+01	n	8.8E+01	n	5.3E+00	n		7.5E-02	n	
				1.5E-03	O					1	0.1		Norflurazon	27314-13-2	9.5E+01	n	1.2E+03	n					2.9E+01	n		1.9E-01	n	

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels													Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				3.0E-03	I					1	0.1		Octabromodiphenyl Ether	32536-52-0	1.9E+02	n	2.5E+03	n					6.0E+01	n		1.2E+01	n	
				5.0E-02	I					1	0.006		Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	3.9E+03	n	5.7E+04	n					1.0E+03	n		1.3E+00	n	
				2.0E-03	H					1	0.1		Octamethylpyrophosphoramide	152-16-9	1.3E+02	n	1.6E+03	n					4.0E+01	n		9.6E-03	n	
7.8E-03	O			1.9E-01	O					1	0.1		Oryzalin	19044-88-3	7.0E+01	c	2.9E+02	c					7.9E+00	c		1.5E-02	c	
				5.0E-03	I					1	0.1		Oxadiazon	19666-30-9	3.2E+02	n	4.1E+03	n					4.7E+01	n		4.8E-01	n	
				2.5E-02	I					1	0.1		Oxamyl	23135-22-0	1.6E+03	n	2.1E+04	n					5.0E+02	n	2.0E+02	1.1E-01	n	4.4E-02
7.3E-02	O			4.0E-02	O					1	0.1		Oxyfluorfen	42874-03-3	7.4E+00	c	3.1E+01	c					5.4E-01	c		4.3E-02	c	
				1.3E-02	I					1	0.1		Paclobutrazol	76738-62-0	8.2E+02	n	1.1E+04	n					2.3E+02	n		4.6E-01	n	
				4.5E-03	I					1	0.1		Paraquat Dichloride	1910-42-5	2.8E+02	n	3.7E+03	n					9.0E+01	n		1.2E+00	n	
				6.0E-03	H					1	0.1		Parathion	56-38-2	3.8E+02	n	4.9E+03	n					8.6E+01	n		4.3E-01	n	
				5.0E-02	H			V		1			Pebulate	1114-71-2	3.9E+03	n	5.8E+04	n					5.6E+02	n		4.5E-01	n	
				3.0E-01	O					1	0.1		Pendimethalin	40487-42-1	1.9E+04	n	2.5E+05	nm					1.4E+03	n		1.6E+01	n	
				2.0E-03	I			V		1		3.1E-01	Pentabromodiphenyl Ether	32534-81-9	1.6E+02	ns	2.3E+03	ns					4.0E+01	n		1.7E+00	n	
				1.0E-04	I					1	0.1		Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	6.3E+00	n	8.2E+01	n					2.0E+00	n		8.7E-02	n	
				8.0E-04	I			V		1			Pentachlorobenzene	608-93-5	6.3E+01	n	9.3E+02	n					3.2E+00	n		2.4E-02	n	
9.0E-02	P							V		1		4.6E+02	Pentachloroethane	76-01-7	7.7E+00	c	3.6E+01	c					6.5E-01	c		3.1E-04	c	
2.6E-01	H			3.0E-03	I			V		1			Pentachloronitrobenzene	82-68-8	2.7E+00	c*	1.3E+01	c					1.2E-01	c		1.5E-03	c	
4.0E-01	I	5.1E-06	C	5.0E-03	I					1	0.25		Pentachlorophenol	87-86-5	1.0E+00	c	4.0E+00	c	5.5E-01	c	2.4E+00	c	4.1E-02	c	1.0E+00	5.7E-05	c	1.4E-03
4.3E-03	X			9.0E-03	P					1	0.1		Pentaerythritol tetranitrate (PETN)	78-11-5	1.3E+02	c**	5.3E+02	c*					1.7E+01	c**		2.6E-02	c**	
				1.0E-04	X					1	0.1		Pentamethylphosphoramide (PMPA)	10159-46-3	6.3E+00	n	8.2E+01	n					2.0E+00	n		4.1E-04	n	
						1.0E+00	P	V		1		3.9E+02	Pentane, n-	109-66-0	8.1E+02	ns	3.4E+03	ns	1.0E+03	n	4.4E+03	n	2.1E+03	n		1.0E+01	n	
													Per- and Polyfluoroalkyl Substances (PFAS)															
				3.0E-04	P					1	0.1		~Perfluorobutanesulfonate	45187-15-3	1.9E+01	n	2.5E+02	n					6.0E+00	n		1.9E-03	n	
				3.0E-04	P					1	0.1		~Perfluorobutanesulfonic acid (PFBS)	375-73-5	1.9E+01	n	2.5E+02	n					6.0E+00	n		1.9E-03	n	
				3.0E-04	P					1	0.1		~Potassium Perfluorobutane Sulfonate	29420-49-3	1.9E+01	n	2.5E+02	n					6.0E+00	n		3.0E-03	n	
													Perchlorates															
				7.0E-04	I					1			~Ammonium Perchlorate	7790-98-9	5.5E+01	n	8.2E+02	n					1.4E+01	n				
				7.0E-04	I					1			~Lithium Perchlorate	7791-03-9	5.5E+01	n	8.2E+02	n					1.4E+01	n				
				7.0E-04	I					1			~Perchlorate and Perchlorate Salts	14797-73-0	5.5E+01	n	8.2E+02	n					1.4E+01	n	1.5E+01(G)			
				7.0E-04	I					1			~Potassium Perchlorate	7778-74-7	5.5E+01	n	8.2E+02	n					1.4E+01	n				
				7.0E-04	I					1			~Sodium Perchlorate	7601-89-0	5.5E+01	n	8.2E+02	n					1.4E+01	n				
				5.0E-02	I					1	0.1		Permethrin	52645-53-1	3.2E+03	n	4.1E+04	n					1.0E+03	n		2.4E+02	n	
2.2E-03	C	6.3E-07	C							1	0.1		Phenacetin	62-44-2	2.5E+02	c	1.0E+03	c	4.5E+00	c	1.9E+01	c	3.4E+01	c		9.7E-03	c	
				2.4E-01	O					1	0.1		Phenmedipham	13684-63-4	1.5E+04	n	2.0E+05	nm					3.8E+03	n		2.1E+01	n	
				3.0E-01	I	2.0E-01	C			1	0.1		Phenol	108-95-2	1.9E+04	n	2.5E+05	nm	2.1E+02	n	8.8E+02	n	5.8E+03	n		3.3E+00	n	
				4.0E-03	I					1	0.1		Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1	2.5E+02	n	3.3E+03	n					7.8E+01	n		2.5E-02	n	
				5.0E-04	X					1	0.1		Phenothiazine	92-84-2	3.2E+01	n	4.1E+02	n					4.3E+00	n		1.4E-02	n	
				2.0E-04	X			V		1		1.3E+02	Phenyl Isothiocyanate	103-72-0	1.6E+01	n	2.3E+02	ns					2.6E+00	n		1.7E-03	n	
				6.0E-03	I					1	0.1		Phenylenediamine, m-	108-45-2	3.8E+02	n	4.9E+03	n					1.2E+02	n		3.2E-02	n	
1.2E-01	P			4.0E-03	P					1	0.1		Phenylenediamine, o-	95-54-5	4.5E+00	c*	1.9E+01	c					6.5E-01	c		1.7E-04	c	
				1.0E-03	X					1	0.1		Phenylenediamine, p-	106-50-3	6.3E+01	n	8.2E+02	n					2.0E+01	n		5.4E-03	n	
1.9E-03	H									1	0.1		Phenylphenol, 2-	90-43-7	2.8E+02	c	1.2E+03	c					3.0E+01	c		4.1E-01	c	
				2.0E-04	H					1	0.1		Phorate	298-02-2	1.3E+01	n	1.6E+02	n					3.0E+00	n		3.4E-03	n	
						3.0E-04	I	V		1		1.6E+03	Phosgene	75-44-5	3.1E-01	n	1.3E+00	n	3.1E-01	n	1.3E+00	n	6.3E-01	n		1.6E-04	n	
				2.0E-02	I					1	0.1		Phosmet	732-11-6	1.3E+03	n	1.6E+04	n					3.7E+02	n		8.2E-02	n	
				3.0E-04	I	3.0E-04	I	V		1			Phosphine	7803-51-2	2.3E+01	n	3.5E+02	n	3.1E-01	n	1.3E+00	n	5.7E-01	n				
						1.0E-02	I			1			Phosphoric Acid	7664-38-2	1.4E+07	nm	6.0E+07	nm	1.0E+01	n	4.4E+01	n						
				2.0E-05	I			V		1			Phosphorus, White	7723-14-0	1.6E+00	n	2.3E+01	n					4.0E-01	n		1.5E-03	n	
													Phthalates															
1.4E-02	I	2.4E-06	C	2.0E-02	I					1	0.1		~Bis(2-ethylhexyl)phthalate	117-81-7	3.9E+01	c*	1.6E+02	c	1.2E+00	c	5.1E+00	c	5.6E+00	c*	6.0E+00	1.3E+00	c*	1.4E+00
1.9E-03	P			2.0E-01	I					1	0.1		~Butyl Benzyl Phthalate	85-68-7	2.9E+02	c*	1.2E+03	c					1.6E+01	c		2.4E-01	c	
				1.0E+00	I					1	0.1		~Butylphthalyl Butylglycolate	85-70-1	6.3E+04	n	8.2E+05	nm					1.3E+04	n		3.1E+02	n	
				1.0E-01	I					1	0.1		~Dibutyl Phthalate	84-74-2	6.3E+03	n	8.2E+04	n					9.0E+02	n		2.3E+00	n	
				8.0E-01	I					1	0.1		~Diethyl Phthalate	84-66-2	5.1E+04	n	6.6E+05	nm					1.5E+04	n		6.1E+00	n	
				1.0E-01	I			V		1			~Dimethylterephthalate	120-61-6	7.8E+03	n	1.2E+05	nm					1.9E+03	n		4.9E-01	n	
				1.0E-02	P					1	0.1		~Octyl Phthalate, di-N-	117-84-0	6.3E+02	n	8.2E+03	n					2.0E+02	n		5.7E+01	n	
				5.0E-01	X					1	0.1		~Phthalic Acid, p-	100-21-0	3.2E+04	n	4.1E+05	nm					9.4E+03	n		3.4E+00	n	
				2.0E+00	I	2.0E-02	C			1	0.1		~Phthalic Anhydride	85-44-9	1.3E+05	nm	1.6E+06	nm	2.1E+01	n	8.8E+01	n	3.9E+04	n		8.5E+00	n	
				7.0E-02	I					1	0.1		Picloram	1918-02-1	4.4E+03	n	5.7E+04	n					1.4E+03	n	5.0E+02	3.8E-01	n	1.4E-01
				1.0E-04	X					1	0.1		Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	6.3E+00	n	8.2E+01	n					2.0E+00	n		1.3E-03	n	
				2.0E-03	X					1	0.1		Picric Acid (2,4,6-Trinitrophenol)	88-89-1	1.3E+02	n	1.6E+03	n					4.0E+01	n		1.9E-01	n	
				7.3E-04	O					1	0.1		Pirimiphos, Methyl	29232-93-7	4.6E+01	n	6.0E+02	n					8.9E+00	n		8.4E-03	n	
3.0E+01	C	8.6E-03	C	7.0E-06	H					1	0.1		Polybrominated Biphenyls	36355-01-8	1.8E-02	c*	7.7E-02	c*	3.3E-04	c	1.4E-03	c	2.6E-03	c*				
													Polychlorinated Biphenyls (PCBs)															
7.0E-02	G	2.0E-05	G	7.0E-05	I			V		1	0.14		~Aroclor 1016	12674-11-2	4.1E+00	n	2.7E+01	c**	1.4E-01	c	6.1E-01	c	2.2E-01	c**		2.1E-02	c**	
2.0E+00	G	5.7E-04	G					V		1	0.14		~Aroclor 1221	11104-28-2	2.0E-01	c	8.3E-01	c	4.9E-03	c	2.1E-02	c	4.7E-03	c		8.0E-05	c	
2.0E+00	G	5.7E-04	G					V		1	0.14		~Aroclor 1232	11141-16-5	1.7E-01	c	7.2E-01	c	4.9E-03	c	2.1E-02	c	4.7E-03	c		8.0E-05	c	
2.0E+00	G	5.7E-04	G					V		1	0.14		~Aroclor 1242	53469-21-9	2.3E-01	c	9.5E-01	c	4.9E-03	c	2.1E-02	c	7.8E-03	c		1.2E-03	c	
2.0E+00	G	5.7E-04	G					V		1	0.14		~Aroclor 1248	12672-29-6	2.3E-01	c	9.4E-01	c	4.9E-03	c	2.1E-02	c	7.8E-03	c		1.2E-03	c	
2.0E+00	G	5.7E-04	G	2.0E-05	I			V		1	0.14		~Aroclor 1254	11097-69-1	2.4E-01	c**	9.7E-01	c*	4.9E-03	c	2.1E-02	c	7.8E-03	c*		2.0E-03	c*	
2.0E+00	G	5.7E-04	G					V		1	0.14		~Aroclor 1260	11096-82-5	2.4E-01	c	9.9E-01	c	4.9E-03	c	2.1E-02	c	7.8E-03	c		5.5E-03	c	
				6.0E-04	X			V		1	0.14		~Aroclor 5460	11126-42-4	3.5E+01	n	4.4E+02	n					1.2E+01	n		2.0E+00	n	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	1.3E-01	c*	5.2E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		2.8E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	1.2E-01	c*	5.1E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.7E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	1.2E-01	c*	5.0E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.7E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	1.2E-01	c*	5.0E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.7E-03	c	
3.9E+03	W	1.1E+00	W	2.3E-08	W	1.3E-06	W	V		1	0.14		~Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	1.2E-04	c*	5.1E-04	c*	2.5E-06	c	1.1E-05	c	4.0E-06	c		1.7E-06	c	

TR=1E-06
THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels										Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	1.2E-01	c*	4.9E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.0E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	1.2E-01	c*	4.9E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.0E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	1.2E-01	c*	4.9E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.0E-03	c	
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V		1	0.14		~Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	1.2E-01	c*	5.0E-01	c*	2.5E-03	c	1.1E-02	c	4.0E-03	c		1.0E-03	c	
1.3E+04	W	3.8E+00	W	7.0E-09	W	4.0E-07	W	V		1	0.14		~Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	3.6E-05	c*	1.5E-04	c*	7.4E-07	c	3.2E-06	c	1.2E-06	c		3.0E-07	c	
2.0E+00	I	5.7E-04	I					V		1	0.14		~Polychlorinated Biphenyls (high risk)	1336-36-3	2.3E-01	c	9.4E-01	c	4.9E-03	c	2.1E-02	c			5.0E-01			
4.0E-01	I	1.0E-04	I					V		1	0.14		~Polychlorinated Biphenyls (low risk)	1336-36-3					2.8E-02	c	1.2E-01	c	4.4E-02	c	5.0E-01	6.8E-03	c	7.8E-02
7.0E-02	I	2.0E-05	I					V		1	0.14		~Polychlorinated Biphenyls (lowest risk)	1336-36-3					1.4E-01	c	6.1E-01	c			5.0E-01			
1.3E+01	W	3.8E-03	W	7.0E-06	W	4.0E-04	W			1	0.14		~Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	3.8E-02	c*	1.6E-01	c*	7.4E-04	c	3.2E-03	c	6.0E-03	c*		9.4E-04	c*	
3.9E+01	W	1.1E-02	W	2.3E-06	W	1.3E-04	W	V		1	0.14		~Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	1.2E-02	c*	4.8E-02	c*	2.5E-04	c	1.1E-03	c	4.0E-04	c		6.2E-05	c	
						6.0E-04	I			1	0.1		Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	8.5E+05	nm	3.6E+06	nm	6.3E-01	n	2.6E+00	n						
													Polynuclear Aromatic Hydrocarbons (PAHs)															
				6.0E-02	I			V		1	0.13		~Acenaphthene	83-32-9	3.6E+03	n	4.5E+04	n					5.3E+02	n		5.5E+00	n	
				3.0E-01	I			V		1	0.13		~Anthracene	120-12-7	1.8E+04	n	2.3E+05	nm					1.8E+03	n		5.8E+01	n	
1.0E-01	E	6.0E-05	E					V	M	1	0.13		~Benz[a]anthracene	56-55-3	1.1E+00	c	2.1E+01	c	1.7E-02	c	2.0E-01	c	3.0E-02	c		1.1E-02	c	
1.2E+00	C	1.1E-04	C							1	0.13		~Benzo(j)fluoranthene	205-82-3	4.2E-01	c	1.8E+00	c	2.6E-02	c	1.1E-01	c	6.5E-02	c		7.8E-02	c	
1.0E+00	I	6.0E-04	I	3.0E-04	I	2.0E-06	I		M	1	0.13		~Benzo[a]pyrene	50-32-8	1.1E-01	c	2.1E+00	c	1.7E-03	c**	8.8E-03	n	2.5E-02	c	2.0E-01	2.9E-02	c	2.4E-01
1.0E-01	E	6.0E-05	E						M	1	0.13		~Benzo[b]fluoranthene	205-99-2	1.1E+00	c	2.1E+01	c	1.7E-02	c	2.0E-01	c	2.5E-01	c		3.0E-01	c	
1.0E-02	E	6.0E-06	E						M	1	0.13		~Benzo[k]fluoranthene	207-08-9	1.1E+01	c	2.1E+02	c	1.7E-01	c	2.0E+00	c	2.5E+00	c		2.9E+00	c	
				8.0E-02	I			V		1	0.13		~Chloronaphthalene, Beta-	91-58-7	4.8E+03	n	6.0E+04	n					7.5E+02	n		3.9E+00	n	
1.0E-03	E	6.0E-07	E						M	1	0.13		~Chrysene	218-01-9	1.1E+02	c	2.1E+03	c	1.7E+00	c	2.0E+01	c	2.5E+01	c		9.0E+00	c	
1.0E+00	E	6.0E-04	E						M	1	0.13		~Dibenz[a,h]anthracene	53-70-3	1.1E-01	c	2.1E+00	c	1.7E-03	c	2.0E-02	c	2.5E-02	c		9.6E-02	c	
1.2E+01	C	1.1E-03	C							1	0.13		~Dibenzo(a,e)pyrene	192-65-4	4.2E-02	c	1.8E-01	c	2.6E-03	c	1.1E-02	c	6.5E-03	c		8.4E-02	c	
2.5E+02	C	7.1E-02	C						M	1	0.13		~Dimethylbenz(a)anthracene, 7,12-	57-97-6	4.6E-04	c	8.4E-03	c	1.4E-05	c	1.7E-04	c	1.0E-04	c		9.9E-05	c	
				4.0E-02	I					1	0.13		~Fluoranthene	206-44-0	2.4E+03	n	3.0E+04	n					8.0E+02	n		8.9E+01	n	
				4.0E-02	I			V		1	0.13		~Fluorene	86-73-7	2.4E+03	n	3.0E+04	n					2.9E+02	n		5.4E+00	n	
1.0E-01	E	6.0E-05	E						M	1	0.13		~Indeno[1,2,3-cd]pyrene	193-39-5	1.1E+00	c	2.1E+01	c	1.7E-02	c	2.0E-01	c	2.5E-01	c		9.8E-01	c	
2.9E-02	P			7.0E-02	A			V		1	0.13	3.9E+02	~Methylnaphthalene, 1-	90-12-0	1.8E+01	c	7.3E+01	c					1.1E+00	c		6.0E-03	c	
				4.0E-03	I			V		1	0.13		~Methylnaphthalene, 2-	91-57-6	2.4E+02	n	3.0E+03	n					3.6E+01	n		1.9E-01	n	
1.2E-01	C	3.4E-05	C	2.0E-02	I	3.0E-03	I	V		1	0.13		~Naphthalene	91-20-3	2.0E+00	c*	8.6E+00	c*	8.3E-02	c*	3.6E-01	c*	1.2E-01	c*		3.8E-04	c*	
1.2E+00	C	1.1E-04	C							1	0.13		~Nitropyrene, 4-	57835-92-4	4.2E-01	c	1.8E+00	c	2.6E-02	c	1.1E-01	c	1.9E-02	c		3.3E-03	c	
				3.0E-02	I			V		1	0.13		~Pyrene	129-00-0	1.8E+03	n	2.3E+04	n					1.2E+02	n		1.3E+01	n	
1.5E-01	I			9.0E-03	I					1	0.1		Prochloraz	67747-09-5	3.6E+00	c	1.5E+01	c					3.8E-01	c		1.9E-03	c	
				6.0E-03	H			V		1			Profluralin	26399-36-0	4.7E+02	n	7.0E+03	n					2.6E+01	n		1.6E+00	n	
				1.5E-02	I					1	0.1		Prometon	1610-18-0	9.5E+02	n	1.2E+04	n					2.5E+02	n		1.2E-01	n	
				4.0E-02	O					1	0.1		Prometryn	7287-19-6	2.5E+03	n	3.3E+04	n					6.0E+02	n		9.0E-01	n	
				7.5E-02	I					1	0.1		Pronamide	23950-58-5	4.7E+03	n	6.2E+04	n					1.2E+03	n		1.2E+00	n	
				1.3E-02	I					1	0.1		Propachlor	1918-16-7	8.2E+02	n	1.1E+04	n					2.5E+02	n		1.5E-01	n	
				5.0E-03	I					1	0.1		Propanil	709-98-8	3.2E+02	n	4.1E+03	n					8.2E+01	n		4.5E-02	n	
1.9E-01	O			4.0E-02	O					1	0.1		Propargite	2312-35-8	2.8E+00	c	1.2E+01	c					1.6E-01	c		1.1E-02	c	
				2.0E-03	I			V		1		1.1E+05	Propargyl Alcohol	107-19-7	1.6E+02	n	2.3E+03	n					4.0E+01	n		8.1E-03	n	
				2.0E-02	I					1	0.1		Propazine	139-40-2	1.3E+03	n	1.6E+04	n					3.4E+02	n		3.0E-01	n	
				2.0E-02	I					1	0.1		Propham	122-42-9	1.3E+03	n	1.6E+04	n					3.5E+02	n		2.2E-01	n	
				1.0E-01	O					1	0.1		Propiconazole	60207-90-1	6.3E+03	n	8.2E+04	n					1.6E+03	n		5.3E+00	n	
						8.0E-03	I	V		1		3.3E+04	Propionaldehyde	123-38-6	7.5E+01	n	3.1E+02	n	8.3E+00	n	3.5E+01	n	1.7E+01	n		3.4E-03	n	
				1.0E-01	X	1.0E+00	X	V		1		2.6E+02	Propyl benzene	103-65-1	3.8E+03	ns	2.4E+04	ns	1.0E+03	n	4.4E+03	n	6.6E+02	n		1.2E+00	n	
						3.0E+00	C	V		1		3.5E+02	Propylene	115-07-1	2.2E+03	ns	9.3E+03	ns	3.1E+03	n	1.3E+04	n	6.3E+03	n		6.0E+00	n	
				2.0E+01	P					1	0.1		Propylene Glycol	57-55-6	1.3E+06	nm	1.6E+07	nm					4.0E+05	n		8.1E+01	n	
						2.7E-04	A			1	0.1		Propylene Glycol Dinitrate	6423-43-4	3.9E+05	nm	1.6E+06	nm	2.8E-01	n	1.2E+00	n						
				7.0E-01	H	2.0E+00	I	V		1		1.1E+05	Propylene Glycol Monomethyl Ether	107-98-2	4.1E+04	n	3.7E+05	nms	2.1E+03	n	8.8E+03	n	3.2E+03	n		6.5E-01	n	
2.4E-01	I	3.7E-06	I			3.0E-02	I	V		1		7.8E+04	Propylene Oxide	75-56-9	2.1E+00	c	9.7E+00	c	7.6E-01	c*	3.3E+00	c*	2.7E-01	c		5.6E-05	c	
				1.0E-03	I			V		1		5.3E+05	Pyridine	110-86-1	7.8E+01	n	1.2E+03	n					2.0E+01	n		6.8E-03	n	
				5.0E-04	I					1	0.1		Quinalphos	13593-03-8	3.2E+01	n	4.1E+02	n					5.1E+00	n		4.3E-02	n	
3.0E+00	I									1	0.1		Quinoline	91-22-5	1.8E-01	c	7.7E-01	c					2.4E-02	c		7.8E-05	c	
				9.0E-03	I					1	0.1		Quizalofop-ethyl	76578-14-8	5.7E+02	n	7.4E+03	n					1.2E+02	n		1.9E+00	n	
						3.0E+04	A			1			Refractory Ceramic Fibers (units in fibers)	E715557					3.1E+04	G	1.3E+05	G						
				3.0E-02	I					1	0.1		Resmethrin	10453-86-8	1.9E+03	n	2.5E+04	n					6.7E+01	n		4.2E+01	n	
				5.0E-02	H			V		1			Ronnel	299-84-3	3.9E+03	n	5.8E+04	n					4.1E+02	n		3.7E+00	n	
				4.0E-03	I					1	0.1		Rotenone	83-79-4	2.5E+02	n	3.3E+03	n					6.1E+01	n		3.2E+01	n	
2.2E-01	C	6.3E-05	C						M	1	0.1		Safrole	94-59-7	5.5E-01	c	1.0E+01	c	1.6E-02	c	1.9E-01	c	9.6E-02	c		5.9E-05	c	
				5.0E-03	I					1			Selenious Acid	7783-00-8	3.9E+02	n	5.8E+03	n					1.0E+02	n				
				5.0E-03	I	2.0E-02	C			1			Selenium	7782-49-2	3.9E+02	n	5.8E+03	n	2.1E+01	n	8.8E+01	n	1.0E+02	n	5.0E+01	5.2E-01	n	2.6E-01
				5.0E-03	C	2.0E-02	C			1			Selenium Sulfide	7446-34-6	3.9E+02	n	5.8E+03	n	2.1E+01	n	8.8E+01	n	1.0E+02	n				
				1.4E-01	O					1	0.1		Sethoxydim	74051-80-2	8.8E+03	n	1.1E+05	nm					1.6E+03	n		1.4E+01	n	
						3.0E-03	C			1			Silica (crystalline, respirable)	7631-86-9	4.3E+06	nm	1.8E+07	nm	3.1E+00	n	1.3E+01	n						
				5.0E-03	I					0.04			Silver	7440-22-4	3.9E+02	n	5.8E+03	n					9.4E+01	n		8.0E-01	n	
1.2E-01	H			5.0E-03	I					1	0.1		Simazine	122-34-9	4.5E+00	c*	1.9E+01	c					6.1E-01	c	4.0E+00	3.0E-04	c	2.0E-03
				1.3E-02	I					1	0.1		Sodium Acifluorfen	62476-59-9	8.2E+02	n	1.1E+04	n					2.6E+02	n		2.1E+00	n	
				4.0E-03	I					1			Sodium Azide	26628-22-8	3.1E+02	n	4.7E+03	n					8.0E+01	n				
2.7E-01	H			3.0E-02	I					1	0.1		Sodium Diethyldithiocarbamate	148-18-5	2.0E+00	c	8.5E+00	c					2.9E-01	c		1.8E-04	c	
				5.0E-02	A	1.3E-02	C			1			Sodium Fluoride	7681-49-4	3.9E+03	n	5.8E+04	n	1.4E+01	n	5.7E+01	n	1.0E+03	n	4.0E+03	1.5E+02	n	6.0E+02
				2.0E-05	I					1	0.1		Sodium Fluoroacetate	62-74-8	1.3E+00	n	1.6E+01	n					4.0E-01	n		8.1E-05	n	
				1.0E-03	H					1			Sodium Metavanadate	13718-26-8	7.8E+01	n	1.2E+03	n					2.0E+01	n				
				8.0E-04	P					1			Sodium Tungstate	13472-45-2	6.3E+01	n	9.3E+02	n					1.6E+01	n				
				8.0E-04	P					1			Sodium Tungstate Dihydrate	10213-10-2	6.3E+01	n	9.3E+02	n					1.6E+01	n				
2.4E-02	H			3.0E-02	I					1	0.1		Stirofos (Tetrachlorovinphos)	961-11-5	2.3E+01	c*	9.6E+01	c					2.8E+00	c		8.2E-03	c	
				6.0E-01	I					1			Strontium, Stable	7440-24-6	4.7E+04	n	7.0E+05	nm					1.2E+04	n		4.2E+02	n	

TR=1E-06
THQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
				3.0E-04	I					1	0.1		Strychnine	57-24-9	1.9E+01	n	2.5E+02	n					5.9E+00	n		6.5E-02	n	
				2.0E-01	I	1.0E+00	I	V		1		8.7E+02	Styrene	100-42-5	6.0E+03	ns	3.5E+04	ns	1.0E+03	n	4.4E+03	n	1.2E+03	n	1.0E+02	1.3E+00	n	1.1E-01
				3.0E-03	P					1	0.1		Styrene-Acrylonitrile (SAN) Trimer (THNA isomer)	57964-39-3	1.9E+02	n	2.5E+03	n					4.8E+01	n				
				3.0E-03	P					1	0.1		Styrene-Acrylonitrile (SAN) Trimer (THNP isomer)	57964-40-6	1.9E+02	n	2.5E+03	n					4.8E+01	n				
				1.0E-03	P	2.0E-03	X			1	0.1		Sulfolane	126-33-0	6.3E+01	n	8.2E+02	n	2.1E+00	n	8.8E+00	n	2.0E+01	n		4.4E-03	n	
				8.0E-04	P					1	0.1		Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	5.1E+01	n	6.6E+02	n					1.1E+01	n		6.5E-02	n	
						1.0E-03	C	V		1			Sulfur Trioxide	7446-11-9	1.4E+06	nm	6.0E+06	nm	1.0E+00	n	4.4E+00	n	2.1E+00	n				
						1.0E-03	C			1			Sulfuric Acid	7664-93-9	1.4E+06	nm	6.0E+06	nm	1.0E+00	n	4.4E+00	n						
2.5E-02	I	7.1E-06	I	5.0E-02	H					1	0.1		Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	2.2E+01	c	9.2E+01	c	4.0E-01	c	1.7E+00	c	1.3E+00	c		1.5E-02	c	
				3.0E-02	H					1	0.1		TCMTB	21564-17-0	1.9E+03	n	2.5E+04	n					4.8E+02	n		3.3E+00	n	
				7.0E-02	I					1	0.1		Tebuthiuron	34014-18-1	4.4E+03	n	5.7E+04	n					1.4E+03	n		3.9E-01	n	
				2.0E-02	H					1	0.1		Temephos	3383-96-8	1.3E+03	n	1.6E+04	n					4.0E+02	n		7.6E+01	n	
				1.3E-02	I					1	0.1		Terbacil	5902-51-2	8.2E+02	n	1.1E+04	n					2.5E+02	n		7.5E-02	n	
				2.5E-05	H			V		1		3.1E+01	Terbufos	13071-79-9	2.0E+00	n	2.9E+01	n					2.4E-01	n		5.2E-04	n	
				1.0E-03	I					1	0.1		Terbutryn	886-50-0	6.3E+01	n	8.2E+02	n					1.3E+01	n		1.9E-02	n	
5.0E-03	C	1.3E-06	C					V		1			Tert-Butyl Acetate	540-88-5	8.1E+00	c	3.6E+01	c	2.2E+00	c	9.4E+00	c	3.3E+00	c		7.6E-04	c	
				1.0E-04	I					1	0.1		Tetrabromodiphenyl ether, 2,2',4,4'- (BDE-47)	5436-43-1	6.3E+00	n	8.2E+01	n					2.0E+00	n		5.3E-02	n	
				3.0E-05	P			V		1			Tetrachlorobenzene, 1,2,4,5-	95-94-3	2.3E+00	n	3.5E+01	n					1.7E-01	n		7.9E-04	n	
2.6E-02	I	7.4E-06	I	3.0E-02	I			V		1		6.8E+02	Tetrachloroethane, 1,1,1,2-	630-20-6	2.0E+00	c	8.8E+00	c	3.8E-01	c	1.7E+00	c	5.7E-01	c		2.2E-04	c	
2.0E-01	I	5.8E-05	C	2.0E-02	I			V		1		1.9E+03	Tetrachloroethane, 1,1,2,2-	79-34-5	6.0E-01	c	2.7E+00	c	4.8E-02	c	2.1E-01	c	7.6E-02	c		3.0E-05	c	
2.1E-03	I	2.6E-07	I	6.0E-03	I	4.0E-02	I	V		1		1.7E+02	Tetrachloroethylene	127-18-4	2.4E+01	c**	1.0E+02	c**	1.1E+01	c**	4.7E+01	c**	1.1E+01	c**	5.0E+00	5.1E-03	c**	2.3E-03
				3.0E-02	I					1	0.1		Tetrachlorophenol, 2,3,4,6-	58-90-2	1.9E+03	n	2.5E+04	n					2.4E+02	n		1.8E-01	n	
1.6E+01	X			6.0E-05	X			V		1			Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	4.3E-02	c	2.0E-01	c					1.7E-03	c		5.7E-06	c	
				5.0E-04	I					1	0.1		Tetraethyl Dithiopyrophosphate	3689-24-5	3.2E+01	n	4.1E+02	n					7.1E+00	n		5.2E-03	n	
						8.0E+01	I	V		1		2.1E+03	Tetrafluoroethane, 1,1,1,2-	811-97-2	1.0E+05	nms	4.3E+05	nms	8.3E+04	n	3.5E+05	n	1.7E+05	n		9.3E+01	n	
				1.0E-04	X					1	0.1		Tetramethylphosphoramide, -N,N,N',N" (TMPA)	16853-36-4	6.3E+00	n	8.2E+01	n					2.0E+00	n				
				2.0E-03	P					1	0.00065		Tetryl (Trinitrophenylmethylnitramine)	479-45-8	1.6E+02	n	2.3E+03	n					3.9E+01	n		3.7E-01	n	
				2.0E-05	G					1			Thallic Oxide	1314-32-5	1.6E+00	n	2.3E+01	n					4.0E-01	n				
				1.0E-05	X					1			Thallium (I) Nitrate	10102-45-1	7.8E-01	n	1.2E+01	n					2.0E-01	n				
				1.0E-05	X					1			Thallium (Soluble Salts)	7440-28-0	7.8E-01	n	1.2E+01	n					2.0E-01	n	2.0E+00	1.4E-02	n	1.4E-01
				1.0E-05	X			V		1			Thallium Acetate	563-68-8	7.8E-01	n	1.2E+01	n					2.0E-01	n		4.1E-05	n	
				2.0E-05	X			V		1			Thallium Carbonate	6533-73-9	1.6E+00	n	2.3E+01	n					4.0E-01	n		8.3E-05	n	
				1.0E-05	X					1			Thallium Chloride	7791-12-0	7.8E-01	n	1.2E+01	n					2.0E-01	n				
				1.0E-05	G					1			Thallium Selenite	12039-52-0	7.8E-01	n	1.2E+01	n					2.0E-01	n				
				2.0E-05	X					1			Thallium Sulfate	7446-18-6	1.6E+00	n	2.3E+01	n					4.0E-01	n				
				4.3E-02	O					1	0.1		Thifensulfuron-methyl	79277-27-3	2.7E+03	n	3.5E+04	n					8.6E+02	n		2.6E-01	n	
				1.0E-02	I					1	0.1		Thiobencarb	28249-77-6	6.3E+02	n	8.2E+03	n					1.6E+02	n		5.5E-01	n	
				7.0E-02	X					1	0.0075		Thiodiglycol	111-48-8	5.4E+03	n	7.9E+04	n					1.4E+03	n		2.8E-01	n	
				3.0E-04	H					1	0.1		Thiofanox	39196-18-4	1.9E+01	n	2.5E+02	n					5.3E+00	n		1.8E-03	n	
1.2E-02	O			1.6E-01	O					1	0.1		Thiophanate, Methyl	23564-05-8	4.7E+01	c	2.0E+02	c					6.7E+00	c		5.7E-03	c	
				1.5E-02	O					1	0.1		Thiram	137-26-8	9.5E+02	n	1.2E+04	n					2.9E+02	n		4.2E-01	n	
				6.0E-01	H					1			Tin	7440-31-5	4.7E+04	n	7.0E+05	nm					1.2E+04	n		3.0E+03	n	
						1.0E-04	A	V		1			Titanium Tetrachloride	7550-45-0	1.4E+05	nm	6.0E+05	nm	1.0E-01	n	4.4E-01	n	2.1E-01	n				
				8.0E-02	I	5.0E+00	I	V		1		8.2E+02	Toluene	108-88-3	4.9E+03	ns	4.7E+04	ns	5.2E+03	n	2.2E+04	n	1.1E+03	n	1.0E+03	7.6E-01	n	6.9E-01
3.9E-02	C	1.1E-05	C			8.0E-06	C	V		1			Toluene-2,4-diisocyanate	584-84-9	6.4E+00	n	2.7E+01	n	8.3E-03	n	3.5E-02	n	1.7E-02	n		2.5E-04	n	
1.8E-01	X			2.0E-04	X					1	0.1		Toluene-2,5-diamine	95-70-5	3.0E+00	c**	1.3E+01	c*					4.3E-01	c**		1.3E-04	c**	
3.9E-02	C	1.1E-05	C			8.0E-06	C	V		1		1.7E+03	Toluene-2,6-diisocyanate	91-08-7	5.3E+00	n	2.2E+01	n	8.3E-03	n	3.5E-02	n	1.7E-02	n		2.6E-04	n	
				1.0E-04	X					1	0.1		Toluenediamine, 2,3-	2687-25-4	6.3E+00	n	8.2E+01	n					2.0E+00	n		6.2E-04	n	
				1.0E-04	X					1	0.1		Toluenediamine, 3,4-	496-72-0	6.3E+00	n	8.2E+01	n					2.0E+00	n		6.2E-04	n	
				5.0E-03	P					1	0.1		Toluic Acid, p-	99-94-5	3.2E+02	n	4.1E+03	n					9.0E+01	n		2.3E-02	n	
1.6E-02	P	5.1E-05	C							1	0.1		Toluidine, o- (Methylaniline, 2-)	95-53-4	3.4E+01	c	1.4E+02	c	5.5E-02	c	2.4E-01	c	4.7E+00	c		2.0E-03	c	
3.0E-02	P			4.0E-03	X					1	0.1		Toluidine, p-	106-49-0	1.8E+01	c*	7.7E+01	c*					2.5E+00	c*		1.1E-03	c*	
				3.0E+00	P			V		1		3.4E-01	Total Petroleum Hydrocarbons (Aliphatic High)	E1790670	2.3E+05	nms	3.5E+06	nms					6.0E+04	n		2.4E+03	n	
						6.0E-01	P	V		1		1.4E+02	Total Petroleum Hydrocarbons (Aliphatic Low)	E1790666	5.2E+02	ns	2.2E+03	ns	6.3E+02	n	2.6E+03	n	1.3E+03	n		8.8E+00	n	
				1.0E-02	X	1.0E-01	P	V		1		6.9E+00	Total Petroleum Hydrocarbons (Aliphatic Medium)	E1790668	9.6E+01	ns	4.4E+02	ns	1.0E+02	n	4.4E+02	n	1.0E+02	n		1.5E+00	n	
				4.0E-02	P					1	0.13		Total Petroleum Hydrocarbons (Aromatic High)	E1790676	2.4E+03	n	3.0E+04	n					8.0E+02	n		8.9E+01	n	
				4.0E-03	P	3.0E-02	P	V		1		1.8E+03	Total Petroleum Hydrocarbons (Aromatic Low)	E1790672	8.2E+01	n	4.2E+02	n	3.1E+01	n	1.3E+02	n	3.3E+01	n		1.7E-02	n	
				4.0E-03	P	3.0E-03	P	V		1	0.13		Total Petroleum Hydrocarbons (Aromatic Medium)	E1790674	9.7E+01	n	5.6E+02	n	3.1E+00	n	1.3E+01	n	5.5E+00	n		2.3E-02	n	
1.1E+00	I	3.2E-04	I	9.0E-05	P					1	0.1		Toxaphene	8001-35-2	4.9E-01	c*	2.1E+00	c*	8.8E-03	c	3.8E-02	c	7.1E-02	c*	3.0E+00	1.1E-02	c*	4.6E-01
				3.0E-05	X					1	0.1		Toxaphene, Weathered	E1841606	1.9E+00	n	2.5E+01	n					6.0E-01	n		9.3E-02	n	
				7.5E-03	I					1	0.1		Tralomethrin	66841-25-6	4.7E+02	n	6.2E+03	n					1.5E+02	n		5.8E+01	n	
				3.0E-04	A			V		1			Tri-n-butyltin	688-73-3	2.3E+01	n	3.5E+02	n					3.7E+00	n		8.2E-02	n	
				8.0E+01	X					1	0.1		Triacetin	102-76-1	5.1E+06	nm	6.6E+07	nm					1.6E+06	n		4.5E+02	n	
				3.4E-02	O					1	0.1		Triadimefon	43121-43-3	2.1E+03	n	2.8E+04	n					6.3E+02	n		5.0E-01	n	
7.2E-02	O			2.5E-02	O			V		1			Triallate	2303-17-5	9.7E+00	c	4.6E+01	c					4.7E-01	c		1.0E-03	c	
				1.0E-02	I					1	0.1		Triasulfuron	82097-50-5	6.3E+02	n	8.2E+03	n					2.0E+02	n		2.1E-01	n	
				8.0E-03	I					1	0.1		Tribenuron-methyl	101200-48-0	5.1E+02	n	6.6E+03	n					1.6E+02	n		6.1E-02	n	
				5.0E-03	I			V		1			Tribromobenzene, 1,2,4-	615-54-3	3.9E+02	n	5.8E+03	n					4.5E+01	n		6.4E-02	n	
				9.0E-03	X					1	0.1		Tribromophenol, 2,4,6-	118-79-6	5.7E+02	n	7.4E+03	n					1.2E+02	n		2.2E-01	n	
				2.0E-04	O					1	0.1		Tribufos	78-48-8	1.3E+01	n	1.6E+02	n					5.7E-01	n		2.8E-03	n	
9.0E-03	P			1.0E-02	P					1	0.1		Tributyl Phosphate	126-73-8	6.0E+01	c*	2.6E+02	c*					5.2E+00	c*		2.5E-02	c*	
				3.0E-04	P					1	0.1		Tributyltin Compounds	E1790678	1.9E+01	n	2.5E+02	n					6.0E+00	n				
				3.0E-04	I					1	0.1		Tributyltin Oxide	56-35-9	1.9E+01	n	2.5E+02	n					5.7E+00	n		2.9E+02	n	
													Trichloramine	10025-85-1											4.0E+03(G)			
				3.0E+01	I	5.0E+00	P	V		1		9.1E+02	Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	6.7E+03	ns	2.8E+04	ns	5.2E+03	n	2.2E+04	n	1.0E+04	n		2.6E+01	n	
7.0E-02	I			2.0E-02	I					1	0.1		Trichloroacetic Acid	76-03-9	7.8E+00	c	3.3E+01	c					1.1E+00	c	6.0E+01(G)	2.2E-04	c	1.2E-02
2.9E-02	H									1	0.1		Trichloroaniline HCl, 2,4,6-	33663-50-2	1.9E+01	c	7.9E+01	c					2.7E+00	c		7.4E-03	c	

TR=1E-06
HQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied ; c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information												Contaminant		Screening Levels												Protection of Ground Water SSLs		
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	GIABS	ABS_d	C_{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m^3)	key	Industrial Air (ug/m^3)	key	Tapwater (ug/L)	key	MCL (ug/L)	Risk-based SSL (mg/kg)	key	MCL-based SSL (mg/kg)
7.0E-03	X			3.0E-05	X					1	0.1		Trichloroaniline, 2,4,6-	634-93-5	1.9E+00	n	2.5E+01	n				4.0E-01	n		3.6E-03	n	
				8.0E-04	X			V		1			Trichlorobenzene, 1,2,3-	87-61-6	6.3E+01	n	9.3E+02	n				7.0E+00	n		2.1E-02	n	
2.9E-02	P			1.0E-02	I	2.0E-03	P	V		1		4.0E+02	Trichlorobenzene, 1,2,4-	120-82-1	2.4E+01	c**	1.1E+02	c**	2.1E+00	n	8.8E+00	n	1.2E+00	c**	7.0E+01	3.4E-03	c**	2.0E-01
				2.0E+00	I	5.0E+00	I	V		1		6.4E+02	Trichloroethane, 1,1,1-	71-55-6	8.1E+03	ns	3.6E+04	ns	5.2E+03	n	2.2E+04	n	8.0E+03	n	2.0E+02	2.8E+00	n	7.0E-02
5.7E-02	I	1.6E-05	I	4.0E-03	I	2.0E-04	X	V		1		2.2E+03	Trichloroethane, 1,1,2-	79-00-5	1.1E+00	c**	5.0E+00	c**	1.8E-01	c**	7.7E-01	c**	2.8E-01	c**	5.0E+00	8.9E-05	c**	1.6E-03
4.6E-02	I	4.1E-06	I	5.0E-04	I	2.0E-03	I	V	M	1		6.9E+02	Trichloroethylene	79-01-6	9.4E-01	c**	6.0E+00	c**	4.8E-01	c**	3.0E+00	c**	4.9E-01	c**	5.0E+00	1.8E-04	c**	1.8E-03
				3.0E-01	I			V		1		1.2E+03	Trichlorofluoromethane	75-69-4	2.3E+04	ns	3.5E+05	nms				5.2E+03	n		3.3E+00	n	
				1.0E-01	I					1	0.1		Trichlorophenol, 2,4,5-	95-95-4	6.3E+03	n	8.2E+04	n				1.2E+03	n		4.0E+00	n	
1.1E-02	I	3.1E-06	I	1.0E-03	P					1	0.1		Trichlorophenol, 2,4,6-	88-06-2	4.9E+01	c**	2.1E+02	c**	9.1E-01	c	4.0E+00	c	4.1E+00	c**		4.0E-03	c**	
				1.0E-02	I					1	0.1		Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	6.3E+02	n	8.2E+03	n				1.6E+02	n		6.8E-02	n	
				8.0E-03	I					1	0.1		Trichlorophenoxypropionic acid, -2,4,5	93-72-1	5.1E+02	n	6.6E+03	n				1.1E+02	n	5.0E+01	6.1E-02	n	2.8E-02
				5.0E-03	I			V		1		1.3E+03	Trichloropropane, 1,1,2-	598-77-6	3.9E+02	n	5.8E+03	ns				8.8E+01	n		3.5E-02	n	
3.0E+01	I			4.0E-03	I	3.0E-04	I	V	M	1		1.4E+03	Trichloropropane, 1,2,3-	96-18-4	5.1E-03	c	1.1E-01	c	3.1E-01	n	1.3E+00	n	7.5E-04	c		3.2E-07	c	
				3.0E-03	X	3.0E-04	P	V		1		3.1E+02	Trichloropropene, 1,2,3-	96-19-5	7.3E-01	n	3.1E+00	n	3.1E-01	n	1.3E+00	n	6.2E-01	n		3.1E-04	n	
				2.0E-02	A					1	0.1		Tricresyl Phosphate (TCP)	1330-78-5	1.3E+03	n	1.6E+04	n				1.6E+02	n		1.5E+01	n	
				3.0E-03	I					1	0.1		Tridiphane	58138-08-2	1.9E+02	n	2.5E+03	n				1.8E+01	n		1.3E-01	n	
						7.0E-03	I	V		1		2.8E+04	Triethylamine	121-44-8	1.2E+02	n	4.8E+02	n	7.3E+00	n	3.1E+01	n	1.5E+01	n		4.4E-03	n	
				2.0E+00	P					1	0.1		Triethylene Glycol	112-27-6	1.3E+05	nm	1.6E+06	nm				4.0E+04	n		8.8E+00	n	
						2.0E+01	P	V		1		4.8E+03	Trifluoroethane, 1,1,1-	420-46-2	1.5E+04	ns	6.2E+04	ns	2.1E+04	n	8.8E+04	n	4.2E+04	n		1.3E+02	n	
7.7E-03	I			7.5E-03	I			V		1			Trifluralin	1582-09-8	9.0E+01	c**	4.2E+02	c*				2.6E+00	c*		8.4E-02	c*	
2.0E-02	P			1.0E-02	P					1	0.1		Trimethyl Phosphate	512-56-1	2.7E+01	c*	1.1E+02	c*				3.9E+00	c*		8.6E-04	c*	
				1.0E-02	I	6.0E-02	I	V		1		2.9E+02	Trimethylbenzene, 1,2,3-	526-73-8	3.4E+02	ns	2.0E+03	ns	6.3E+01	n	2.6E+02	n	5.5E+01	n		8.1E-02	n	
				1.0E-02	I	6.0E-02	I	V		1		2.2E+02	Trimethylbenzene, 1,2,4-	95-63-6	3.0E+02	ns	1.8E+03	ns	6.3E+01	n	2.6E+02	n	5.6E+01	n		8.1E-02	n	
				1.0E-02	I	6.0E-02	I	V		1		1.8E+02	Trimethylbenzene, 1,3,5-	108-67-8	2.7E+02	ns	1.5E+03	ns	6.3E+01	n	2.6E+02	n	6.0E+01	n		8.7E-02	n	
				1.0E-02	X			V		1		3.0E+01	Trimethylpentene, 2,4,4-	25167-70-8	7.8E+02	ns	1.2E+04	ns				3.8E+01	n		1.3E-01	n	
				3.0E-02	I					1	0.019		Trinitrobenzene, 1,3,5-	99-35-4	2.2E+03	n	3.2E+04	n				5.9E+02	n		2.1E+00	n	
3.0E-02	I			5.0E-04	I					1	0.032		Trinitrotoluene, 2,4,6-	118-96-7	2.1E+01	c**	9.6E+01	c**				2.5E+00	c**		1.5E-02	c**	
				2.0E-02	P					1	0.1		Triphenylphosphine Oxide	791-28-6	1.3E+03	n	1.6E+04	n				3.6E+02	n		1.5E+00	n	
				2.0E-02	A					1	0.1		Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	1.3E+03	n	1.6E+04	n				3.6E+02	n		8.0E+00	n	
				1.0E-02	X					1	0.1		Tris(1-chloro-2-propyl)phosphate	13674-84-5	6.3E+02	n	8.2E+03	n				1.9E+02	n		6.5E-01	n	
2.3E+00	C	6.6E-04	C					V		1		4.7E+02	Tris(2,3-dibromopropyl)phosphate	126-72-7	2.8E-01	c	1.3E+00	c	4.3E-03	c	1.9E-02	c	6.8E-03	c		1.3E-04	c	
2.0E-02	P			7.0E-03	P					1	0.1		Tris(2-chloroethyl)phosphate	115-96-8	2.7E+01	c*	1.1E+02	c*				3.8E+00	c*		3.8E-03	c*	
3.2E-03	P			1.0E-01	P					1	0.1		Tris(2-ethylhexyl)phosphate	78-42-2	1.7E+02	c*	7.2E+02	c				2.4E+01	c*		1.2E+02	c*	
				8.0E-04	P					1			Tungsten	7440-33-7	6.3E+01	n	9.3E+02	n				1.6E+01	n		2.4E+00	n	
				2.0E-04	A	4.0E-05	A			1			Uranium	7440-61-1	1.6E+01	n	2.3E+02	n	4.2E-02	n	1.8E-01	n	4.0E+00	n	3.0E+01	1.8E+00	n	1.4E+01
1.0E+00	C	2.9E-04	C						M	1	0.1		Urethane	51-79-6	1.2E-01	c	2.3E+00	c	3.5E-03	c	4.2E-02	c	2.5E-02	c		5.6E-06	c	
		8.3E-03	P	9.0E-03	I	7.0E-06	P			0.026			Vanadium Pentoxide	1314-62-1	4.6E+02	c**	2.0E+03	c**	3.4E-04	c*	1.5E-03	c*	1.5E+02	n				
				5.0E-03	G	1.0E-04	A			0.026			Vanadium and Compounds	7440-62-2	3.9E+02	n	5.8E+03	n	1.0E-01	n	4.4E-01	n	8.6E+01	n		8.6E+01	n	
				1.0E-03	I			V		1			Vernolate	1929-77-7	7.8E+01	n	1.2E+03	n				1.1E+01	n		8.9E-03	n	
				1.2E-03	O					1	0.1		Vinclozolin	50471-44-8	7.6E+01	n	9.8E+02	n				2.1E+01	n		1.6E-02	n	
				1.0E+00	H	2.0E-01	I	V		1		2.8E+03	Vinyl Acetate	108-05-4	9.1E+02	n	3.8E+03	ns	2.1E+02	n	8.8E+02	n	4.1E+02	n		8.7E-02	n	
		1.5E-05	P			3.0E-03	I	V		1		2.5E+03	Vinyl Bromide	593-60-2	2.6E-01	c*	1.1E+00	c*	1.9E-01	c*	8.2E-01	c*	3.7E-01	c*		1.1E-04	c*	
7.2E-01	I	4.4E-06	I	3.0E-03	I	8.0E-02	A	V	M	1		3.9E+03	Vinyl Chloride	75-01-4	5.9E-02	c	1.7E+00	c	1.7E-01	c	2.8E+00	c	1.9E-02	c	2.0E+00	6.5E-06	c	6.9E-04
				3.0E-04	I					1	0.1		Warfarin	81-81-2	1.9E+01	n	2.5E+02	n				5.6E+00	n		5.9E-03	n	
				2.0E-01	G	1.0E-01	G	V		1		3.9E+02	Xylene, m-	108-38-3	5.5E+02	ns	2.4E+03	ns	1.0E+02	n	4.4E+02	n	1.9E+02	n		1.9E-01	n	
				2.0E-01	G	1.0E-01	G	V		1		4.3E+02	Xylene, o-	95-47-6	6.4E+02	ns	2.8E+03	ns	1.0E+02	n	4.4E+02	n	1.9E+02	n		1.9E-01	n	
				2.0E-01	G	1.0E-01	G	V		1		3.9E+02	Xylene, p-	106-42-3	5.6E+02	ns	2.4E+03	ns	1.0E+02	n	4.4E+02	n	1.9E+02	n		1.9E-01	n	
				2.0E-01	I	1.0E-01	I	V		1		2.6E+02	Xylenes	1330-20-7	5.8E+02	ns	2.5E+03	ns	1.0E+02	n	4.4E+02	n	1.9E+02	n	1.0E+04	1.9E-01	n	9.9E+00
				3.0E-04	I					1			Zinc Phosphide	1314-84-7	2.3E+01	n	3.5E+02	n				6.0E+00	n				
				3.0E-01	I					1			Zinc and Compounds	7440-66-6	2.3E+04	n	3.5E+05	nm				6.0E+03	n		3.7E+02	n	
				5.0E-02	I					1	0.1		Zineb	12122-67-7	3.2E+03	n	4.1E+04	n				9.9E+02	n		2.9E+00	n	
				8.0E-05	X					1			Zirconium	7440-67-7	6.3E+00	n	9.3E+01	n				1.6E+00	n		4.8E+00	n	

TR=1E-06
THQ=1.0

NSW EPA

Waste Classification Guidelines
Part 1: Classifying waste

November 2014

Table 1: CT1 & CT2 values for classifying waste by chemical assessment without the TCLP test

For disposal requirements for organic and inorganic chemical contaminants not listed below, contact the EPA. Aluminium, barium, boron, chromium (0 and III oxidation states), cobalt, copper, iron, manganese, vanadium and zinc have not been listed with values in this table and need not be tested for.

	Maximum values of *specific contaminant concentration* (SCC) for classification without TCLP		
	General solid waste[1]	**Restricted solid waste**	
Contaminant	**CT1 (mg/kg)**	**CT2 (mg/kg)**	**CAS Registry Number**
Arsenic	100	400	
Benzene	10	40	71-43-2
Benzo(a)pyrene[2]	0.8	3.2	50-32-8
Beryllium	20	80	
Cadmium	20	80	
Carbon tetrachloride	10	40	56-23-5
Chlorobenzene	2,000	8,000	108-90-7
Chloroform	120	480	67-66-3
Chlorpyrifos	4	16	2921-88-2
Chromium (VI)[3]	100	400	
m-Cresol	4,000	16,000	108-39-4
o-Cresol	4,000	16,000	95-48-7
p-Cresol	4,000	16,000	106-44-5
Cresol (total)	4,000	16,000	1319-77-3
Cyanide (amenable)[4]	70	280	
Cyanide (total)	320	1,280	
2,4-D	200	800	94-75-7
1,2-Dichlorobenzene	86	344	95-50-1
1,4-Dichlorobenzene	150	600	106-46-7
1,2-Dichloroethane	10	40	107-06-2
1,1-Dichloroethylene	14	56	75-35-4
Dichloromethane	172	688	75-09-2
2,4-Dinitrotoluene	2.6	10.4	121-14-2
Endosulfan[5]	60	240	See below[5]
Ethylbenzene	600	2,400	100-41-4
Fluoride	3,000	12,000	
Fluroxypyr	40	160	69377-81-7
Lead	100	400	

Contaminant	Maximum values of *specific contaminant concentration* (SCC) for classification without TCLP		CAS Registry Number
	General solid waste[1]	Restricted solid waste	
	CT1 (mg/kg)	CT2 (mg/kg)	
Mercury	4	16	
Methyl ethyl ketone	4,000	16,000	78-93-3
Moderately harmful pesticides[6] (total)	250	1,000	See below[6]
Molybdenum	100	400	
Nickel	40	160	
Nitrobenzene	40	160	98-95-3
C6–C9 petroleum hydrocarbons[7]	650	2,600	
C10–C36 petroleum hydrocarbons[7]	10,000	40,000	
Phenol (non-halogenated)	288	1,152	108-95-2
Picloram	60	240	1918-02-1
Plasticiser compounds[8]	20	80	See below[8]
Polychlorinated biphenyls[9]	<50	<50	1336-36-3
Polycyclic aromatic hydrocarbons (total)[10]	200	800	
Scheduled chemicals[11]	<50	<50	
Selenium	20	80	
Silver	100	400	
Styrene (vinyl benzene)	60	240	100-42-5
Tebuconazole	128	512	107534-96-3
1,2,3,4-Tetrachlorobenzene	10	40	634-66-2
1,1,1,2-Tetrachloroethane	200	800	630-20-6
1,1,2,2-Tetrachloroethane	26	104	79-34-5
Tetrachloroethylene	14	56	127-18-4
Toluene	288	1,152	108-88-3
1,1,1-Trichloroethane	600	2,400	71-55-6
1,1,2-Trichloroethane	24	96	79-00-5
Trichloroethylene	10	40	79-01-6
2,4,5-Trichlorophenol	8,000	32,000	95-95-4
2,4,6-Trichlorophenol	40	160	88-06-2
Triclopyr	40	160	55335-06-3

Contaminant	Maximum values of *specific contaminant concentration* (SCC) for classification without TCLP		CAS Registry Number
	General solid waste[1]	Restricted solid waste	
	CT1 (mg/kg)	CT2 (mg/kg)	
Vinyl chloride	4	16	75-01-4
Xylenes (total)	1,000	4,000	1330-20-7

Notes

1. Values are the same for general solid waste (putrescible) and general solid waste (non-putrescible).
2. There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence.
3. These limits apply to chromium in the +6 oxidation state only.
4. Analysis for cyanide (amenable) is the established method for assessing potentially leachable cyanide. The EPA may consider other methods if it can be demonstrated that these methods yield the same information.
5. Endosulfan (CAS Registry Number 115-29-7) means the total of Endosulfan I (CAS Registry Number 959-98-8), Endosulfan II (CAS Registry Number 891-86-1) and Endosulfan sulfate (CAS Registry Number 1031-07-8).
6. The following moderately harmful pesticides are to be included in the total values specified:

Moderately harmful pesticides (total)			
Name	CAS Registry Number	Name	CAS Registry Number
Atrazine	1912-24-9	Imidacloprid	138261-41-3
Azoxystrobin	131860-33-8	Indoxacarb	173584-44-6
Bifenthrin	82657-04-3	Malathion (Maldison)	121-75-5
Brodifacoum	56073-10-0	Metalaxyl	57837-19-1
Carboxin	5234-68-4	Metalaxyl-M	70630-17-0
Copper naphthenate	1338-02-9	Methidathion	950-37-8
Cyfluthrin	68359-37-5	3-Methyl-4-chlorophenol	59-50-7
Cyhalothrin	68085-85-8	Methyl chlorpyrifos	5598-13-0
Cypermethrin	52315-07-08	N-Methyl pyrrolidone	872-50-4
Deltamethrin	52918-63-5	2-octylthiazol-3-one	26530-20-1
Dichlofluanid	1085-98-9	Oxyfluorfen	42874-03-3
Dichlorvos	62-73-7	Paraquat dichloride	1910-42-5
Difenoconazole	119446-68-3	Parathion methyl	298-00-0
Dimethoate	60-51-5	Permethrin	52645-53-1
Diquat dibromide	85-00-7	Profenofos	41198-08-7
Emamectin benzoate	137515-75-4 & 155569-91-8	Prometryn	7287-19-6
Ethion	563-12-2	Propargite	2312-35-8
Fenthion	55-38-9	Pentachloronitrobenzene (Quintozene)	82-68-8
Fenitrothion	122-14-5	Simazine	122-34-9
Fipronil	120068-37-3	Thiabendazole	148-79-8

Moderately harmful pesticides (total)			
Name	**CAS Registry Number**	**Name**	**CAS Registry Number**
Fluazifop-P-butyl	79241-46-6	Thiamethoxam	153719-23-4
Fludioxonil	131341-86-1	Thiodicarb	59669-26-0
Glyphosate	1071-83-6	Thiram	137-26-8

7. Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Laboratory results are reported as four different fractions: C6–C9, C10–C14, C15–C28 and C29–C36. The results of total petroleum hydrocarbons (TPH) (C10–C36) analyses are reported as a sum of the relevant three fractions. Please note that hydrocarbons are defined as molecules that only contain carbon and hydrogen atoms. Prior to TPH (C10–C36) analysis, clean-up may be necessary to remove non-petroleum hydrocarbon compounds. Where the presence of other materials that will interfere with the analysis may be present, such as oils and fats from food sources, you are advised to treat the extract that has been solvent exchanged to hexane with silica gel as described in *USEPA Method 1664A* (USEPA 2000).
8. Plasticiser compounds means the total of di-2-ethyl hexyl phthalate (CAS Registry Number 117-81-7) and di-2-ethyl hexyl adipate (CAS Registry Number 103-23-1) contained within a waste.
9. Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997, which is available on the EPA website at www.epa.nsw.gov.au/resources/pesticides/pcbcco1997.pdf.
10. The following polycyclic aromatic hydrocarbons (PAHs) are assessed as the total concentration of 16 USEPA Priority Pollutant PAHs, as follows:

Polycyclic aromatic hydrocarbons (total)			
PAH name	**CAS Registry Number**	**PAH name**	**CAS Registry Number**
Acenaphthene	83-32-9	Chrysene	218-01-9
Acenaphthylene	208-96-8	Dibenzo(a,h)anthracene	53-70-3
Anthracene	120-12-7	Fluoranthene	206-44-0
Benzo(a)anthracene	56-55-3	Fluorene	86-73-7
Benzo(a)pyrene	50-32-8	Indeno(1,2,3-cd)pyrene	193-39-5
Benzo(b)fluoranthene	205-99-2	Naphthalene	91-20-3
Benzo(ghi)perylene	191-24-2	Phenanthrene	85-01-8
Benzo(k)fluoranthene	207-08-9	Pyrene	129-00-0

11. Scheduled chemicals must be managed in accordance with the EPA's scheduled chemical wastes chemical control order 2004, which is available on the EPA website at www.epa.nsw.gov.au/resources/pesticides/scwcco2004.pdf.

    The following scheduled chemicals are to be included in the total values specified:

Scheduled chemicals (total)			
Name	**CAS Registry Number**	**Name**	**CAS Registry Number**
Aldrin	309-00-2	Heptachlor	76-44-8
Alpha-BHC	319-84-6	Heptachlor epoxide	1024-57-3
Beta-BHC	319-85-7	Hexachlorobenzene	118-74-1
Gamma-BHC (Lindane)	58-89-9	Hexachlorophene	70-30-4
Delta-BHC	319-86-8	Isodrin	465-73-6

Scheduled chemicals (total)			
Name	**CAS Registry Number**	**Name**	**CAS Registry Number**
Chlordane	57-74-9	Pentachlorobenzene	608-93-5
DDD	72-54-8	Pentachloronitrobenzene	82-68-8
DDE	72-55-9	Pentachlorophenol	87-86-5
DDT	50-29-3	1,2,4,5-Tetrachlorobenzene	95-94-3
Dieldrin	60-57-1	2,3,4,6-Tetrachlorophenol	58-90-2
Endrin	72-20-8	1,2,4-Trichlorobenzene	120-82-1
Endrin aldehyde	7421-93-4	2,4,5-Trichlorophenoxyacetic acid, salts and esters	93-76-5

Table 2: TCLP and SCC values for classifying waste by chemical assessment

For disposal requirements for organic and inorganic chemical contaminants not listed below, contact the EPA. Aluminium, barium, boron, chromium (0 and III oxidation states), cobalt, copper, iron, manganese, vanadium and zinc have not been listed with values in this table and need not be tested for.

Contaminant	Maximum values for *leachable concentration* and *specific contaminant concentration* when used together				CAS Registry Number
	General solid waste[1]		Restricted solid waste		
	Leachable concentration	Specific contaminant concentration	Leachable concentration	Specific contaminant concentration	
	TCLP1 (mg/L)	SCC1 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)	
Arsenic	5.0[2]	500	20	2,000	
Benzene	0.5[2]	18	2	72	71-43-2
Benzo(a)pyrene[3]	0.04[4]	10	0.16	23	50-32-8
Beryllium	1.0[5]	100	4	400	
Cadmium	1.0[2]	100	4	400	
Carbon tetrachloride	0.5[2]	18	2	72	56-23-5
Chlorobenzene	100[2]	3,600	400	14,400	108-90-7
Chloroform	6[2]	216	24	864	67-66-3
Chlorpyrifos	0.2	7.5	0.8	30	2921-88-2
Chromium (VI)[6]	5[2]	1,900	20	7,600	
m-Cresol	200[2]	7,200	800	28,800	108-39-4
o-Cresol	200[2]	7,200	800	28,800	95-48-7
p-Cresol	200[2]	7,200	800	28,800	106-44-5
Cresol (total)	200[2]	7,200	800	28,800	1319-77-3
Cyanide (amenable)[7, 8]	3.5[7]	300	14	1,200	
Cyanide (total)[7]	16[7]	5,900	64	23,600	
2,4-D	10[2]	360	40	1,440	94-75-7
1,2-Dichlorobenzene	4.3[2]	155	17.2	620	95-50-1
1,4-Dichlorobenzene	7.5[2]	270	30	1,080	106-46-7
1,2-Dichloroethane	0.5[2]	18	2	72	107-06-2
1,1-Dichloroethylene	0.7[2]	25	2.8	100	75-35-4
Dichloromethane	8.6[2]	310	34.4	1,240	75-09-2
2,4-Dinitrotoluene	0.13[2]	4.68	0.52	18.7	121-14-2
Endosulfan[9]	3	108	12	432	See below[9]

Contaminant	Maximum values for *leachable concentration* and *specific contaminant concentration* when used together				CAS Registry Number
	General solid waste[1]		Restricted solid waste		
	Leachable concentration	Specific contaminant concentration	Leachable concentration	Specific contaminant concentration	
	TCLP1 (mg/L)	SCC1 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)	
Ethylbenzene	30[10]	1,080	120	4,320	100-41-4
Fluoride	150[10]	10,000	600	40,000	
Fluroxypyr	2	75	8	300	69377-81-7
Lead	5[2]	1,500	20	6,000	
Mercury	0.2[2]	50	0.8	200	
Methyl ethyl ketone	200[2]	7,200	800	28,800	78-93-3
Moderately harmful pesticides[11](total)	N/A[12]	250	N/A[12]	1,000	See below[11]
Molybdenum	5[10]	1,000	20	4,000	
Nickel	2[10]	1,050	8	4,200	
Nitrobenzene	2[2]	72	8	288	98-95-3
C6–C9 petroleum hydrocarbons[13]	N/A[12]	650	N/A[12]	2,600	
C10–C36 petroleum hydrocarbons[13]	N/A[12]	10,000	N/A[12]	40,000	
Phenol (non-halogenated)	14.4[14]	518	57.6	2,073	108-95-2
Picloram	3	110	12	440	1918-02-1
Plasticiser compounds[15]	1	600	4	2,400	See below[15]
Polychlorinated biphenyls[12]	N/A[12]	< 50	N/A[12]	< 50	1336-36-3
Polycyclic aromatic hydrocarbons (total)[16]	N/A[12]	200	N/A[12]	800	
Scheduled chemicals[17]	N/A[12]	< 50	N/A[12]	< 50	See below[17]
Selenium	1[2]	50	4	200	
Silver	5.0[2]	180	20	720	
Styrene (vinyl benzene)	3[10]	108	12	432	100-42-5
Tebuconazole	6.4	230	25.6	920	107534-96-3
1,2,3,4-Tetrachlorobenzene	0.5	18	2	72	634-66-2

Contaminant	Maximum values for *leachable concentration* and *specific contaminant concentration* when used together				CAS Registry Number
	General solid waste[1]		Restricted solid waste		
	Leachable concentration	Specific contaminant concentration	Leachable concentration	Specific contaminant concentration	
	TCLP1 (mg/L)	SCC1 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)	
1,1,1,2-Tetrachloroethane	10[2]	360	40	1,440	630-20-6
1,1,2,2-Tetrachloroethane	1.3[2]	46.8	5.2	187.2	79-34-5
Tetrachloroethylene	0.7[2]	25.2	2.8	100.8	127-18-4
Toluene	14.4[14]	518	57.6	2,073	108-88-3
1,1,1-Trichloroethane	30[2]	1,080	120	4,320	71-55-6
1,1,2-Trichloroethane	1.2[2]	43.2	4.8	172.8	79-00-5
Trichloroethylene	0.5[2]	18	2	72	79-01-6
2,4,5-Trichlorophenol	400[2]	14,400	1,600	57,600	95-95-4
2,4,6-Trichlorophenol	2[2]	72	8	288	88-06-2
Triclopyr	2	75	8	300	55335-06-3
Vinyl chloride	0.2[2]	7.2	0.8	28.8	75-01-4
Xylenes (total)	50[18]	1,800	200	7,200	1330-20-7

Notes

1. Values are the same for general solid waste (putrescible) and general solid waste (non- putrescible).
2. See *Hazardous Waste Management System: Identification and Listing of Hazardous Waste – Toxicity Characteristics Revisions, Final Rule* (USEPA 2012b) for TCLP levels.
3. There may be a need for the laboratory to concentrate the sample to achieve the TCLP limit value for benzo(a)pyrene with confidence.
4. Calculated from *Hazardous Waste: Identification and Listing* (USEPA 2012a).
5. Calculated from 'Beryllium' in *The Health Risk Assessment and Management of Contaminated Sites* (DiMarco & Buckett 1996).
6. These limits apply to chromium in the +6 oxidation state only.
7. Taken from the *Land Disposal Restrictions for Newly Identified and Listed Hazardous Wastes and Hazardous Soil: Proposed Rule* (USEPA 1993).
8. Analysis for cyanide (amenable) is the established method used to assess the potentially leachable cyanide. The EPA may consider other methods if it can be demonstrated that these methods yield the same information.
9. Endosulfan (CAS Registry Number 115-29-7) means the total of endosulfan I (CAS Registry Number 959-98-8), endosulfan II (CAS Registry Number 891-86-1) and endosulfan sulfate (CAS Registry Number 1031-07-8).
10. Calculated from *Australian Drinking Water Guidelines* (NHMRC 2011).
11. The following moderately harmful pesticides are to be included in the total values specified:

Moderately harmful pesticides (total)			
Name	**CAS Registry Number**	**Name**	**CAS Registry Number**
Atrazine	1912-24-9	Imidacloprid	138261-41-3
Azoxystrobin	131860-33-8	Indoxacarb	173584-44-6
Bifenthrin	82657-04-3	Malathion (Maldison)	121-75-5
Brodifacoum	56073-10-0	Metalaxyl	57837-19-1
Carboxin	5234-68-4	Metalaxyl-M	70630-17-0
Copper naphthenate	1338-02-9	Methidathion	950-37-8
Cyfluthrin	68359-37-5	3-Methyl-4-chlorophenol	59-50-7
Cyhalothrin	68085-85-8	Methyl chlorpyrifos	5598-13-0
Cypermethrin	52315-07-08	N-Methyl pyrrolidone	872-50-4
Deltamethrin	52918-63-5	2-octylthiazol-3-one	26530-20-1
Dichlofluanid	1085-98-9	Oxyfluorfen	42874-03-3
Dichlorvos	62-73-7	Paraquat dichloride	1910-42-5
Difenoconazole	119446-68-3	Parathion methyl	298-00-0
Dimethoate	60-51-5	Permethrin	52645-53-1
Diquat dibromide	85-00-7	Profenofos	41198-08-7
Emamectin benzoate	137515-75-4 & 155569-91-8	Prometryn	7287-19-6
Ethion	563-12-2	Propargite	2312-35-8
Fenthion	55-38-9	Pentachloronitrobenzene (Quintozene)	82-68-8
Fenitrothion	122-14-5	Simazine	122-34-9
Fipronil	120068-37-3	Thiabendazole	148-79-8
Fluazifop-P-butyl	79241-46-6	Thiamethoxam	153719-23-4
Fludioxonil	131341-86-1	Thiodicarb	59669-26-0
Glyphosate	1071-83-6	Thiram	137-26-8

12. No TCLP analysis is required. Moderately harmful pesticides, petroleum hydrocarbons, polychlorinated biphenyls, polycyclic aromatic hydrocarbons and scheduled chemicals are assessed using SCC1 and SCC2.

    Polychlorinated biphenyls must be managed in accordance with the EPA's polychlorinated biphenyl (PCB) chemical control order 1997, which is available on the EPA website at www.epa.nsw.gov.au/resources/pesticides/pcbcco1997.pdf.

13. Approximate range of petroleum hydrocarbon fractions: petrol C6–C9, kerosene C10–C18, diesel C12–C18, and lubricating oils above C18. Laboratory results are reported as four different fractions: C6–C9, C10–C14, C15–C28 and C29–C36. The results of total petroleum hydrocarbons (C10–C36) analyses are reported as a sum of the relevant three fractions. Please note that hydrocarbons are defined as molecules that only contain carbon and hydrogen atoms. Prior to TPH (C10–C36) analysis, clean-up may be necessary to remove non-petroleum hydrocarbon compounds. Where the presence of other materials that will interfere with the analysis may be present, such as oils and fats from food sources, you are advised to treat the extract that has been solvent exchanged to hexane with silica gel as described in USEPA *Method 1664A* (USEPA 2000).
14. Proposed level for phenol and toluene in *Hazardous Waste Management System: Identification and Listing of Hazardous Waste – Toxicity Characteristics Revisions, Final Rule* (USEPA 2012b).

15. Plasticiser compounds means the total of di-2-ethyl hexyl phthalate (CAS Registry Number 117-81-7) and di-2-ethyl hexyl adipate (CAS Registry Number 103-23-1) contained within a waste.
16. The following polycyclic aromatic hydrocarbons are assessed as the total concentration of 16 USEPA Priority Pollutant PAHs, as follows:

Polycyclic aromatic hydrocarbons (total)			
PAH name	**CAS Registry Number**	**PAH name**	**CAS Registry Number**
Acenaphthene	83-32-9	Chrysene	218-01-9
Acenaphthylene	208-96-8	Dibenzo(a,h)anthracene	53-70-3
Anthracene	120-12-7	Fluoranthene	206-44-0
Benzo(a)anthracene	56-55-3	Fluorene	86-73-7
Benzo(a)pyrene	50-32-8	Indeno(1,2,3-cd)pyrene	193-39-5
Benzo(b)fluoranthene	205-99-2	Naphthalene	91-20-3
Benzo(ghi)perylene	191-24-2	Phenanthrene	85-01-8
Benzo(k)fluoranthene	207-08-9	Pyrene	129-00-0

17. Scheduled chemicals must be managed in accordance with the EPA's scheduled chemical wastes chemical control order 2004, which is available on the EPA website at www.epa.nsw.gov.au/resources/pesticides/scwcco2004.pdf.

    The following scheduled chemicals are to be included in the total values specified:

Scheduled chemicals (total)			
Name	**CAS Registry Number**	**Name**	**CAS Registry Number**
Aldrin	309-00-2	Heptachlor	76-44-8
Alpha-BHC	319-84-6	Heptachlor epoxide	1024-57-3
Beta-BHC	319-85-7	Hexachlorobenzene	118-74-1
Gamma-BHC (Lindane)	58-89-9	Hexachlorophene	70-30-4
Delta-BHC	319-86-8	Isodrin	465-73-6
Chlordane	57-74-9	Pentachlorobenzene	608-93-5
DDD	72-54-8	Pentachloronitrobenzene	82-68-8
DDE	72-55-9	Pentachlorophenol	87-86-5
DDT	50-29-3	1,2,4,5-Tetrachlorobenzene	95-94-3
Dieldrin	60-57-1	2,3,4,6-Tetrachlorophenol	58-90-2
Endrin	72-20-8	1,2,4-Trichlorobenzene	120-82-1
Endrin aldehyde	7421-93-4	2,4,5-Trichlorophenoxyacetic acid, salts and esters	93-76-5

18. Calculated from *Guidelines for Drinking Water Quality* (WHO 2011).

Table 3: Summary of criteria for chemical assessment to determine waste classification

Waste classification	Criteria[1] for classification by chemical assessment (any of the alternative options given)	Comments
General solid waste	1. SCC test values ≤ CT1	TCLP test not required
	2. TCLP test values ≤ TCLP1 and SCC test values ≤ SCC1	
	3. TCLP test values ≤ TCLP1 and SCC test values > SCC1[2]	Classify as restricted solid or hazardous (as applicable) If immobilisation approval applies, classify in accordance with that approval
Restricted solid waste	1. SCC test values ≤ CT2	TCLP test not required
	2. TCLP1 < TCLP test values ≤ TCLP2 and SCC test values ≤ SCC2	
	3.TCLP test values ≤ TCLP2 and SCC1 < SCC test values ≤ SCC2	
	4. TCLP1 < TCLP test values ≤ TCLP2 and SCC test values > SCC2[2]	Classify as hazardous. If immobilisation approval applies, classify in accordance with that approval
Hazardous waste	1. TCLP test values > TCLP 2	
	2. TCLP test values ≤ TCLP2 and SCC test values > SCC2	Classify as hazardous if no immobilization approval applies

Notes

1. These criteria apply to each toxic and ecotoxic contaminant present in the waste (see Tables 1 and 2).
2. In certain cases the EPA will consider specific conditions, such as segregation of the waste from all other types of waste in a monofill or monocell in order to achieve a greater margin of safety against a possible failure of the immobilisation in the future. Information about the construction and operation of a monofill/monocell is available in the *Draft Environmental Guidelines for Industrial Waste Landfilling* (EPA 1998).

APPENDIX I

LABORATORY TECHNICAL INFORMATION

Aargus

Recommended Holding Times and Preservations for Soil and Air

APPLICABLE LOCATIONS

The bottles, preservation and holding times following are for the ALS Environmental operations excluding the ALS Water Resources Group (WRG). The ALS operations covered by this document include;

Adelaide
Unit 2, 1 Burma Road
Pooraka, Adelaide, SA 5095
P +6- 8-8162-5130
ALSEnviro.Adelaide@alsglobal.com

Brisbane
2 Byth Street (Corner Byth and Shand St)
Stafford QLD 4053
P +61-7-3243-7222
ALSEnviro.Brisbane@alsglobal.com

Darwin
4/16 Charlton Court
Woolner, NT 0820
P +61-488-073-271
ALSEnviro.Darwin@alsglobal.com

Gladstone
46 Callemondah Drive
Clinton Gladstone, QLD 4680
P +61-7-4971-5600
ALSEnviro.Gladstone@alsglobal.com

Mackay
78 Harbour Road
Mackay, QLD 4740
P +61-7-4944-0177
ALSEnviro.Mackay@alsglobal.com

Melbourne
2-4 Westall Road
Springvale VIC 3171
P +61-3-8549-9600
ALSEnviro.Melbourne@alsglobal.com

Mudgee
29 Sydney Road
Mudgee NSW 2850
P +61-2-6372-6735
ALSEnviro.Mudgee@alsglobal.com

Newcastle
5 Rosegum Road
Warabrook NSW 2304
P +61-2-4968-9433
ALSEnviro.Newcastle@alsglobal.com

Nowra
4/13 Geary Place
North Nowra NSW 2541
P +61-2-4423-2063
ALSEnviro.Nowra@alsglobal.com

Perth
10 Hod Way
Malaga WA 6090
P +61-8-9209-7655
ALSEnviro.Perth@alsglobal.com

Roma
Lot 4, 73 Beaumont Drive
Roma QLD 4455
P +61-7-4622-8978
ALSEnviro.Roma@alsglobal.com

Sydney
277-289 Woodpark Road
Smithfield NSW 2164
P +61-2-8784-8555
ALSEnviro.Sydney@alsglobal.com

Townsville
14-15 Desma Court
Bohle, QLD 4818
P +61-7-4796-0600
ALSEnviro.Townsville@alsglobal.com

Wollongong
99 Kenny Street
Wollongong NSW 2500
P +61-2-4225-3125
ALSEnviro.Wollongong@alsglobal.com

SOIL AND SEDIMENT SAMPLE CHILLING AND SUBMISSION

Most soils should be chilled to <4˚C or <6˚C (guideline dependent) and transported to the laboratory within 24 hours. Sediments may also benefit from being frozen. ALS recommends placing samples on ice immediately upon sampling for best practice chilling with either repacking into another esky or draining of free water and replacement of ice just prior to dispatch. Chilling overnight in a fridge may also benefit. The post-chilling addition of ice bricks is also recommended where samples are air freighted or dispatched long distance and where couriers will not freight ice.

Please note that where possible samples should be submitted to the laboratory with at least half the recommended holding time remaining and it is preferable to avoid submitting holding time critical tests and full VOC suites late on Fridays without prior arrangement.

GENERAL NOTES

The following soil testing services are centralized in specialist laboratory locations. These tests require additional separate jars or bags to optimize service delivery and holding time compliance;

- Dioxins, Total S, TOC, TBT (Brisbane),
- PFOS/PFOA/AFFFs, PBDEs, Explosives, Herbicides, Pesticides and Ultra trace Organics (Sydney).
- Sizings, Asbestos and Foreign Materials Testing (Newcastle);
- TRH Speciation (Perth and Melbourne),
- ASS/AMD (Perth and Brisbane).

KEY			
G	Glass	**G(T)**	Glass Jar with Teflon Lined Lid
(ZH)	Zero Headspace required	**PB**	Plastic (Polyethylene) Bag
HVAS	High Volume Air Sampler Paper	**PTFE**	Polytetrafluoroethylene Filter
PUF	Polyurethane Filter	**P**	Plastic Container

Recommended Holding Times and Preservations for Soil and Air

SOIL SAMPLES

Parameter		ALS Preferred Container	Preservation	Holding Time	Reference
INORGANICS, METALS, RADIONUCLIDES, ACID SULFATE SOILS AND PHYSICAL PARAMETERS					
General Anions and Cations: Chloride, Bromide, Fluoride, Sulfate, CEC & exchangeable Cations		PB, P or G	Chill, preferably to <6˚C	28 days [4]	NEPM 2013
Asbestos		PB (double bagged)	Nil	Indefinite	AS4964-2004
Cyanide		P or G	Chill, Store in dark	14 days [4]	NEPM 2013
Electrical conductivity		PB, P or G	Chill, preferably to <6˚C	7 days [4]	NEPM 2013
Gross alpha, Gross beta		PB, P or G	Nil	180 days	ISO9696, ISO9697, ASTM D7283-06.
Hexavalent Chromium (Alkali extract)		P or G	Chill, Store in dark	28 days (plus 7 for extract)	NEPM 2013
Metals - General		PB, P or G	Nil	6 months	NEPM 2013
Mercury		P or G	Chill, Store in dark	28 days	NEPM 2013
Methyl Mercury	Option 1	G(T)	Chill, Store in dark	40 days	Horvat et al, 1993
	Option 2	G(T)	Freeze, Store in dark	8 months	Horvat et al, 1993
Moisture Content		PB, P or G	Chill, preferably to <6˚C	14 days	NEPM 2013
Organic Carbon / TOC	Option 1	G	Chill, to <6˚C store in dark	28 days	NEPM 2013
	Option 2	G	Freeze for sediments	6 months	NAGD 2009
pH		PB, P or G	Chill, preferably to <6˚C	7 days	NEPM 2013
Radium 226, 228		PB or G	Nil	180 days	ISO10703, ASTM D7283-06.
SPOCAS, TOS, Chromium Suite	Option 1	PB (exclude air)	Freeze	Indefinite	AS4969.1-2008
	Option 2		Chill, preferably to <6˚C	24 hours	
	Option 3		Dry at 80˚C	Indefinite	
Sizings and Foreign Material Tests		PB or G	Nil for sediments	Indefinite	NAGD 2009
Sulfur - total		PB or G	Chill, preferably to <6˚C	7 days (6 months once prepared)	NEPM 2013 plus in house
Sulfide		PB or G	Chill, preferably to <6˚C	28 days (if Total S hold' time met)	NEPM 2013 plus in house
ORGANICS - SEMIVOLATILE COMPOUNDS (SVOCS)					
General less persistent Semi-Volatile Organic chemicals including: • Carbamate Pesticides • Explosive residues • OC, OP Pesticides & PCBs • Phenoxy acid Herbicides • General Herbicides • TRH/TPH (C_{10}-C_{40}), • PAHs and Phenols • Phthalate Esters • Pyrethroids (Synthetic) • Semi Volatile Chlorinated Compound • Tributyl Tin (TBT)		G(T)	Place immediately in the esky and chill to <6˚C using ice. Avoid exposure to light	14 days (plus holding of extracts typically for up to 40 days)	NEPM 2013
Dioxins & Furans & PCBs		G(T)		1 year in dark, freeze to -10^{0}C	USEPA 1613
PBDEs		G(T)		1 year in dark, freeze to -10^{0}C	USEPA 1614
PFOS & PFOA/ 6:2-FtS / AFFFs		G(T)		6 months	In house - POPs
Tributyl Tin, OCPs, OPPs, Phenols, PAHs and PCBs		G(T)	Freeze within 12 hours of sampling for sediments	56 days (plus 40 days for extracts)	NAGD 2009
ORGANICS - VOLATILE COMPOUNDS (VOCS)					
VOCs *except* vinyl chloride, styrene and/or 2-chloroethyl vinyl ether		G(T)	Rapidly sample, minimize headspace and Chill to <6˚C. Avoid exposure to light	14 days	NEPM 2013
Vinyl chloride and styrene		G(T)		**7 days** ***(Previously 14 days under NEPM 1999)***	NEPM 2013

AMBIENT AIR, SOIL GAS AND OCCUPATIONAL HYGIENE

ORGANICS - VOLATILE AND SEMIVOLATILE COMPOUNDS

Parameter	Media	Preservation	Holding Time	Reference
VOCs in whole air samples	Silonite Canister	Nil	30 days	USEPA TO15r
VOCs on Sorbents	Charcoal Tubes/ Passive Badge	Nil	30 Days	NIOSH 1500/1501/1003
Semi-Volatile Organics including: PAHs Chlorinated Benzenes Chlorinated Phenols	XAD-2 Resin	Protect from light. Store in the dark submit as soon as possible	7-14 Days	USEPA TO4A/TO10A/TO13A NIOSH 5515/5517
	PTFE/GFF/MCE Filters		7 Days	NIOSH 5515/5517
	PUF		7 Days	USEPA TO4A/TO13A
	HVAS		7 Days	USEPA TO4A/TO13A

NOTES

1. Samples for ZHE TCLP or ASLP require a separate additional jar.
2. TCLP and other leaching procedures need to be conducted within the solid sample holding time of the analyte of interest.
3. When a moisture determination is used for dry weight basis reporting, no holding time applies when performed on the same day as the chemical analytes of interest.
4. Holding times for extracted parameters (e.g. Chloride, Bromide, EC, Sulfate, Sulfide & Cyanide) are until extraction. Extract solution holding times also apply.

Analyte	Method	APHA/USEPA Method
C_6-C_9 – 1999 NEPM Fractions **TRH (Volatile)/BTEX** **C_6-C_{10} – 2010 DRAFT NEPM Fractions**	10g soil extracted with 20mL methanol, tumbled for 1 hour, and analysed with solvent and instrument check surrogates. Clay samples must be completely disintegrated before an aliquot is taken for analysis. Water direct injection of supplied sample (unopened) and analysis with solvent and instrument check surrogates. Analysis by capillary column Purge and Trap GCMS (mgt LabMark in-house method numbers Method: E029/E016 BTEX, Method: E004 Petroleum Hydrocarbons (TPH), Method: LM-LTM-ORG2010, Method: E005 Moisture Content). Owing to the differential responses of mass spectrometric detectors towards aliphatic and aromatic compounds, it is essential that the standard contain representatives of both groups. This standard should therefore consist of about 40% aromatic and 60% aliphatic target analytes, to be representative of a typical Australian fuel. The aromatic compounds shall comprise the components of BTEX. The aliphatics shall comprise equal proportions of all n-alkanes in the C6 to C10 range.	USEPA Method 8260B
Total Recoverable Hydrocarbons C_{10}-C_{36} – 1999 NEPM Fractions **$>C_{10}$-C_{40} – 2010 DRAFT NEPM Fractions**	Soil - 10g soil and anhydrous sodium sulfate extracted with 20mL dichloromethane/acetone (1:1), and tumbled for a minimum of 1 hour. Clay samples must be completely disintegrated before an aliquot is taken for analysis. Water - One 250ml of water sequentially extracted in a separatory funnel three times with 20mL dichloromethane. Analysis by capillary column GC/FID (mgt LabMark in-house method numbers Method: E004 Petroleum Hydrocarbons (TPH), Method: LM-LTM-ORG2010, Method: E005 Moisture Content)	USEPA Method 8015C
TPH (Silica Gel)	Exchange an aliquot of sample extract into a suitable solvent for clean-up. For example, a 1:1 dichloromethane/acetone extract should be exchanged into a suitable non-polar solvent to allow for removal of polar substances. To the solvent-exchanged extract add an appropriate weight of silica gel. Mix the extract and silica gel thoroughly (e.g. with vortex mixer) and allow the sorbent to settle before removing a portion of the extract for analysis. (mgt LabMark in-house method numbers Method: LM-LTM-ORG2010, Method: E005 Moisture Content)	USEPA Method 3630C
Phenols/PAH	Soil - 10g soil, surrogates, mixed with anhydrous sodium sulfate and extracted with 20mL dichloromethane/acetone (1:1), and tumbled for a minimum of 1 hour. Clay samples must be completely disintegrated before an aliquot is	USEPA Method 8270D

Analyte	Method	APHA/USEPA Method
	taken for analysis. Water - 250ml water sample plus surrogates triple extracted with dichloromethane (base and neutrals). Analysis by capillary column GC/MS (mgt LabMark in-house Methods E008.1, E008.2, E015.1, E015.2, E017.1 and E017.2, E016.1, E016.2, E017.1 and E017.2, E007.1, E007.2, E015.1, E015.2, E017.1 and E017.2 Method: E005 Moisture Content).	
Total Metals (As, Cd, Cr, Cu, Ni, Pb, Zn)	A 0.5gm portion of soil undergoes acidic microwave digestion. Analysis by ICP/MS.(mgt Labmark in-house method E022.2).	USEPA Method 6020A
Total Mercury (Hg)	0.5g soil acidic microwave digestion. Analysis by FIMS. (mgt Labmark in-house method E026.2).	USEPA Method 7471B
Filtered Metals (As, Cd, Cr, Cu, Ni, Pb ,Zn)	Filtered (0.45mm) and acidified in the field prior to analysis. Analysis by ICP/MS. (mgt LabMark in-house method E022.1).	USEPA Method 6020A
Filtered Metals (Al, As, Be, Cd, Cr, Co, Cu, Fe, Pb, Mo, Ni)	Filtered (0.45mm) and acidified in the field prior to analysis. Analysis by ICP/MS. (mgt LabMark in-house method E022.1).	USEPA Method 6020A
Total Metals (Al, As, Be, Cd, Cr, Co, Cu, Fe, Pb, Mo, Ni)	Acidified in the field prior to analysis and digested in the laboratory using aqua regia. Analysis by ICP/MS. (mgt LabMark in-house method E022.1).	USEPA Method 6020A
Filtered Mercury (Hg)	Filtered, oxidation and final reduction. Analysis by FIMS. (mgt LabMark in-house method E022.1).	USEPA Method 7471B
Conductivity	Direct measurement using a calibrated meter and electrode. (mgt LabMark in-house method E032 Electrical conductivity (EC)).	APHA Method 2520 B
pH	Direct measurement using a calibrated meter and electrode. (mgt LabMark in-house method E018 pH).	APHA Method 4500-H^+
Suspended Solids (SS)	Gravimetric measurement of the residue filtered through a GFC filter. (mgt LabMark in-house method 4100 Total Suspended Solids dried at 103-105°C).	APHA Method 2540 D
Ammonia (as N)	Alkaline phenol and hypochlorite react with ammonia to form indophenol blue that is proportional to the ammonia concentration that is determined colorimetrically. (mgt LabMark in-house method E036/E050 Ammonia as N).	APHA Method 4500-N
Phosphorus (as P)	Acid digestion of phosphorus species to form a molybdophosphoric acid complex that is reduced to molybdenum blue which is proportional to the phosphorus concentration that is determined colorimetrically. (mgt LabMark in-house method E038 /E052 Total Phosphorus (as P)).	APHA Method 4500-P

APPENDIX J

LABORATORY CERTIFICATES

Aargus Pty Ltd
6 Carter Street
Lidcombe
NSW 2141

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL INVOICES/SRA - Mark Kelly**

Report **917902-S**
Project name DSI Hunters Hill
Project ID ES8561
Received Date Aug 25, 2022

Client Sample ID			**BH1_0-0.1**	**BH2_0-0.1**	**BH3_0-0.1**	**BH4_0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Au0060704**	**S22-Au0060705**	**S22-Au0060706**	**S22-Au0060707**
Date Sampled			**Aug 23, 2022**	**Aug 24, 2022**	**Aug 24, 2022**	**Aug 24, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	60	-
TRH C29-C36	50	mg/kg	< 50	-	57	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	117	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	102	-	101	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	0.8	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	1.0	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.3	-
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	0.6	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	0.6	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			BH1_0-0.1	BH2_0-0.1	BH3_0-0.1	BH4_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060704	S22-Au0060705	S22-Au0060706	S22-Au0060707
Date Sampled			Aug 23, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	-	1.6	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	1.1	-
Pyrene	0.5	mg/kg	< 0.5	-	1.5	-
Total PAH*	0.5	mg/kg	< 0.5	-	6.9	-
2-Fluorobiphenyl (surr.)	1	%	119	-	127	-
p-Terphenyl-d14 (surr.)	1	%	101	-	104	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	51	61	60	55
Tetrachloro-m-xylene (surr.)	1	%	98	108	106	102
Heavy Metals						
Arsenic	2	mg/kg	4.2	3.3	4.8	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	9.4	13	11
Copper	5	mg/kg	22	16	20	14
Lead	5	mg/kg	92	85	200	80
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.5	6.5	< 5	< 5
Zinc	5	mg/kg	58	56	80	53
% Moisture	1	%	23	20	21	19

Client Sample ID			BH4_0.3-0.4	BH5_0-0.1	BH6_0-0.1	BH7_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060708	S22-Au0060709	S22-Au0060710	S22-Au0060711
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	160	-	< 50
TRH C29-C36	50	mg/kg	-	130	-	110
TRH C10-C36 (Total)	50	mg/kg	-	290	-	110
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	240	-	120
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	240	-	120
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	111	-	92
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	136	-	135
p-Terphenyl-d14 (surr.)	1	%	-	99	-	101
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05

Client Sample ID			BH4_0.3-0.4	BH5_0-0.1	BH6_0-0.1	BH7_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060708	S22-Au0060709	S22-Au0060710	S22-Au0060711
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	66	63	63
Tetrachloro-m-xylene (surr.)	1	%	-	103	107	108
Heavy Metals						
Arsenic	2	mg/kg	9.2	3.5	3.5	9.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	33	6.7	6.3	29
Copper	5	mg/kg	< 5	9.2	8.0	10
Lead	5	mg/kg	15	25	23	37
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	6.6	46	42	33
% Moisture	1	%	19	19	19	19
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	11	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	6.8	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	4.9	-	-	-

Client Sample ID			BH8_0-0.1	BH8_0.5-0.6	BH9_0-0.1	BH10_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060712	S22-Au0060713	S22-Au0060714	S22-Au0060715
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	53	-
TRH C10-C36 (Total)	50	mg/kg	-	-	53	-
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	105	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	127	-
p-Terphenyl-d14 (surr.)	1	%	-	-	97	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05

Client Sample ID			BH8_0-0.1	BH8_0.5-0.6	BH9_0-0.1	BH10_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060712	S22-Au0060713	S22-Au0060714	S22-Au0060715
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	68	-	54	72
Tetrachloro-m-xylene (surr.)	1	%	109	-	110	102
Heavy Metals						
Arsenic	2	mg/kg	3.0	8.4	3.9	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.6	23	18	33
Copper	5	mg/kg	27	8.6	11	12
Lead	5	mg/kg	260	33	56	67
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	86	23	46	48
% Moisture	1	%	27	15	19	19
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	< 10	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	5.7	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	1.8	-	-

Client Sample ID			BH11_0-0.1	BH12_0-0.1	BH13_0-0.1	BH14_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060716	S22-Au0060717	S22-Au0060718	S22-Au0060719
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	77	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	77	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	88	-	96	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	127	-	127	-
p-Terphenyl-d14 (surr.)	1	%	99	-	103	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH11_0-0.1	BH12_0-0.1	BH13_0-0.1	BH14_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060716	S22-Au0060717	S22-Au0060718	S22-Au0060719
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	62	55	54	56
Tetrachloro-m-xylene (surr.)	1	%	109	108	104	108
Heavy Metals						
Arsenic	2	mg/kg	3.1	2.3	4.5	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	8.4	6.7	14	15
Copper	5	mg/kg	11	18	14	15
Lead	5	mg/kg	46	54	92	100
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	46	59	89	93
% Moisture	1	%	16	18	26	29

Client Sample ID			BH15_0-0.1	BH16_0-0.1	BH17_0-0.1	BH17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060720	S22-Au0060721	S22-Au0060722	S22-Au0060723
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	30	-
TRH C15-C28	50	mg/kg	120	-	320	-
TRH C29-C36	50	mg/kg	200	-	450	-
TRH C10-C36 (Total)	50	mg/kg	320	-	800	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			BH15_0-0.1	BH16_0-0.1	BH17_0-0.1	BH17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060720	S22-Au0060721	S22-Au0060722	S22-Au0060723
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	55	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	55	-
TRH >C16-C34	100	mg/kg	250	-	670	-
TRH >C34-C40	100	mg/kg	100	-	180	-
TRH >C10-C40 (total)*	100	mg/kg	350	-	905	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	94	-	109	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.9	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.2	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.5	-	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	1.1	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	1.2	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	0.7	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	0.7	-	< 0.5	-
Chrysene	0.5	mg/kg	1.2	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	3.3	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	3.5	-	< 0.5	-
Pyrene	0.5	mg/kg	2.6	-	< 0.5	-
Total PAH*	0.5	mg/kg	14	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	117	-	143	-
p-Terphenyl-d14 (surr.)	1	%	100	-	102	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-

Client Sample ID			BH15_0-0.1	BH16_0-0.1	BH17_0-0.1	BH17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060720	S22-Au0060721	S22-Au0060722	S22-Au0060723
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	69	84	84	-
Tetrachloro-m-xylene (surr.)	1	%	117	113	118	-
Heavy Metals						
Arsenic	2	mg/kg	5.3	3.0	4.3	7.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	12	13	30
Copper	5	mg/kg	7.7	9.9	5.6	< 5
Lead	5	mg/kg	30	38	27	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	31	40	21	14
% Moisture	1	%	20	20	6.9	16
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	-	26
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	-	-	5.7
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	3.1

Client Sample ID			BH18_0-0.1	BH19_0-0.1	BH20_0-0.1	BH21_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060724	S22-Au0060725	S22-Au0060726	S22-Au0060727
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	45
TRH C15-C28	50	mg/kg	-	83	-	510
TRH C29-C36	50	mg/kg	-	160	-	220
TRH C10-C36 (Total)	50	mg/kg	-	243	-	775
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20

Client Sample ID			BH18_0-0.1	BH19_0-0.1	BH20_0-0.1	BH21_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060724	S22-Au0060725	S22-Au0060726	S22-Au0060727
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C10-C16	50	mg/kg	-	< 50	-	60
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	60
TRH >C16-C34	100	mg/kg	-	180	-	650
TRH >C34-C40	100	mg/kg	-	< 100	-	160
TRH >C10-C40 (total)*	100	mg/kg	-	180	-	870
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	90	-	108
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	147	-	121
p-Terphenyl-d14 (surr.)	1	%	-	108	-	126
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	0.06
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05

Client Sample ID			BH18_0-0.1	BH19_0-0.1	BH20_0-0.1	BH21_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060724	S22-Au0060725	S22-Au0060726	S22-Au0060727
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.2
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	0.06
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.2
Dibutylchlorendate (surr.)	1	%	-	78	85	147
Tetrachloro-m-xylene (surr.)	1	%	-	126	108	125
Heavy Metals						
Arsenic	2	mg/kg	2.9	2.9	4.6	3.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	8.5	13	13
Copper	5	mg/kg	17	8.7	5.4	32
Lead	5	mg/kg	57	29	21	46
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Nickel	5	mg/kg	7.2	< 5	< 5	7.9
Zinc	5	mg/kg	59	39	20	120
% Moisture	1	%	20	31	23	15

Client Sample ID			BH22_0-0.1	BH23_0-0.1	BH24_0-0.1	BH25_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060728	S22-Au0060729	S22-Au0060730	S22-Au0060731
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	25	-	22
TRH C15-C28	50	mg/kg	-	130	-	< 50
TRH C29-C36	50	mg/kg	-	170	-	120
TRH C10-C36 (Total)	50	mg/kg	-	325	-	142
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	240	-	110
TRH >C34-C40	100	mg/kg	-	130	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	370	-	110

Client Sample ID			BH22_0-0.1	BH23_0-0.1	BH24_0-0.1	BH25_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060728	S22-Au0060729	S22-Au0060730	S22-Au0060731
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	77	-	85
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	96	-	116
p-Terphenyl-d14 (surr.)	1	%	-	82	-	104
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	2.5	2.6	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.1	0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH22_0-0.1	BH23_0-0.1	BH24_0-0.1	BH25_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060728	S22-Au0060729	S22-Au0060730	S22-Au0060731
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	2.5	2.6	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	2.55	2.6	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	96	82	123	110
Tetrachloro-m-xylene (surr.)	1	%	87	89	129	111
Heavy Metals						
Arsenic	2	mg/kg	3.4	7.0	3.7	4.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	24	16	12
Copper	5	mg/kg	32	13	13	21
Lead	5	mg/kg	52	90	86	81
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.4	< 5	< 5	< 5
Zinc	5	mg/kg	120	52	53	53
% Moisture	1	%	17	22	22	21

Client Sample ID			BH26_0-0.1	BH27_0-0.1	BH27_0.4-0.5	BH28_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060732	S22-Au0060733	S22-Au0060734	S22-Au0060735
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	23	-	-
TRH C15-C28	50	mg/kg	-	100	-	-
TRH C29-C36	50	mg/kg	-	140	-	-
TRH C10-C36 (Total)	50	mg/kg	-	263	-	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	210	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	210	-	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	126	-	-

Client Sample ID			BH26_0-0.1	BH27_0-0.1	BH27_0.4-0.5	BH28_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060732	S22-Au0060733	S22-Au0060734	S22-Au0060735
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	96	-	-
p-Terphenyl-d14 (surr.)	1	%	-	84	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	80	72	-	116
Tetrachloro-m-xylene (surr.)	1	%	97	98	-	129

Client Sample ID			BH26_0-0.1	BH27_0-0.1	BH27_0.4-0.5	BH28_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060732	S22-Au0060733	S22-Au0060734	S22-Au0060735
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	8.8	6.1	15	5.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	18	30	22
Copper	5	mg/kg	17	14	9.2	13
Lead	5	mg/kg	78	130	120	45
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	16
Zinc	5	mg/kg	48	95	46	87
% Moisture	1	%	17	22	15	26
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	< 10	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	-	6.1	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	4.5	-

Client Sample ID			BH29_0-0.1	BH29_0.6-0.7	BH30_0-0.1	BH31_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060736	S22-Au0060737	S22-Au0060738	S22-Au0060739
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	71	-	65	107
Tetrachloro-m-xylene (surr.)	1	%	98	-	95	100

Client Sample ID			BH29_0-0.1	BH29_0.6-0.7	BH30_0-0.1	BH31_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060736	S22-Au0060737	S22-Au0060738	S22-Au0060739
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.5	6.6	4.8	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.5	30	11	5.8
Copper	5	mg/kg	12	< 5	14	13
Lead	5	mg/kg	27	14	30	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	45	9.9	47	45
% Moisture	1	%	32	19	25	28
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	22	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	5.2	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	2.9	-	-

Client Sample ID			BH32_0-0.1	BH33_0-0.1	BH34_0-0.1	BH34_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060740	S22-Au0060741	S22-Au0060742	S22-Au0060743
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	121	117	123	-
Tetrachloro-m-xylene (surr.)	1	%	103	109	105	-

Client Sample ID			BH32_0-0.1	BH33_0-0.1	BH34_0-0.1	BH34_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060740	S22-Au0060741	S22-Au0060742	S22-Au0060743
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.5	3.2	3.2	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	8.6	9.0	44
Copper	5	mg/kg	15	15	8.7	< 5
Lead	5	mg/kg	26	27	34	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	50	47	39	7.3
% Moisture	1	%	26	26	28	16
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	-	19
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	-	-	5.3
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	3.9

Client Sample ID			BH35_0-0.1	BH36_0-0.1	BH37_0-0.1	BH38_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060744	S22-Au0060745	S22-Au0060746	S22-Au0060747
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	-	< 50
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	-	< 100
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	123
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			BH35_0-0.1	BH36_0-0.1	BH37_0-0.1	BH38_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060744	S22-Au0060745	S22-Au0060746	S22-Au0060747
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	93
p-Terphenyl-d14 (surr.)	1	%	-	-	-	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	133	116	111	123
Tetrachloro-m-xylene (surr.)	1	%	99	101	97	105

Client Sample ID			BH35_0-0.1	BH36_0-0.1	BH37_0-0.1	BH38_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060744	S22-Au0060745	S22-Au0060746	S22-Au0060747
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.7	2.3	2.3	8.2
Cadmium	0.4	mg/kg	3.1	1.2	1.8	< 0.4
Chromium	5	mg/kg	27	8.1	8.7	10
Copper	5	mg/kg	17	17	15	12
Lead	5	mg/kg	97	74	84	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	7.2
Zinc	5	mg/kg	100	60	74	36
% Moisture	1	%	31	22	25	18

Client Sample ID			BH39_0-0.1	BH40_0-0.1	BH41_0-0.1	BH42_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060748	S22-Au0060749	S22-Au0060750	S22-Au0060751
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	41	33	34	-
TRH C15-C28	50	mg/kg	220	130	120	-
TRH C29-C36	50	mg/kg	430	140	150	-
TRH C10-C36 (Total)	50	mg/kg	691	303	304	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	520	220	230	-
TRH >C34-C40	100	mg/kg	160	100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	680	320	230	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	68	105	145	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			BH39_0-0.1	BH40_0-0.1	BH41_0-0.1	BH42_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060748	S22-Au0060749	S22-Au0060750	S22-Au0060751
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	102	107	129	-
p-Terphenyl-d14 (surr.)	1	%	121	90	115	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	129	89	113	84
Tetrachloro-m-xylene (surr.)	1	%	98	104	127	100
Heavy Metals						
Arsenic	2	mg/kg	3.3	4.0	3.4	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	10.0	14	12	13
Copper	5	mg/kg	21	37	23	25
Lead	5	mg/kg	23	36	24	27
Mercury	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1

Client Sample ID			BH39_0-0.1	BH40_0-0.1	BH41_0-0.1	BH42_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060748	S22-Au0060749	S22-Au0060750	S22-Au0060751
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	11	11	6.9	8.7
Zinc	5	mg/kg	89	120	55	54
% Moisture	1	%	22	25	11	12

Client Sample ID			BH43_0-0.1	BH44_0-0.1	BH45_0-0.1	BH46_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060752	S22-Au0060753	S22-Au0060754	S22-Au0060755
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	83	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	83	< 50	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	110	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	110	< 100	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	119	88	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	-
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-

Client Sample ID			BH43_0-0.1	BH44_0-0.1	BH45_0-0.1	BH46_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060752	S22-Au0060753	S22-Au0060754	S22-Au0060755
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	116	113	-
p-Terphenyl-d14 (surr.)	1	%	-	108	104	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	79	97	101	80
Tetrachloro-m-xylene (surr.)	1	%	82	117	114	105
Heavy Metals						
Arsenic	2	mg/kg	3.9	10	10	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	21	12	16
Copper	5	mg/kg	21	20	12	20
Lead	5	mg/kg	33	36	18	30
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	14	8.3	12
Zinc	5	mg/kg	140	56	43	82
% Moisture	1	%	25	21	22	16

Client Sample ID			BH46_0.4-0.5	BH47_0-0.1	BH48_0-0.1	BH49_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060756	S22-Au0060757	S22-Au0060758	S22-Au0060759
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	85	117	91
Tetrachloro-m-xylene (surr.)	1	%	-	98	138	117
Heavy Metals						
Arsenic	2	mg/kg	5.8	4.2	4.5	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	16	16	14
Copper	5	mg/kg	6.3	18	27	18
Lead	5	mg/kg	40	29	30	31
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
Nickel	5	mg/kg	< 5	11	7.9	11
Zinc	5	mg/kg	73	100	60	100
% Moisture	1	%	14	26	13	27
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	20	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.1	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	10	-	-	-

Client Sample ID			BH50_0-0.1	BH50_0.5-0.6	BH51_0-0.1	BH52_0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060760	S22-Au0060761	S22-Au0060762	S22-Au0060763
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	87	-	73	76
Tetrachloro-m-xylene (surr.)	1	%	103	-	100	98
Heavy Metals						
Arsenic	2	mg/kg	3.4	5.0	5.2	7.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	10	15	14	19
Copper	5	mg/kg	19	13	17	18
Lead	5	mg/kg	29	63	42	36
Mercury	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.9	6.0	9.5	9.2
Zinc	5	mg/kg	72	94	110	100
% Moisture	1	%	16	14	26	26
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	24	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	7.2	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	12	-	-

Client Sample ID			DUPLICATE D1	DUPLICATE D2	DUPLICATE D3	TripSpike 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060764	S22-Au0060765	S22-Au0060766	S22-Au0060767
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	43	-
TRH C15-C28	50	mg/kg	-	-	310	-
TRH C29-C36	50	mg/kg	-	-	450	-
TRH C10-C36 (Total)	50	mg/kg	-	-	803	-
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	50	-
TRH >C16-C34	100	mg/kg	-	-	640	-
TRH >C34-C40	100	mg/kg	-	-	190	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	880	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	107	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	0.7	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	1.0	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.3	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	0.8	-
Benzo(a)pyrene	0.5	mg/kg	-	-	0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	0.6	-
Chrysene	0.5	mg/kg	-	-	0.6	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	1.2	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	0.8	-
Pyrene	0.5	mg/kg	-	-	1.3	-
Total PAH*	0.5	mg/kg	-	-	5.8	-
2-Fluorobiphenyl (surr.)	1	%	-	-	95	-
p-Terphenyl-d14 (surr.)	1	%	-	-	96	-

Client Sample ID			DUPLICATE D1	DUPLICATE D2	DUPLICATE D3	TripSpike 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060764	S22-Au0060765	S22-Au0060766	S22-Au0060767
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	82	71	96	-
Tetrachloro-m-xylene (surr.)	1	%	95	97	98	-
Heavy Metals						
Arsenic	2	mg/kg	3.2	2.5	2.8	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	11	6.7	8.3	-
Copper	5	mg/kg	31	15	19	-
Lead	5	mg/kg	68	22	22	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	< 5	9.5	-
Zinc	5	mg/kg	100	46	73	-
% Moisture	1	%	28	25	22	-
TRH C6-C10	1	%	-	-	-	93
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	-	100
TRH C6-C9	1	%	-	-	-	93
BTEX						
Benzene	1	%	-	-	-	99
Ethylbenzene	1	%	-	-	-	100
m&p-Xylenes	1	%	-	-	-	93
o-Xylene	1	%	-	-	-	91
Toluene	1	%	-	-	-	98

Client Sample ID			DUPLICATE D1	DUPLICATE D2	DUPLICATE D3	TripSpike 1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060764	S22-Au0060765	S22-Au0060766	S22-Au0060767
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total	1	%	-	-	-	92
4-Bromofluorobenzene (surr.)	1	%	-	-	-	69

Client Sample ID			Trip blank	TripBlank 1	Trip Spike
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S22-Au0060768	S22-Au0060769	S22-Au0060770
Date Sampled			Aug 24, 2022	Aug 24, 2022	Aug 24, 2022
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	20	mg/kg	< 20	< 20	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	126	110	-
TRH C6-C10	1	%	-	-	99
Total Recoverable Hydrocarbons					
Naphthalene	1	%	-	-	100
TRH C6-C9	1	%	-	-	99
BTEX					
Benzene	1	%	-	-	110
Ethylbenzene	1	%	-	-	100
m&p-Xylenes	1	%	-	-	98
o-Xylene	1	%	-	-	98
Toluene	1	%	-	-	110
Xylenes - Total	1	%	-	-	98
4-Bromofluorobenzene (surr.)	1	%	-	-	65

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Sep 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Sep 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Sep 02, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 31, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Sep 05, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Aug 31, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Aug 31, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Aug 31, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
% Moisture	Sydney	Aug 26, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Sydney	Aug 31, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Sep 02, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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Project Name: DSI Hunters Hill
Project ID: ES8561

Order No.:
Report #: 917902
Phone: 02 9568 6159
Fax: 02 9566 6179

Received: Aug 25, 2022 5:33 PM
Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH1_0-0.1	Aug 23, 2022		Soil	S22-Au0060704		X		X		X		
2	BH2_0-0.1	Aug 24, 2022		Soil	S22-Au0060705		X	X	X				
3	BH3_0-0.1	Aug 24, 2022		Soil	S22-Au0060706		X		X		X		
4	BH4_0-0.1	Aug 24, 2022		Soil	S22-Au0060707		X	X	X				
5	BH4_0.3-0.4	Aug 24, 2022		Soil	S22-Au0060708	X		X	X	X			
6	BH5_0-0.1	Aug 24, 2022		Soil	S22-Au0060709		X		X		X		
7	BH6_0-0.1	Aug 24, 2022		Soil	S22-Au0060710		X	X	X				
8	BH7_0-0.1	Aug 24, 2022		Soil	S22-Au0060711		X		X		X		
9	BH8_0-0.1	Aug 24, 2022		Soil	S22-Au0060712		X	X	X				
10	BH8_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060713	X		X	X	X			
11	BH9_0-0.1	Aug 24, 2022		Soil	S22-Au0060714		X		X		X		
12	BH10_0-0.1	Aug 24, 2022		Soil	S22-Au0060715		X	X	X				

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Project Name: DSI Hunters Hill
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Order No.:
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Phone: 02 9568 6159
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Received: Aug 25, 2022 5:33 PM
Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
13	BH11_0-0.1	Aug 24, 2022		Soil	S22-Au0060716		X		X		X		
14	BH12_0-0.1	Aug 24, 2022		Soil	S22-Au0060717		X	X	X				
15	BH13_0-0.1	Aug 24, 2022		Soil	S22-Au0060718		X		X		X		
16	BH14_0-0.1	Aug 24, 2022		Soil	S22-Au0060719		X	X	X				
17	BH15_0-0.1	Aug 24, 2022		Soil	S22-Au0060720		X		X		X		
18	BH16_0-0.1	Aug 24, 2022		Soil	S22-Au0060721		X	X	X				
19	BH17_0-0.1	Aug 24, 2022		Soil	S22-Au0060722		X		X		X		
20	BH17_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060723	X		X	X	X			
21	BH18_0-0.1	Aug 24, 2022		Soil	S22-Au0060724			X	X				
22	BH19_0-0.1	Aug 24, 2022		Soil	S22-Au0060725		X		X		X		
23	BH20_0-0.1	Aug 24, 2022		Soil	S22-Au0060726		X	X	X				
24	BH21_0-0.1	Aug 24, 2022		Soil	S22-Au0060727		X		X		X		
25	BH22_0-0.1	Aug 24, 2022		Soil	S22-Au0060728		X	X	X				
26	BH23_0-0.1	Aug 24, 2022		Soil	S22-Au0060729		X		X		X		
27	BH24_0-0.1	Aug 24, 2022		Soil	S22-Au0060730		X	X	X				

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Company Name: Aargus Pty Ltd
Address: 6 Carter Street
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NSW 2141

Project Name: DSI Hunters Hill
Project ID: ES8561

Order No.:
Report #: 917902
Phone: 02 9568 6159
Fax: 02 9566 6179

Received: Aug 25, 2022 5:33 PM
Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
28	BH25_0-0.1	Aug 24, 2022		Soil	S22-Au0060731		X		X		X		
29	BH26_0-0.1	Aug 24, 2022		Soil	S22-Au0060732		X	X	X				
30	BH27_0-0.1	Aug 24, 2022		Soil	S22-Au0060733		X		X		X		
31	BH27_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060734	X		X	X	X			
32	BH28_0-0.1	Aug 24, 2022		Soil	S22-Au0060735		X	X	X				
33	BH29_0-0.1	Aug 24, 2022		Soil	S22-Au0060736		X	X	X				
34	BH29_0.6-0.7	Aug 24, 2022		Soil	S22-Au0060737	X		X	X	X			
35	BH30_0-0.1	Aug 24, 2022		Soil	S22-Au0060738		X	X	X				
36	BH31_0-0.1	Aug 24, 2022		Soil	S22-Au0060739		X	X	X				
37	BH32_0-0.1	Aug 24, 2022		Soil	S22-Au0060740		X	X	X				
38	BH33_0-0.1	Aug 24, 2022		Soil	S22-Au0060741		X	X	X				
39	BH34_0-0.1	Aug 24, 2022		Soil	S22-Au0060742		X	X	X				
40	BH34_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060743	X		X	X	X			
41	BH35_0-0.1	Aug 24, 2022		Soil	S22-Au0060744		X	X	X				
42	BH36_0-0.1	Aug 24, 2022		Soil	S22-Au0060745		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
43	BH37_0-0.1	Aug 24, 2022		Soil	S22-Au0060746		X	X	X				
44	BH38_0-0.1	Aug 24, 2022		Soil	S22-Au0060747		X		X		X		
45	BH39_0-0.1	Aug 24, 2022		Soil	S22-Au0060748		X		X		X		
46	BH40_0-0.1	Aug 24, 2022		Soil	S22-Au0060749		X		X		X		
47	BH41_0-0.1	Aug 24, 2022		Soil	S22-Au0060750		X		X		X		
48	BH42_0-0.1	Aug 24, 2022		Soil	S22-Au0060751		X	X	X				
49	BH43_0-0.1	Aug 24, 2022		Soil	S22-Au0060752		X	X	X				
50	BH44_0-0.1	Aug 24, 2022		Soil	S22-Au0060753		X		X		X		
51	BH45_0-0.1	Aug 24, 2022		Soil	S22-Au0060754		X		X		X		
52	BH46_0-0.1	Aug 24, 2022		Soil	S22-Au0060755		X	X	X				
53	BH46_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060756	X		X	X	X			
54	BH47_0-0.1	Aug 24, 2022		Soil	S22-Au0060757		X	X	X				
55	BH48_0-0.1	Aug 24, 2022		Soil	S22-Au0060758		X	X	X				
56	BH49_0-0.1	Aug 24, 2022		Soil	S22-Au0060759		X	X	X				
57	BH50_0-0.1	Aug 24, 2022		Soil	S22-Au0060760		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
58	BH50_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060761	X		X	X	X			
59	BH51_0-0.1	Aug 24, 2022		Soil	S22-Au0060762		X	X	X				
60	BH52_0-0.1	Aug 24, 2022		Soil	S22-Au0060763		X	X	X				
61	DUPLICATE D1	Aug 24, 2022		Soil	S22-Au0060764		X	X	X				
62	DUPLICATE D2	Aug 24, 2022		Soil	S22-Au0060765		X	X	X				
63	DUPLICATE D3	Aug 24, 2022		Soil	S22-Au0060766		X		X		X		
64	TripSpike 1	Aug 24, 2022		Soil	S22-Au0060767								X
65	Trip blank	Aug 24, 2022		Soil	S22-Au0060768							X	
66	TripBlank 1	Aug 24, 2022		Soil	S22-Au0060769							X	
67	Trip Spike	Aug 24, 2022		Soil	S22-Au0060770								X
68	R1	Aug 24, 2022		Water	S22-Au0060771			X					
69	R2	Aug 24, 2022		Water	S22-Au0060772			X					
Test Counts						8	54	44	63	8	21	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Total PAH*	mg/kg	-			0.5	N/A	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	112			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
Naphthalene	%	87			70-130	Pass	
Naphthalene	%	75			70-130	Pass	
TRH C6-C10	%	112			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
TRH >C10-C16	%	96			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total*	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	92			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	84			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	108			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	97			70-130	Pass	
Pyrene	%	96			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	71			70-130	Pass	
4.4'-DDD	%	90			70-130	Pass	
4.4'-DDE	%	87			70-130	Pass	
4.4'-DDT	%	85			70-130	Pass	
a-HCH	%	92			70-130	Pass	
Aldrin	%	84			70-130	Pass	
b-HCH	%	88			70-130	Pass	
d-HCH	%	94			70-130	Pass	
Dieldrin	%	87			70-130	Pass	
Endosulfan I	%	104			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	76			70-130	Pass	
Endrin aldehyde	%	101			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	96			70-130	Pass	
Heptachlor	%	96			70-130	Pass	
Heptachlor epoxide	%	93			70-130	Pass	
Hexachlorobenzene	%	87			70-130	Pass	
Methoxychlor	%	111			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	107			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	108			80-120	Pass	
Lead	%	104			80-120	Pass	
Mercury	%	116			80-120	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	105			80-120	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Mercury	S22-Au0068268	NCP	%	105			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Au0060581	NCP	%	96			70-130	Pass	
Acenaphthylene	N22-Au0061204	NCP	%	80			70-130	Pass	
Benz(a)anthracene	N22-Au0061204	NCP	%	95			70-130	Pass	
Benzo(a)pyrene	N22-Au0061204	NCP	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	N22-Au0061204	NCP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	S22-Au0060581	NCP	%	70			70-130	Pass	
Benzo(k)fluoranthene	S22-Au0060581	NCP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	S22-Au0060581	NCP	%	70			70-130	Pass	
Dibenz(a.h)anthracene	S22-Au0060581	NCP	%	72			70-130	Pass	
Fluorene	N22-Au0061204	NCP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	N22-Au0061204	NCP	%	111			70-130	Pass	
Naphthalene	S22-Au0060581	NCP	%	96			70-130	Pass	
Phenanthrene	N22-Au0061204	NCP	%	93			70-130	Pass	
Pyrene	S22-Au0060581	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin	S22-Au0060581	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Au0060729	CP	%	83			70-130	Pass	
Naphthalene	S22-Au0060729	CP	%	72			70-130	Pass	
TRH C6-C10	S22-Au0060729	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Au0060729	CP	%	86			70-130	Pass	
Toluene	S22-Au0060729	CP	%	85			70-130	Pass	
Ethylbenzene	S22-Au0060729	CP	%	81			70-130	Pass	
m&p-Xylenes	S22-Au0060729	CP	%	92			70-130	Pass	
o-Xylene	S22-Au0060729	CP	%	90			70-130	Pass	
Xylenes - Total*	S22-Au0060729	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Au0060731	CP	%	124			70-130	Pass	
TRH >C10-C16	S22-Au0060731	CP	%	128			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDT	S22-Au0066061	NCP	%	86			70-130	Pass	
Methoxychlor	S22-Au0066061	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Au0060740	CP	%	85			70-130	Pass	
4.4'-DDE	S22-Au0060740	CP	%	88			70-130	Pass	
a-HCH	S22-Au0060740	CP	%	68			70-130	Fail	Q08
Aldrin	S22-Au0060740	CP	%	82			70-130	Pass	
b-HCH	S22-Au0060740	CP	%	124			70-130	Pass	
Dieldrin	S22-Au0060740	CP	%	82			70-130	Pass	
Endosulfan I	S22-Au0060740	CP	%	85			70-130	Pass	
Endrin aldehyde	S22-Au0060740	CP	%	88			70-130	Pass	
Endrin ketone	S22-Au0060740	CP	%	72			70-130	Pass	
g-HCH (Lindane)	S22-Au0060740	CP	%	133			70-130	Fail	Q08
Heptachlor	S22-Au0060740	CP	%	78			70-130	Pass	
Heptachlor epoxide	S22-Au0060740	CP	%	78			70-130	Pass	
Hexachlorobenzene	S22-Au0060740	CP	%	70			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Anthracene	S22-Au0068875	NCP	%	109			70-130	Pass	
Fluoranthene	S22-Au0068875	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Au0060763	CP	%	76			70-130	Pass	
4.4'-DDD	S22-Au0060763	CP	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S22-Au0060763	CP	%	79			70-130	Pass	
a-HCH	S22-Au0060763	CP	%	73			70-130	Pass	
b-HCH	S22-Au0060763	CP	%	70			70-130	Pass	
d-HCH	S22-Au0060763	CP	%	75			70-130	Pass	
Dieldrin	S22-Au0060763	CP	%	80			70-130	Pass	
Endosulfan I	S22-Au0060763	CP	%	77			70-130	Pass	
Endosulfan II	S22-Au0060763	CP	%	74			70-130	Pass	
Endosulfan sulphate	S22-Au0060763	CP	%	80			70-130	Pass	
Endrin aldehyde	S22-Au0060763	CP	%	86			70-130	Pass	
g-HCH (Lindane)	S22-Au0060763	CP	%	75			70-130	Pass	
Heptachlor epoxide	S22-Au0060763	CP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Au0060763	CP	%	115			75-125	Pass	
Cadmium	S22-Au0060763	CP	%	119			75-125	Pass	
Chromium	S22-Au0060763	CP	%	112			75-125	Pass	
Copper	S22-Au0060763	CP	%	122			75-125	Pass	
Lead	S22-Au0060763	CP	%	118			75-125	Pass	
Nickel	S22-Au0060763	CP	%	122			75-125	Pass	
Zinc	S22-Au0060763	CP	%	113			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Au0067476	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S22-Au0066077	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Au0066077	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Au0066077	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S22-Au0067476	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Au0067476	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S22-Au0066077	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Au0066077	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Au0066077	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Au0067476	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Au0067476	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Au0067476	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Au0067476	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Au0067476	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Au0067476	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	S22-Au0069924	NCP	uS/cm	51	62	19	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	S22-Au0069924	NCP	pH Units	8.9	8.8	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060711	CP	%	19	19	2.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060712	CP	mg/kg	3.0	3.1	4.1	30%	Pass	
Cadmium	S22-Au0060712	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Au0060712	CP	mg/kg	9.6	9.4	1.2	30%	Pass	
Copper	S22-Au0060712	CP	mg/kg	27	28	4.3	30%	Pass	
Mercury	S22-Au0060712	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Au0060712	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Au0060712	CP	mg/kg	86	91	5.1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cadmium	S22-Au0060720	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Copper	S22-Au0060720	CP	mg/kg	7.7	9.4	19	30%	Pass	
Lead	S22-Au0060720	CP	mg/kg	30	34	13	30%	Pass	
Nickel	S22-Au0060720	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060721	CP	mg/kg	3.0	3.2	6.0	30%	Pass	
Cadmium	S22-Au0060721	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Au0060721	CP	mg/kg	12	11	4.7	30%	Pass	
Copper	S22-Au0060721	CP	mg/kg	9.9	9.5	4.1	30%	Pass	
Lead	S22-Au0060721	CP	mg/kg	38	34	11	30%	Pass	
Mercury	S22-Au0060721	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Au0060721	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Au0060721	CP	mg/kg	40	31	24	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060721	CP	%	20	20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060731	CP	%	21	22	5.5	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060732	CP	mg/kg	8.8	6.1	37	30%	Fail	Q15
Cadmium	S22-Au0060732	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Au0060732	CP	mg/kg	23	18	21	30%	Pass	
Copper	S22-Au0060732	CP	mg/kg	17	19	10	30%	Pass	
Lead	S22-Au0060732	CP	mg/kg	78	84	7.6	30%	Pass	
Mercury	S22-Au0060732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Au0060732	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Au0060732	CP	mg/kg	48	53	9.4	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S22-Au0060737	CP	meq/100g	2.9	2.4	22	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060741	CP	%	26	28	7.8	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060742	CP	mg/kg	3.2	3.2	<1	30%	Pass	
Cadmium	S22-Au0060742	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Au0060742	CP	mg/kg	9.0	8.2	9.0	30%	Pass	
Copper	S22-Au0060742	CP	mg/kg	8.7	7.9	9.5	30%	Pass	
Nickel	S22-Au0060742	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Au0060742	CP	mg/kg	39	38	4.9	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060751	CP	%	12	13	16	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060760	CP	mg/kg	3.4	3.9	15	30%	Pass	
Cadmium	S22-Au0060760	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Copper	S22-Au0060760	CP	mg/kg	19	22	16	30%	Pass	
Lead	S22-Au0060760	CP	mg/kg	29	31	6.4	30%	Pass	
Nickel	S22-Au0060760	CP	mg/kg	9.9	11	14	30%	Pass	
Zinc	S22-Au0060760	CP	mg/kg	72	79	9.6	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Au0060761	CP	%	14	13	1.3	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Au0060762	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Au0060762	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Au0060762	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060762	CP	mg/kg	5.2	4.4	16	30%	Pass	
Cadmium	S22-Au0060762	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Au0060762	CP	mg/kg	14	13	9.5	30%	Pass	
Copper	S22-Au0060762	CP	mg/kg	17	20	11	30%	Pass	
Lead	S22-Au0060762	CP	mg/kg	42	33	25	30%	Pass	
Mercury	S22-Au0060762	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Au0060762	CP	mg/kg	9.5	11	12	30%	Pass	
Zinc	S22-Au0060762	CP	mg/kg	110	100	1.5	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Aargus Pty Ltd
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Lidcombe
NSW 2141

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- ALL INVOICES/SRA - Mark Kelly**

Report **917902-W**
Project name DSI Hunters Hill
Project ID ES8561
Received Date Aug 25, 2022

Client Sample ID			**R1**	**R2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S22-Au0060771**	**S22-Au0060772**
Date Sampled			**Aug 24, 2022**	**Aug 24, 2022**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Metals M8	Sydney	Aug 31, 2022	28 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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NSW 2141

Project Name: DSI Hunters Hill
Project ID: ES8561

Order No.:
Report #: 917902
Phone: 02 9568 6159
Fax: 02 9566 6179

Received: Aug 25, 2022 5:33 PM
Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH1_0-0.1	Aug 23, 2022		Soil	S22-Au0060704		X		X		X		
2	BH2_0-0.1	Aug 24, 2022		Soil	S22-Au0060705		X	X	X				
3	BH3_0-0.1	Aug 24, 2022		Soil	S22-Au0060706		X		X		X		
4	BH4_0-0.1	Aug 24, 2022		Soil	S22-Au0060707		X	X	X				
5	BH4_0.3-0.4	Aug 24, 2022		Soil	S22-Au0060708	X		X	X	X			
6	BH5_0-0.1	Aug 24, 2022		Soil	S22-Au0060709		X		X		X		
7	BH6_0-0.1	Aug 24, 2022		Soil	S22-Au0060710		X	X	X				
8	BH7_0-0.1	Aug 24, 2022		Soil	S22-Au0060711		X		X		X		
9	BH8_0-0.1	Aug 24, 2022		Soil	S22-Au0060712		X	X	X				
10	BH8_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060713	X		X	X	X			
11	BH9_0-0.1	Aug 24, 2022		Soil	S22-Au0060714		X		X		X		
12	BH10_0-0.1	Aug 24, 2022		Soil	S22-Au0060715		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
13	BH11_0-0.1	Aug 24, 2022		Soil	S22-Au0060716		X		X		X		
14	BH12_0-0.1	Aug 24, 2022		Soil	S22-Au0060717		X	X	X				
15	BH13_0-0.1	Aug 24, 2022		Soil	S22-Au0060718		X		X		X		
16	BH14_0-0.1	Aug 24, 2022		Soil	S22-Au0060719		X	X	X				
17	BH15_0-0.1	Aug 24, 2022		Soil	S22-Au0060720		X		X		X		
18	BH16_0-0.1	Aug 24, 2022		Soil	S22-Au0060721		X	X	X				
19	BH17_0-0.1	Aug 24, 2022		Soil	S22-Au0060722		X		X		X		
20	BH17_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060723	X		X	X	X			
21	BH18_0-0.1	Aug 24, 2022		Soil	S22-Au0060724			X	X				
22	BH19_0-0.1	Aug 24, 2022		Soil	S22-Au0060725		X		X		X		
23	BH20_0-0.1	Aug 24, 2022		Soil	S22-Au0060726		X	X	X				
24	BH21_0-0.1	Aug 24, 2022		Soil	S22-Au0060727		X		X		X		
25	BH22_0-0.1	Aug 24, 2022		Soil	S22-Au0060728		X	X	X				
26	BH23_0-0.1	Aug 24, 2022		Soil	S22-Au0060729		X		X		X		
27	BH24_0-0.1	Aug 24, 2022		Soil	S22-Au0060730		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
28	BH25_0-0.1	Aug 24, 2022		Soil	S22-Au0060731		X		X		X		
29	BH26_0-0.1	Aug 24, 2022		Soil	S22-Au0060732		X	X	X				
30	BH27_0-0.1	Aug 24, 2022		Soil	S22-Au0060733		X		X		X		
31	BH27_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060734	X		X	X	X			
32	BH28_0-0.1	Aug 24, 2022		Soil	S22-Au0060735		X	X	X				
33	BH29_0-0.1	Aug 24, 2022		Soil	S22-Au0060736		X	X	X				
34	BH29_0.6-0.7	Aug 24, 2022		Soil	S22-Au0060737	X		X	X	X			
35	BH30_0-0.1	Aug 24, 2022		Soil	S22-Au0060738		X	X	X				
36	BH31_0-0.1	Aug 24, 2022		Soil	S22-Au0060739		X	X	X				
37	BH32_0-0.1	Aug 24, 2022		Soil	S22-Au0060740		X	X	X				
38	BH33_0-0.1	Aug 24, 2022		Soil	S22-Au0060741		X	X	X				
39	BH34_0-0.1	Aug 24, 2022		Soil	S22-Au0060742		X	X	X				
40	BH34_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060743	X		X	X	X			
41	BH35_0-0.1	Aug 24, 2022		Soil	S22-Au0060744		X	X	X				
42	BH36_0-0.1	Aug 24, 2022		Soil	S22-Au0060745		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
43	BH37_0-0.1	Aug 24, 2022		Soil	S22-Au0060746		X	X	X				
44	BH38_0-0.1	Aug 24, 2022		Soil	S22-Au0060747		X		X		X		
45	BH39_0-0.1	Aug 24, 2022		Soil	S22-Au0060748		X		X		X		
46	BH40_0-0.1	Aug 24, 2022		Soil	S22-Au0060749		X		X		X		
47	BH41_0-0.1	Aug 24, 2022		Soil	S22-Au0060750		X		X		X		
48	BH42_0-0.1	Aug 24, 2022		Soil	S22-Au0060751		X	X	X				
49	BH43_0-0.1	Aug 24, 2022		Soil	S22-Au0060752		X	X	X				
50	BH44_0-0.1	Aug 24, 2022		Soil	S22-Au0060753		X		X		X		
51	BH45_0-0.1	Aug 24, 2022		Soil	S22-Au0060754		X		X		X		
52	BH46_0-0.1	Aug 24, 2022		Soil	S22-Au0060755		X	X	X				
53	BH46_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060756	X		X	X	X			
54	BH47_0-0.1	Aug 24, 2022		Soil	S22-Au0060757		X	X	X				
55	BH48_0-0.1	Aug 24, 2022		Soil	S22-Au0060758		X	X	X				
56	BH49_0-0.1	Aug 24, 2022		Soil	S22-Au0060759		X	X	X				
57	BH50_0-0.1	Aug 24, 2022		Soil	S22-Au0060760		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
58	BH50_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060761	X		X	X	X			
59	BH51_0-0.1	Aug 24, 2022		Soil	S22-Au0060762		X	X	X				
60	BH52_0-0.1	Aug 24, 2022		Soil	S22-Au0060763		X	X	X				
61	DUPLICATE D1	Aug 24, 2022		Soil	S22-Au0060764		X	X	X				
62	DUPLICATE D2	Aug 24, 2022		Soil	S22-Au0060765		X	X	X				
63	DUPLICATE D3	Aug 24, 2022		Soil	S22-Au0060766		X		X		X		
64	TripSpike 1	Aug 24, 2022		Soil	S22-Au0060767								X
65	Trip blank	Aug 24, 2022		Soil	S22-Au0060768							X	
66	TripBlank 1	Aug 24, 2022		Soil	S22-Au0060769							X	
67	Trip Spike	Aug 24, 2022		Soil	S22-Au0060770								X
68	R1	Aug 24, 2022		Water	S22-Au0060771			X					
69	R2	Aug 24, 2022		Water	S22-Au0060772			X					
Test Counts						8	54	44	63	8	21	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	98			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	94			80-120	Pass	
Mercury	%	100			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	92			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B22-Au0067802	NCP	%	100			75-125	Pass	
Cadmium	B22-Au0067802	NCP	%	98			75-125	Pass	
Chromium	B22-Au0067802	NCP	%	95			75-125	Pass	
Copper	B22-Au0067802	NCP	%	91			75-125	Pass	
Lead	B22-Au0067802	NCP	%	94			75-125	Pass	
Mercury	B22-Au0067802	NCP	%	102			75-125	Pass	
Nickel	B22-Au0067802	NCP	%	91			75-125	Pass	
Zinc	B22-Au0067802	NCP	%	89			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060771	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-Au0060771	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Au0060771	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-Au0060771	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S22-Au0060771	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S22-Au0060771	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Au0060771	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-Au0060771	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Au0060772	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-Au0060772	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Au0060772	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-Au0060772	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S22-Au0060772	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S22-Au0060772	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Au0060772	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-Au0060772	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Sample Receipt Advice

Company name:	Aargus Pty Ltd
Contact name:	- ALL INVOICES/SRA - Mark Kelly
Project name:	DSI Hunters Hill
Project ID:	ES8561
Turnaround time:	5 Day
Date/Time received	Aug 25, 2022 5:33 PM
Eurofins reference	917902

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to - ALL INVOICES/SRA - Mark Kelly - mark.kelly@aargus.net.

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NSW 2141

Project Name: DSI Hunters Hill
Project ID: ES8561

Order No.:
Report #: 917902
Phone: 02 9568 6159
Fax: 02 9566 6179

Received: Aug 25, 2022 5:33 PM
Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH1_0-0.1	Aug 23, 2022		Soil	S22-Au0060704		X		X		X		
2	BH2_0-0.1	Aug 24, 2022		Soil	S22-Au0060705		X	X	X				
3	BH3_0-0.1	Aug 24, 2022		Soil	S22-Au0060706		X		X		X		
4	BH4_0-0.1	Aug 24, 2022		Soil	S22-Au0060707		X	X	X				
5	BH4_0.3-0.4	Aug 24, 2022		Soil	S22-Au0060708	X		X	X	X			
6	BH5_0-0.1	Aug 24, 2022		Soil	S22-Au0060709		X		X		X		
7	BH6_0-0.1	Aug 24, 2022		Soil	S22-Au0060710		X	X	X				
8	BH7_0-0.1	Aug 24, 2022		Soil	S22-Au0060711		X		X		X		
9	BH8_0-0.1	Aug 24, 2022		Soil	S22-Au0060712		X	X	X				
10	BH8_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060713	X		X	X	X			
11	BH9_0-0.1	Aug 24, 2022		Soil	S22-Au0060714		X		X		X		
12	BH10_0-0.1	Aug 24, 2022		Soil	S22-Au0060715		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
13	BH11_0-0.1	Aug 24, 2022		Soil	S22-Au0060716		X		X		X		
14	BH12_0-0.1	Aug 24, 2022		Soil	S22-Au0060717		X	X	X				
15	BH13_0-0.1	Aug 24, 2022		Soil	S22-Au0060718		X		X		X		
16	BH14_0-0.1	Aug 24, 2022		Soil	S22-Au0060719		X	X	X				
17	BH15_0-0.1	Aug 24, 2022		Soil	S22-Au0060720		X		X		X		
18	BH16_0-0.1	Aug 24, 2022		Soil	S22-Au0060721		X	X	X				
19	BH17_0-0.1	Aug 24, 2022		Soil	S22-Au0060722		X		X		X		
20	BH17_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060723	X		X	X	X			
21	BH18_0-0.1	Aug 24, 2022		Soil	S22-Au0060724			X	X				
22	BH19_0-0.1	Aug 24, 2022		Soil	S22-Au0060725		X		X		X		
23	BH20_0-0.1	Aug 24, 2022		Soil	S22-Au0060726		X	X	X				
24	BH21_0-0.1	Aug 24, 2022		Soil	S22-Au0060727		X		X		X		
25	BH22_0-0.1	Aug 24, 2022		Soil	S22-Au0060728		X	X	X				
26	BH23_0-0.1	Aug 24, 2022		Soil	S22-Au0060729		X		X		X		
27	BH24_0-0.1	Aug 24, 2022		Soil	S22-Au0060730		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
28	BH25_0-0.1	Aug 24, 2022		Soil	S22-Au0060731		X		X		X		
29	BH26_0-0.1	Aug 24, 2022		Soil	S22-Au0060732		X	X	X				
30	BH27_0-0.1	Aug 24, 2022		Soil	S22-Au0060733		X		X		X		
31	BH27_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060734	X		X	X	X			
32	BH28_0-0.1	Aug 24, 2022		Soil	S22-Au0060735		X	X	X				
33	BH29_0-0.1	Aug 24, 2022		Soil	S22-Au0060736		X	X	X				
34	BH29_0.6-0.7	Aug 24, 2022		Soil	S22-Au0060737	X		X	X	X			
35	BH30_0-0.1	Aug 24, 2022		Soil	S22-Au0060738		X	X	X				
36	BH31_0-0.1	Aug 24, 2022		Soil	S22-Au0060739		X	X	X				
37	BH32_0-0.1	Aug 24, 2022		Soil	S22-Au0060740		X	X	X				
38	BH33_0-0.1	Aug 24, 2022		Soil	S22-Au0060741		X	X	X				
39	BH34_0-0.1	Aug 24, 2022		Soil	S22-Au0060742		X	X	X				
40	BH34_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060743	X		X	X	X			
41	BH35_0-0.1	Aug 24, 2022		Soil	S22-Au0060744		X	X	X				
42	BH36_0-0.1	Aug 24, 2022		Soil	S22-Au0060745		X	X	X				

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Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
43	BH37_0-0.1	Aug 24, 2022		Soil	S22-Au0060746		X	X	X				
44	BH38_0-0.1	Aug 24, 2022		Soil	S22-Au0060747		X		X		X		
45	BH39_0-0.1	Aug 24, 2022		Soil	S22-Au0060748		X		X		X		
46	BH40_0-0.1	Aug 24, 2022		Soil	S22-Au0060749		X		X		X		
47	BH41_0-0.1	Aug 24, 2022		Soil	S22-Au0060750		X		X		X		
48	BH42_0-0.1	Aug 24, 2022		Soil	S22-Au0060751		X	X	X				
49	BH43_0-0.1	Aug 24, 2022		Soil	S22-Au0060752		X	X	X				
50	BH44_0-0.1	Aug 24, 2022		Soil	S22-Au0060753		X		X		X		
51	BH45_0-0.1	Aug 24, 2022		Soil	S22-Au0060754		X		X		X		
52	BH46_0-0.1	Aug 24, 2022		Soil	S22-Au0060755		X	X	X				
53	BH46_0.4-0.5	Aug 24, 2022		Soil	S22-Au0060756	X		X	X	X			
54	BH47_0-0.1	Aug 24, 2022		Soil	S22-Au0060757		X	X	X				
55	BH48_0-0.1	Aug 24, 2022		Soil	S22-Au0060758		X	X	X				
56	BH49_0-0.1	Aug 24, 2022		Soil	S22-Au0060759		X	X	X				
57	BH50_0-0.1	Aug 24, 2022		Soil	S22-Au0060760		X	X	X				

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Due: Sep 2, 2022
Priority: 5 Day
Contact Name: - ALL INVOICES/SRA - Mark Kelly

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Metals M8	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
58	BH50_0.5-0.6	Aug 24, 2022		Soil	S22-Au0060761	X		X	X	X			
59	BH51_0-0.1	Aug 24, 2022		Soil	S22-Au0060762		X	X	X				
60	BH52_0-0.1	Aug 24, 2022		Soil	S22-Au0060763		X	X	X				
61	DUPLICATE D1	Aug 24, 2022		Soil	S22-Au0060764		X	X	X				
62	DUPLICATE D2	Aug 24, 2022		Soil	S22-Au0060765		X	X	X				
63	DUPLICATE D3	Aug 24, 2022		Soil	S22-Au0060766		X		X		X		
64	TripSpike 1	Aug 24, 2022		Soil	S22-Au0060767								X
65	Trip blank	Aug 24, 2022		Soil	S22-Au0060768							X	
66	TripBlank 1	Aug 24, 2022		Soil	S22-Au0060769							X	
67	Trip Spike	Aug 24, 2022		Soil	S22-Au0060770								X
68	R1	Aug 24, 2022		Water	S22-Au0060771			X					
69	R2	Aug 24, 2022		Water	S22-Au0060772			X					
Test Counts						8	54	44	63	8	21	2	2

AARGUS PTY LTD

Laboratory Test Request / Chain of Custody Record

46 Smithfield Road
Smithfield NSW 2164

P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038

Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

TO: Eurofins Environment Testing Australia Pty Ltd
179 Magowar Road
Girraween NSW 2145

PH: 02 9900 8432 **EMAIL:** EnviroSampleNSW@eurofins.com
ATTN: Sample Receipt

Sampling Date: 23.08.2022 / 24.08.2022 **Job No:** ES8561
Sampled By: SK **Project:** DSI
Project Manager: MK **Location:** Hunters Hill

Results required by: STANDARD

Sampling details			Sample type			Metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn)	TPH	BTEXN	PAH	OCP	pH, CEC					Analysis Suite(s)	KEEP SAMPLE?
Location	Depth (m)	Date	Soil	Water (Filled Up)	Air												
BH1	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH2	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH3	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH4	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH4	0.3-0.4	23.08.2022	DSG			✓					✓					M8	YES
BH5	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH6	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH7	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH8	0-0.1	23.08.2022	DSG			✓				✓						M8	YES
BH8	0.5-0.6	23.08.2022	DSG			✓					✓					M8	YES
BH9	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH10	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH11	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH12	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH13	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH14	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH15	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH16	0-0.1	23.08.2022	DSG			✓				✓						M8	YES
BH17	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH17	0.5-0.6	23.08.2022	DSG			✓					✓					M8	YES
BH18	0-0.1	23.08.2022	DSG			✓										M8	YES
BH19	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH20	0-0.1	23.08.2022	DSG			✓				✓						M8	YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass ja	DSP	Disturbed soil sample (small plastic bag)	@ mole H^+/tonne
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required	
GV	Glass vial	OTH	Other	ACAN	Air sample, canister	

917902

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PH: 02 9900 8432 **EMAIL:** EnviroSampleNSW@eurofins.com
ATTN: Sample Receipt

Sampling Date:	23.08.2022 / 24.08.2022	**Job No:**	ES8561
Sampled By:	SK	**Project:**	DSI
Project Manager:	MK	**Location:**	Hunters Hill

Results required by: STANDARD

Sampling details			Sample type														
Location	Depth (m)	Date	Soil	Water (Filled Up)	Air	Metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn)	TPH	BTEXN	PAH	OCP	pH, CEC					Analysis Suite(s)	KEEP SAMPLE?
BH21	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH22	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH23	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH24	0-0.1	23.08.2022	DSG			✓				✓						M8	YES
BH25	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH26	0-0.1	23.08.2022	DSG			✓				✓						M8	YES
BH27	0-0.1	23.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH27	0.4-0.5	23.08.2022	DSG			✓					✓					M8	YES
BH28	0-0.1	23.08.2022	DSG			✓				✓						M8	YES
BH29	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH29	0.6-0.7	24.08.2022	DSG			✓					✓					M8	YES
BH30	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH31	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH32	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH33	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH34	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH34	0.5-0.6	24.08.2022	DSG			✓					✓					M8	YES
BH35	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH36	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH37	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH38	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH39	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH40	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass ja	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

@ mole H^+/tonne

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ATTN: **Sample Receipt**

Sampling Date:	23.08.2022 / 24.08.2022	**Job No:**	ES8561
Sampled By:	SK	**Project:**	DSI
Project Manager:	MK	**Location:**	Hunters Hill

Results required by: STANDARD

Sampling details			Sample type														
Location	Depth (m)	Date	Soil	Water (Filled Up)	Air	Metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn)	TPH	BTEXN	PAH	OCP	pH, CEC					Analysis Suite(s)	KEEP SAMPLE?
BH41	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH42	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH43	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH44	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH45	0-0.1	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
BH46	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH46	0.4-0.5	24.08.2022	DSG			✓					✓					M8	YES
BH47	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH48	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH49	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH50	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH50	0.5-0.6	24.08.2022	DSG			✓					✓					M8	YES
BH51	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
BH52	0-0.1	24.08.2022	DSG			✓				✓						M8	YES
DUPLICATE D1	-	23.08.2022	DSG			✓				✓						M8	YES
DUPLICATE D2	-	24.08.2022	DSG			✓				✓						M8	YES
DUPLICATE D3	-	24.08.2022	DSG			✓	✓	✓	✓	✓						B7	YES
TripSpike 1	-	23.08.2022		Vial		Please test for TRH F1 and BTEX											YES
TripSpike 2	-	24.08.2022		Vial													YES
TripBlank 1	-	23.08.2022		Vial													YES
TripBlank2	-	24.08.2022		Vial													YES
R1	-	23.08.2022	WP,WG, VIALS			✓										M8	YES
R2	-	24.08.2022	WP,WG, VIALS			✓										M8	YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass ja	DSP	Disturbed soil sample (small plastic bag)	@ mole H^+/tonne
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required	
GV	Glass vial	OTH	Other	ACAN	Air sample, canister	

#917902

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET104019 / 107199 / 26 – 55
Your ref : ES8561 – DSI – Hunters Hill
NATA Accreditation No: 14484

29 August 2022

Aargus Pty Ltd
46 Smithfield Road
Smithfield NSW 2165

Attn: Mr Mark Kelly

Accredited for compliance with ISO/IEC 17025 - Testing.

Dear Mark

Asbestos Identification
This report presents the results of thirty samples out of fifty five samples, forwarded by Aargus Pty Ltd on 25 August 2022, for analysis for asbestos.

1.Introduction: Thirty samples out of fifty five samples forwarded were examined and analysed for the presence of asbestos on 26 and 29 August 2022.

2. Methods: The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

The report also provides approximate weights and percentages, categories of asbestos forms appearing in the sample, such as **AF** (Asbestos Fines), **FA** (Friable Asbestos) and **ACM** (Asbestos Containing Material), also satisfying the requirements of the NEPM Guidelines.

3. Results : **Sample No. 26. ASET104019 / 107199 / 26. ES8561 - BH26-0-0.1.**
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 517.0g.
The sample consisted of a mixture of sandy soil, stones, sandstones, organic fibres and plant matter.
No asbestos detected.

Sample No. 27. ASET104019 / 107199 / 27. ES8561 - BH27-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 571.0g.
The sample consisted of a mixture of clayish sandy soil, organic fibres, stones, sandstones and plant matter.
No asbestos detected.

Sample No. 28. ASET104019 / 107199 / 28. ES8561 - BH28-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 504.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, organic fibres and plant matter.
No asbestos detected.

Sample No. 29. ASET104019 / 107199 / 29. ES8561 - BH29-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 580.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres, sandstones and plant matter.
No asbestos detected.

Sample No. 30. ASET104019 / 107199 / 30. ES8561 - BH30-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 576.0g.
The sample consisted of a mixture of sandy soil, sandstones, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 31. ASET104019 / 107199 / 31. ES8561 - BH31-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 485.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 32. ASET104019 / 107199 / 32. ES8561 - BH32-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 487.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 33. ASET104019/ 107199/ 33. ES8561 - BH33-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 518.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 34. ASET104019 / 107199 / 34. ES8561 - BH34-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 569.0g.
The sample consisted of a mixture of clayish sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 35. ASET104019 / 107199 / 35. ES8561 - BH35-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.2 cm
Approximate total dry weight of soil = 559.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 36. ASET104019 / 107199 / 36. ES8561 - BH36-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 441.0g.
The sample consisted of a mixture of sandy soil, stones, brick like material, wood chips, organic fibres and plant matter.
No asbestos detected.

Sample No. 37. ASET104019 / 107199 / 37. ES8561 - BH37-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 520.0g.
The sample consisted of a mixture of sandy soil, stones, rubberised mastic like material, organic fibres and plant matter.
No asbestos detected.

Sample No. 38. ASET104019 / 107199 / 38. ES8561 - BH38-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 606.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 39. ASET104019 / 107199 / 39. ES8561 - BH39-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 482.0g.
The sample consisted of a mixture of sandy soil, sandstones, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 40. ASET104019 / 107199 / 40. ES8561 - BH40-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 578.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 41. ASET104019 / 107199 / 41. ES8561 - BH41-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 613.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 42. ASET104019 / 107199 / 42. ES8561 - BH42-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 621.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 43. ASET104019 / 107199 / 43. ES8561 - BH43-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.9 cm
Approximate total dry weight of soil = 626.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 44. ASET104019 / 107199 / 44. ES8561 - BH44-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.2 cm
Approximate total dry weight of soil = 718.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 45. ASET104019 / 107199 / 45. ES8561 - BH45-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.4 cm
Approximate total dry weight of soil = 637.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 46. ASET104019 / 107199 / 46. ES8561 - BH46-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.2 cm
Approximate total dry weight of soil = 725.0g.
The sample consisted of a mixture of clayish sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 47. ASET104019 / 107199 / 47. ES8561 - BH47-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.4 cm
Approximate total dry weight of soil = 570.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Sample No. 48. ASET104019 / 107199 / 48. ES8561 - BH48-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.4 cm
Approximate total dry weight of soil = 641.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 49. ASET104019 / 107199 / 49. ES8561 - BH49-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 502.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres, sandstones and plant matter.
No asbestos detected.

Sample No. 50. ASET104019 / 107199 / 50. ES8561 - BH50-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.7 cm
Approximate total dry weight of soil = 662.0g.
The sample consisted of a mixture of sandy soil, stones, sandstones, organic fibres and plant matter.
No asbestos detected.

Sample No. 51. ASET104019 / 107199 / 51. ES8561 - BH51-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 620.0g.
The sample consisted of a mixture of clayish sandy soil, stones, glass pieces, sandstones, organic fibres and plant matter.
No asbestos detected.

Sample No. 52. ASET104019 / 107199 / 52. ES8561 - BH52-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 550.0g.
The sample consisted of a mixture of clayish sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Ω Sample No. 53. ASET104019 / 107199 / 53. ES8561 - DUPLICATE D1.
Approx dimensions 10.0 cm x 10.0 cm x 4.0 cm
Approximate total dry weight of soil = 394.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Sample No. 54. ASET104019 / 107199 / 54. ES8561 - DUPLICATE D2.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 581.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones and plant matter.
No asbestos detected.

Ω Sample No. 55. ASET104019 / 107199 / 55. ES8561 - DUPLICATE D3.
Approx dimensions 10.0 cm x 10.0 cm x 4.1 cm
Approximate total dry weight of soil = 419.0g.
The sample consisted of a mixture of sandy soil, stones, organic fibres and plant matter.
No asbestos detected.

Reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia and it also satisfies the requirements of the current NEPM Guidelines. NATA Accreditation does not cover the performance of this service.

Disclaimers;

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos, as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported. This weight disclaimer also covers weight / weight percentages if given.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos types detected in soil/dust.
*** denotes asbestos detected in ACM in bonded form.**
 # denotes friable asbestos as soft fibro plaster, fragments of ACM smaller than 7mm which are considered as friable and / or highly weathered ACM that will easily crumble.

λ denotes samples that have been analysed only in accordance to AS 4964 – 2004.
Ω Sample volume criteria of 500mL have not been satisfied.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating "No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected and trace analysis have been performed on each sample as required by AS4964-2004. When loose asbestos fibres/ fibre bundles are detected and reported that means they are larger handpicked fibres/ fibre bundles, and they do not represent respirable fibres. Dust/soil samples are always subjected to trace analysis except where the amounts involved are extremely minute and trace analysis is not possible to be carried out. When trace analysis is not performed on dust samples it will be indicated in the report that trace analysis has not been carried out due to the volume of the sample being extremely minute.

Estimation of asbestos weights involves the use of following assumptions;
Volume of each kind of Asbestos present in broken edges have been visually estimated and its been assumed that volumes remain similar throughout the binding matrix and those volumes are only approximate and not exact. Material densities have been assumed to be similar to commonly found similar materials and may not be exact.

All samples indicating "No asbestos detected" are assumed to be less than 0.001% for friable AF and FA portions detected and 0.01 % for ACM detected unless the approximate weight is given.

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET104019 / 107199 / 1 - 25
Your ref : ES8561 – DSI - Hunters Hill
NATA Accreditation No: 14484

26 August 2022

Aargus Pty Ltd
46 Smithfield Road
Smithfield NSW 2165

Attn: Mr Mark Kelly

Accredited for compliance with ISO/IEC 17025 - Testing.

Dear Mark

Asbestos Identification
This report presents the results of twenty five samples out of fifty five samples, forwarded by Aargus Pty Ltd on 25 August 2022, for analysis for asbestos.

1.Introduction: Twenty five samples out of fifty five samples forwarded were examined and analysed for the presence of asbestos on 26 August 2022.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

The report also provides approximate weights and percentages, categories of asbestos forms appearing in the sample, such as **AF**(Asbestos Fines), **FA**(Friable Asbestos) and **ACM** (Asbestos Containing Material), also satisfying the requirements of the NEPM Guidelines).

3. Results :

Sample No. 1. ASET104019 / 107199 / 1. ES8561 - BH1-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 526.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of brick like material, paint flakes and plant matter.
No asbestos detected.

Sample No. 2. ASET104019 / 107199 / 2. ES8561 - BH2-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.0 cm
Approximate total dry weight of soil = 598.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of sandstone, wood chips and plant matter.
No asbestos detected.

Sample No. 3. ASET104019 / 107199 / 3. ES8561 - BH3-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.2 cm
The sample consisted of a mixture of sandy soil, stones, fragments of fibro plaster# (FA), sandstone and plant matter.
Chrysotile# (Approximate estimated weight = 0.0005g) asbestos, Amosite# (Approximate estimated weight = 0.0001g) asbestos and Crocidolite# (Approximate estimated weight = 0.0002g) asbestos detected.
Approximate total dry weight of soil = 618.0g.
Approximate estimated weight of asbestos in soil in the form of FA = 0.0008g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.00013%.

Sample No. 4. ASET104019 / 107199 / 4. ES8561 - BH4-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.2 cm
The sample consisted of a mixture of sandy soil, stones, fragments of fibro plaster# (FA), sandstone and plant matter.
Chrysotile# (Approximate estimated weight = 0.024g) asbestos and Amosite# (Approximate estimated weight = 0.005g) asbestos detected.
Approximate total dry weight of soil = 617.0g.
Approximate estimated weight of asbestos in soil in the form of FA = 0.029g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.005%.

Sample No. 5. ASET104019 / 107199 / 5. ES8561 - BH5-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.6 cm
Approximate total dry weight of soil = 656.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of paint flakes, wood chips and plant matter.
No asbestos detected.

Sample No. 6. ASET104019 / 107199 / 6. ES8561 - BH6-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.9 cm
Approximate total dry weight of soil = 693.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of brick like material, cement like material, plastic, wood chips and plant matter.
No asbestos detected.

Sample No. 7. ASET104019 / 107199 / 7. ES8561 - BH7-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.4 cm
Approximate total dry weight of soil = 640.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of brick like material, paint flakes, plastic, sandstone, wood chips and plant matter.
No asbestos detected.

Ω Sample No. 8. ASET104019 / 107199 / 8. ES8561 - BH8-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 3.9 cm
Approximate total dry weight of soil = 386.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of paint flakes, wood chips and plant matter.
No asbestos detected.

Sample No. 9. ASET104019 / 107199 / 9. ES8561 - BH9-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.3 cm
Approximate total dry weight of soil = 531.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of sandstone and plant matter.
No asbestos detected.

Sample No. 10. ASET104019 / 107199 / 10. ES8561 - BH10-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.1 cm
Approximate total dry weight of soil = 610.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of paint flakes and plant matter.
No asbestos detected.

Sample No. 11. ASET104019 / 107199 / 11. ES8561 - BH11-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.1 cm
Approximate total dry weight of soil = 605.0g.
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Ω Sample No. 12. ASET104019 / 107199 / 12. ES8561 - BH12-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 4.7 cm
Approximate total dry weight of soil = 472.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of wood chips and plant matter.
No asbestos detected.

Sample No. 13. ASET104019 / 107199 / 13. ES8561 - BH13-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.4 cm
Approximate total dry weight of soil = 543.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of paint flakes, sandstone and plant matter.
No asbestos detected.

Sample No. 14. ASET104019 / 107199 / 14. ES8561 - BH14-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.2 cm
Approximate total dry weight of soil = 524.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of sandstone and plant matter.
No asbestos detected.

Sample No. 15. ASET104019 / 107199 / 15. ES8561 - BH15-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.6 cm
Approximate total dry weight of soil = 562.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of sandstone and plant matter.
No asbestos detected.

Ω Sample No. 16. ASET104019 / 107199 / 16. ES8561 - BH16-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 4.9 cm
Approximate total dry weight of soil = 485.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of sandstone and plant matter.
No asbestos detected.

Sample No. 17. ASET104019 / 107199 / 17. ES8561 - BH17-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 7.0 cm
Approximate total dry weight of soil = 696.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of paint flakes, sandstone and plant matter.
No asbestos detected.

Sample No. 18. ASET104019 / 107199 / 18. ES8561 - BH18-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 505.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of sandstone and plant matter.
No asbestos detected.

Sample No. 19. ASET104019 / 107199 / 19. ES8561 - BH19-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 8.1 cm
Approximate total dry weight of soil = 813.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of glass, sandstone and plant matter.
No asbestos detected.

Sample No. 20. ASET104019 / 107199 / 20. ES8561 - BH20-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.0 cm
Approximate total dry weight of soil = 615.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of sandstone and plant matter.
No asbestos detected.

Sample No. 21. ASET104019 / 107199 / 21. ES8561 - BH21-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 6.1 cm
Approximate total dry weight of soil = 612.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of glass, plastic, sandstone and plant matter.
No asbestos detected.

Sample No. 22. ASET104019 / 107199 / 22. ES8561 - BH22-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.6 cm
Approximate total dry weight of soil = 559.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of brick like material, plastic, wood chips and plant matter.
No asbestos detected.

Sample No. 23. ASET104019 / 107199 / 23. ES8561 - BH23-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
Approximate total dry weight of soil = 505.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of glass, sandstone and plant matter.
No asbestos detected.

Sample No. 24. ASET104019 / 107199 / 24. ES8561 - BH24-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
Approximate total dry weight of soil = 500.0g.
The sample consisted of a mixture of sandy soil, stones, fragments of glass and plant matter.
No asbestos detected.

Sample No. 25. ASET104019 / 107199 / 25. ES8561 - BH25-0-0.1.
Approx dimensions 10.0 cm x 10.0 cm x 4.9 cm
Approximate total dry weight of soil = 494.0g.
The sample consisted of a mixture of sandy soil, organic fibres, stones, fragments of cement like material and plant matter.
No asbestos detected.

Reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory

Accredited for compliance with ISO/IEC 17025 - Testing.

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia and it also satisfies the requirements of the current NEPM Guidelines. NATA Accreditation does not cover the performance of this service.

Disclaimers;

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos, as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported. This weight disclaimer also covers weight / weight percentages if given.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos types detected in soil/dust.
*** denotes asbestos detected in ACM in bonded form.**
 # denotes friable asbestos as soft fibro plaster, fragments of ACM smaller than 7mm which are considered as friable and / or highly weathered ACM that will easily crumble.
λ denotes samples that have been analysed only in accordance to AS 4964 – 2004.
Ω Sample volume criteria of 500mL have not been satisfied.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating

"No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected and trace analysis have been performed on each sample as required by AS4964-2004. When loose asbestos fibres/ fibre bundles are detected and reported that means they are larger handpicked fibres/ fibre bundles, and they do not represent respirable fibres. Dust/soil samples are always subjected to trace analysis except where the amounts involved are extremely minute and trace analysis is not possible to be carried out. When trace analysis is not performed on dust samples it will be indicated in the report that trace analysis has not been carried out due to the volume of the sample being extremely minute.

Estimation of asbestos weights involves the use of following assumptions;
Volume of each kind of Asbestos present in broken edges have been visually estimated and its been assumed that volumes remain similar throughout the binding matrix and those volumes are only approximate and not exact. Material densities have been assumed to be similar to commonly found similar materials and may not be exact.

All samples indicating "No asbestos detected" are assumed to be less than 0.001% for friable AF and FA portions detected and 0.01 % for ACM detected unless the approximate weight is given.

ASET104019/107199/1-55

AARGUS PTY LTD

Laboratory Test Request / Chain of Custody Record

46 Smithfield Road
Smithfield NSW 2164

P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038

Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

TO: ASET - Australian Safer Environment & Technology Pty Ltd, Sydney
Suite 710 / 90 George Street, PO Box 1644
HORNSBY, NSW 2077, HORNSBY WESTFIELD NSW 1635

PH: 02 9987 2183 **FAX:** 02 9987 2151
ATTN: Samples Receipt **EMAIL** aset@bigpond.net.au

Sampling Date: 23.08.2022 AND 24.08.2022
Sampled By: SK
Project Manager: MK
Job No: ES8561
Project: DSI
Location: HUNTERS HILL

Results required by: STANDARD

	Sampling details			Sample type														
	Location	Depth (m)	Date	Soil Samples			Asbestos presence/absence	Asbestos %w/w										KEEP SAMPLE?
1	BH1	0-0.1	23.08.2022	DSG				✓										YES
2	BH2	0-0.1	24.08.2022	DSG				✓										YES
3	BH3	0-0.1	23.08.2022	DSG				✓										YES
4	BH4	0-0.1	24.08.2022	DSG				✓										YES
5	BH5	0-0.1	24.08.2022	DSG				✓										YES
6	BH6	0-0.1	24.08.2022	DSG				✓										YES
7	BH7	0-0.1	24.08.2022	DSG				✓										YES
8	BH8	0-0.1	23.08.2022	DSG				✓										YES
9	BH9	0-0.1	24.08.2022	DSG				✓										YES
10	BH10	0-0.1	24.08.2022	DSG				✓										YES
11	BH11	0-0.1	24.08.2022	DSG				✓										YES
12	BH12	0-0.1	24.08.2022	DSG				✓										YES
13	BH13	0-0.1	24.08.2022	DSG				✓										YES
14	BH14	0-0.1	24.08.2022	DSG				✓										YES
15	BH15	0-0.1	23.08.2022	DSG				✓										YES
16	BH16	0-0.1	23.08.2022	DSG				✓										YES
17	BH17	0-0.1	23.08.2022	DSG				✓										YES
18	BH18	0-0.1	23.08.2022	DSG				✓										YES
19	BH19	0-0.1	23.08.2022	DSG				✓										YES
20	BH20	0-0.1	23.08.2022	DSG				✓										YES

25 AUG 2022

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			25/8/22 4:30pm

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass jar)	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

@ mole H^+/tonne

AARGUS PTY LTD

46 Smithfield Road
Smithfield NSW 2164

P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038

Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

Laboratory Test Request / Chain of Custody Record

TO: **ASET - Australian Safer Environment & Technology Pty Ltd, Sydney**
Suite 710 / 90 George Street **PO Box 1644**
HORNSBY, NSW 2077 **HORNSBY WESTFIELD NSW 1635**

PH: **02 9987 2183** FAX: **02 9987 2151**
ATTN: **Samples Receipt** EMAIL aset@bigpond.net.au

Sampling Date: 23.08.2022 AND 24.08.2022 **Job No:** ES8561
Sampled By: SK **Project:** DSI
Project Manager: MK **Location:** HUNTERS HILL

Results required by: STANDARD

	Sampling details			Sample type														
	Location	Depth (m)	Date	Soil Samples			Asbestos presence/absence	Asbestos %w/w										KEEP SAMPLE?
21	BH21	0-0.1	24.08.2022	DSG				✓										YES
22	BH22	0-0.1	24.08.2022	DSG				✓										YES
23	BH23	0-0.1	23.08.2022	DSG				✓										YES
24	BH24	0-0.1	23.08.2022	DSG				✓										YES
25	BH25	0-0.1	23.08.2022	DSG				✓										YES
26	BH26	0-0.1	23.08.2022	DSG				✓										YES
27	BH27	0-0.1	23.08.2022	DSG				✓										YES
28	BH28	0-0.1	23.08.2022	DSG				✓										YES
29	BH29	0-0.1	24.08.2022	DSG				✓										YES
30	BH30	0-0.1	24.08.2022	DSG				✓										YES
31	BH31	0-0.1	24.08.2022	DSG				✓										YES
32	BH32	0-0.1	24.08.2022	DSG				✓										YES
33	BH33	0-0.1	24.08.2022	DSG				✓										YES
34	BH34	0-0.1	24.08.2022	DSG				✓										YES
35	BH35	0-0.1	24.08.2022	DSG				✓										YES
36	BH36	0-0.1	24.08.2022	DSG				✓										YES
37	BH37	0-0.1	24.08.2022	DSG				✓										YES
38	BH38	0-0.1	24.08.2022	DSG				✓										YES
39	BH39	0-0.1	24.08.2022	DSG				✓										YES
40	BH40	0-0.1	24.08.2022	DSG				✓										YES

25 AUG 2022

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			25/8/22 4:30

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass jar)	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

@ mole H^+/tonne

AARGUS PTY LTD

Laboratory Test Request / Chain of Custody Record

46 Smithfield Road
Smithfield NSW 2164

P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038

Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

TO:	ASET - Australian Safer Environment & Technology Pty Ltd, Sydney Suite 710 / 90 George Street PO Box 1644 HORNSBY, NSW 2077 HORNSBY WESTFIELD NSW 1635	Sampling Date:	23.08.2022 AND 24.08.2022
		Sampled By:	SK
		Project Manager:	MK
PH:	02 9987 2183	FAX:	02 9987 2151
ATTN:	Samples Receipt	EMAIL	aset@bigpond.net.au

Job No:	ES8561
Project:	DSI
Location:	HUNTERS HILL

Results required by: STANDARD

	Sampling details			Sample type														
	Location	Depth (m)	Date	Soil Samples			Asbestos presence/absence	Asbestos %w/w										KEEP SAMPLE?
41	BH41	0-0.1	24.08.2022	DSP				✓										YES
42	BH42	0-0.1	24.08.2022	DSP				✓										YES
43	BH43	0-0.1	24.08.2022	DSP				✓										YES
44	BH44	0-0.1	24.08.2022	DSP				✓										YES
45	BH45	0-0.1	24.08.2022	DSP				✓										YES
46	BH46	0-0.1	24.08.2022	DSP				✓										YES
47	BH47	0-0.1	24.08.2022	DSP				✓										YES
48	BH48	0-0.1	24.08.2022	DSP				✓										YES
49	BH49	0-0.1	24.08.2022	DSP				✓										YES
50	BH50	0-0.1	24.08.2022	DSP				✓										YES
51	BH51	0-0.1	24.08.2022	DSP				✓										YES
52	BH52	0-0.1	24.08.2022	DSP				✓										YES
53	DUPLICATE D1	-	23.08.2022	DSP				✓										YES
54	DUPLICATE D2	-	24.08.2022	DSP				✓										YES
55	DUPLICATE D3	-	24.08.2022	DSP				✓										YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022			25/8/22 4:30

25 AUG 2022

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass jar)	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

@ mole H^+/tonne

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2230448**	Page	: 1 of 7
Client	: **AARGUS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR MARK KELLY	Contact	: Customer Services ES
Address	: 46 Smithfield Rd Smithfield	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 1300137038	Telephone	: +61-2-8784 8555
Project	: ES8561 DSI	Date Samples Received	: 25-Aug-2022 17:59
Order number	: ----	Date Analysis Commenced	: 29-Aug-2022
C-O-C number	: ----	Issue Date	: 20-Sep-2022 13:53
Sampler	: SK		
Site	: HUNTERS HILL		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SS1	SS2	SS3	----	----
			Sampling date / time	23-Aug-2022 00:00	24-Aug-2022 00:00	24-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2230448-001	ES2230448-002	ES2230448-003	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**27.0**	**30.4**	**17.8**	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	----	----
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	**No**	**No**	----	----
Sample weight (dry)	----	0.01	g	**501**	**534**	**530**	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	**No**	**No**	**No**	----	----
Organic Fibre	----	0.1	g/kg	**No**	**No**	**No**	----	----
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g	<0.1	<0.1	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	<0.01	<0.01	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg	**0.501**	**0.534**	**0.530**	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	**13**	**8**	**14**	----	----
Copper	7440-50-8	5	mg/kg	**35**	**20**	**25**	----	----
Lead	7439-92-1	5	mg/kg	**70**	**29**	**27**	----	----
Nickel	7440-02-0	2	mg/kg	**4**	**4**	**15**	----	----
Zinc	7440-66-6	5	mg/kg	**120**	**55**	**100**	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SS1	SS2	SS3	----	----
				Sampling date / time	23-Aug-2022 00:00	24-Aug-2022 00:00	24-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2230448-001	ES2230448-002	ES2230448-003	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SS1	SS2	SS3	----	----
			Sampling date / time	23-Aug-2022 00:00	24-Aug-2022 00:00	24-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2230448-001	ES2230448-002	ES2230448-003	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg	----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	<50	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg	----	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	----	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	----	----	<1	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**91.2**	**68.2**	**62.9**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SS1	SS2	SS3	----	----
				Sampling date / time	23-Aug-2022 00:00	24-Aug-2022 00:00	24-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2230448-001	ES2230448-002	ES2230448-003	--------	--------
					Result	Result	Result	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		108	85.4	70.5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	68.2	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	76.2	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	78.8	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	84.2	----	----
Anthracene-d10	1719-06-8	0.5	%		----	----	83.0	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	82.4	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	88.9	----	----
Toluene-D8	2037-26-5	0.2	%		----	----	83.8	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	86.7	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SS1 - 23-Aug-2022 00:00	Soil sample.
EA200: Description	SS2 - 24-Aug-2022 00:00	Soil sample.
EA200: Description	SS3 - 24-Aug-2022 00:00	Soil sample.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200N: Asbestos Quantification (non-NATA)

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

QUALITY CONTROL REPORT

Work Order	: **ES2230448**	Page	: 1 of 8
Client	: **AARGUS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR MARK KELLY	Contact	: Customer Services ES
Address	: 46 Smithfield Rd Smithfield	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 1300137038	Telephone	: +61-2-8784 8555
Project	: ES8561 DSI	Date Samples Received	: 25-Aug-2022
Order number	: ----	Date Analysis Commenced	: 29-Aug-2022
C-O-C number	: ----	Issue Date	: 20-Sep-2022
Sampler	: SK		
Site	: HUNTERS HILL		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4548944)									
ES2230380-062	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	5	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES2230448-003	SS3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	11	24.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	15	12	17.7	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	26	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	27	31	15.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	100	103	2.8	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4548952)									
ES2230380-064	Anonymous	EA055: Moisture Content	----	0.1	%	15.0	14.8	1.0	0% - 50%
ES2230494-003	Anonymous	EA055: Moisture Content	----	0.1	%	5.4	6.2	14.7	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4548945)									
ES2230380-062	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2230448-003	SS3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4544165)									
ES2230436-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4544165) - continued									
ES2230436-001	Anonymous	EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4544163)									
ES2230436-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4544164)									
ES2230436-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4547618)									
ES2230436-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2230512-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4544164)									
ES2230436-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4547618)									
ES2230436-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2230512-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 4547618)									
ES2230436-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	0.8	0.7	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2230512-004	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4548944)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	108	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	104	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	114	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	110	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	106	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	106	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	95.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4548945)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	102	70.0	125
EP068A: Organochlorine Pesticides (OC) (QCLot: 4544165)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	86.8	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	84.2	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	85.1	54.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4544163)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	89.7	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4544163) - continued								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	100	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	102	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.3	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	96.2	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	99.0	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	97.6	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.3	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.1	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.2	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	91.6	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	91.1	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	90.5	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4544164)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	88.3	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	87.1	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	87.4	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4547618)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	72.0	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4544164)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	89.0	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	86.3	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	91.3	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4547618)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	72.5	68.4	128
EP080: BTEXN (QCLot: 4547618)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	77.0	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	80.5	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.8	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	78.0	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	82.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.8	63.0	119

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4548944)							
ES2230380-062	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	101	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	103	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	104	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4548945)							
ES2230380-062	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	103	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4544165)							
ES2230436-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	81.7	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	74.2	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	85.3	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	107	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	71.9	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	79.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4544163)							
ES2230436-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.4	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4544164)							
ES2230436-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	128	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	115	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	120	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4547618)							
ES2230436-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	75.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4544164)							
ES2230436-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	108	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	117	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	122	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4547618)							
ES2230436-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	78.3	70.0	130
EP080: BTEXN (QCLot: 4547618)							
ES2230436-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	74.2	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	77.1	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4547618) - continued							
ES2230436-001	Anonymous	EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	79.9	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.0	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	82.7	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2230448**	Page	: 1 of 6
Client	: **AARGUS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR MARK KELLY	Telephone	: +61-2-8784 8555
Project	: ES8561 DSI	Date Samples Received	: 25-Aug-2022
Site	: HUNTERS HILL	Issue Date	: 20-Sep-2022
Sampler	: SK	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
SS1	**23-Aug-2022**	**----**	----	----	**30-Aug-2022**	06-Sep-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
SS2, SS3	**24-Aug-2022**	**----**	----	----	**30-Aug-2022**	07-Sep-2022	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SS1	**23-Aug-2022**	**----**	----	----	**29-Aug-2022**	19-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SS2, SS3	**24-Aug-2022**	**----**	----	----	**29-Aug-2022**	20-Feb-2023	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SS1	**23-Aug-2022**	**----**	----	----	**29-Aug-2022**	19-Feb-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SS2, SS3	**24-Aug-2022**	**----**	----	----	**29-Aug-2022**	20-Feb-2023	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
SS1	**23-Aug-2022**	**31-Aug-2022**	19-Feb-2023	✓	**01-Sep-2022**	19-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG005T)							
SS2, SS3	**24-Aug-2022**	**31-Aug-2022**	20-Feb-2023	✓	**01-Sep-2022**	20-Feb-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
SS1	**23-Aug-2022**	**31-Aug-2022**	20-Sep-2022	✓	**02-Sep-2022**	20-Sep-2022	✓
Soil Glass Jar - Unpreserved (EG035T)							
SS2, SS3	**24-Aug-2022**	**31-Aug-2022**	21-Sep-2022	✓	**02-Sep-2022**	21-Sep-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
SS1	**23-Aug-2022**	**31-Aug-2022**	06-Sep-2022	✓	**01-Sep-2022**	10-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP068)							
SS2, SS3	**24-Aug-2022**	**31-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	10-Oct-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SS3	**24-Aug-2022**	**31-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	10-Oct-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
SS3	**24-Aug-2022**	**29-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	07-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
SS3	**24-Aug-2022**	**31-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	10-Oct-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
SS3	**24-Aug-2022**	**29-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	07-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
SS3	**24-Aug-2022**	**31-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	10-Oct-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
SS3	**24-Aug-2022**	**29-Aug-2022**	07-Sep-2022	✓	**01-Sep-2022**	07-Sep-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM with Confirmation of Identification by AS 4964 - Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Environmental Division
Sydney
Work Order Reference
ES2230448

Telephone : +61-2-8784 8555

UPDATED COC

AARGUS PTY LTD

46 Smithfield Road
Smithfield NSW 2164
P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038
Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

Laboratory Test Request / Chain of Custody Record

TO: ALS (Australian Laboratory Services) | Environmental
277 - 289 Woodpark Road
SMITHFIELD, NSW 2164

PH: 02 8784 8555 FAX: 02 8784 8500
ATTN: Samples Receipt

Sampling Date: 23.08.2022 AND 24.08.2022
Sampled By: SK
Project Manager: MK
Job No: ES8561
Project: DSI
Location: Hunters Hill

Results required by: STANDARD

Sampling details			Sample type													
Location	Depth (m)	Date	Soil	Water (Filled Up)	Air	Metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn)	TPH	BTEX	PAH	OC				Asbestos %w/w	Analysis Suite(s)	KEEP SAMPLE?
SS1	-	23.08.2022	DSG,DSP			✓				✓				✓		YES
SS2	-	24.08.2022	DSG,DSP			✓				✓				✓		YES
SS3	-	24.08.2022	DSG,DSP			✓	✓	✓	✓	✓				✓	S26	YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022	Jack Cutten		25/08/22 1759

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass j:	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

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Environmental Division
Sydney
Work Order Reference
ES2230448

Telephone : +61-2-8784 8555

UPDATED COC

AARGUS PTY LTD

46 Smithfield Road
Smithfield NSW 2164

P O Box 398 Tel: 1300 137 038
DRUMMOYNE NSW 1470 Fax: 1300 136 038

Email reports: admin@aargus.net; cynthia@aargus.net; divyansh@aargus.net; sagar@aargus.net; mark.kelly@aargus.net
Email invoices: anika@aargus.net; admin@aargus.net; cynthia@aargus.net; mark.kelly@aargus.net

Laboratory Test Request / Chain of Custody Record

TO: ALS (Australian Laboratory Services) | Environmental
277 - 289 Woodpark Road
SMITHFIELD, NSW 2164

PH: 02 8784 8555 FAX: 02 8784 8500
ATTN: Samples Receipt

Sampling Date: 23.08.2022 AND 24.08.2022
Job No: ES8561
Sampled By: SK
Project: DSI
Project Manager: MK
Location: Hunters Hill

Results required by: STANDARD

Sampling details			Sample type												
Location	Depth (m)	Date	Soil	Water (Filled Up)	Air	Metals (As, Cd, Cr, Cu, Hg, Pb, Ni, Zn)	TPH	BTEX	PAH	OC				Asbestos %w/w	Analysis Suite(s)	KEEP SAMPLE?
SS1	-	23.08.2022	DSG,DSP			✓				✓				✓		YES
SS2	-	24.08.2022	DSG,DSP			✓				✓				✓		YES
SS3	-	24.08.2022	DSG,DSP			✓	✓	✓	✓	✓				✓	S26	YES

Relinquished by			Received by		
Name	Signature	Date	Name	Signature	Date
SAGAR	SK	25.08.2022	Jack Clifton		25/08/22 1759

Legend:

WG	Water sample, glass bottle	USG	Undisturbed soil sample (glass j:	DSP	Disturbed soil sample (small plastic bag)
WP	Water sample, plastic bottle	DSG	Disturbed soil sample (glass jar)	✓	Test required
GV	Glass vial	OTH	Other	ACAN	Air sample, canister

@ mole H^+/tonne

Subcon / Forward Lab / Split WO
Lab / Analysis: ALS - Newcastle
Organised By Date: Asbestos
Relinquished By Date: #1-3
Consote Courier:
WO No:
Attach By PO Internal Sheet:

APPENDIX K

SUMMARY OF RESULTS

Aargus

TABLE 1-1
SCHEDULE OF LABORATORY TESTING

Analyte / Analyte Group Sample	Depth (m)	TYPE	SAMPLING DATE	DUPLICATE	SPLIT	MET-8	TPH & BTEX	PAH	OC	ASBESTOS	pH, CEC
BH1	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH2	0-0.1	T	23.08.2022			✔			✔	✔	
BH3	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH4	0-0.1	T	23.08.2022			✔			✔	✔	
BH4	0.3-0.4	N	23.08.2022			✔				✔	✔
BH5	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH6	0-0.1	T	24.08.2022			✔			✔	✔	
BH7	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH8	0-0.1	T	23.08.2022	D1	SS1	✔			✔	✔	
BH8	0.5-0.6	N	23.08.2022			✔				✔	✔
BH9	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH10	0-0.1	T	24.08.2022			✔			✔	✔	
BH11	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH12	0-0.1	T	24.08.2022			✔			✔	✔	
BH13	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH14	0-0.1	T	24.08.2022			✔			✔	✔	
BH15	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH16	0-0.1	T	23.08.2022			✔			✔	✔	
BH17	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH17	0.5-0.6	N	23.08.2022			✔				✔	✔
BH18	0-0.1	T	23.08.2022			✔				✔	

Notes

MET-8: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc
OC : Organochlorine Pesticides
PAH: Polycyclic Aromatic Hydrocarbons
TPH: Total Petroleum Hydrcarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Xylene
F,T,N: Fill, Topsoil, Natural

TABLE 1-2
SCHEDULE OF LABORATORY TESTING

Analyte / Analyte Group Sample	Depth (m)	TYPE	SAMPLING DATE	DUPLICATE	SPLIT	MET-8	TPH & BTEX	PAH	OC	ASBESTOS	pH, CEC
BH19	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH20	0-0.1	T	23.08.2022			✔			✔	✔	
BH21	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH22	0-0.1	T	24.08.2022			✔			✔	✔	
BH23	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH24	0-0.1	T	23.08.2022			✔			✔	✔	
BH25	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH26	0-0.1	T	23.08.2022			✔			✔	✔	
BH27	0-0.1	T	23.08.2022			✔	✔	✔	✔	✔	
BH27	0.4-0.5	N	23.08.2022			✔				✔	✔
BH28	0-0.1	T	23.08.2022			✔			✔	✔	
BH29	0-0.1	T	24.08.2022			✔			✔	✔	
BH29	0.6-0.7	N	24.08.2022			✔				✔	✔
BH30	0-0.1	T	24.08.2022	D2	SS2	✔			✔	✔	
BH31	0-0.1	T	24.08.2022			✔			✔	✔	
BH32	0-0.1	T	24.08.2022			✔			✔	✔	
BH33	0-0.1	T	24.08.2022			✔			✔	✔	
BH34	0-0.1	T	24.08.2022			✔			✔	✔	
BH34	0.5-0.6	N	24.08.2022			✔				✔	✔
BH35	0-0.1	T	24.08.2022			✔			✔	✔	

Notes

MET-8: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc
OC : Organochlorine Pesticides
PAH: Polycyclic Aromatic Hydrocarbons
TPH: Total Petroleum Hydrcarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Xylene
F,T,N: Fill, Topsoil, Natural

TABLE 1-3
SCHEDULE OF LABORATORY TESTING

Analyte / Analyte Group		TYPE	SAMPLING DATE	DUPLICATE	SPLIT	MET-8	TPH & BTEX	PAH	OC	ASBESTOS	pH, CEC
Sample	Depth (m)										
BH36	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH37	0-0.1	T	24.08.2022			✔			✔	✔	
BH38	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH39	0-0.1	T	24.08.2022	D3	SS3	✔	✔	✔	✔	✔	
BH40	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH41	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH42	0-0.1	T	24.08.2022			✔			✔	✔	
BH43	0-0.1	T	24.08.2022			✔			✔	✔	
BH44	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH45	0-0.1	T	24.08.2022			✔	✔	✔	✔	✔	
BH46	0-0.1	T	24.08.2022			✔			✔	✔	
BH46	0.4-0.5	N	24.08.2022			✔				✔	✔
BH47	0-0.1	T	24.08.2022			✔			✔	✔	
BH48	0-0.1	T	24.08.2022			✔			✔	✔	
BH49	0-0.1	T	24.08.2022			✔			✔	✔	
BH50	0-0.1	T	24.08.2022			✔			✔	✔	
BH50	0.5-0.6	N	24.08.2022			✔				✔	✔
BH51	0-0.1	T	24.08.2022			✔			✔	✔	
BH52	0-0.1	T	24.08.2022			✔			✔	✔	
										✔	

Notes

MET-8: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc
OC : Organochlorine Pesticides
PAH: Polycyclic Aromatic Hydrocarbons
TPH: Total Petroleum Hydrcarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Xylene
F,T,N: Fill, Topsoil, Natural

TABLE A1-1

HEAVY METALS TEST RESULTS FOR HILs & EILs

Analyte / Sample Location	Depth (m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD g	MERCURY	NICKEL	ZINC
BH1	0-0.1	4.2	< 0.4	12	22	92	< 0.1	8.5	58
BH2	0-0.1	3.3	< 0.4	9.4	16	85	< 0.1	6.5	56
BH3	0-0.1	4.8	< 0.4	13	20	200	< 0.1	< 5	80
BH4	0-0.1	3.2	< 0.4	11	14	80	< 0.1	< 5	53
BH4	0.3-0.4	9.2	< 0.4	33	< 5	15	< 0.1	< 5	6.6
BH5	0-0.1	3.5	< 0.4	6.7	9.2	25	< 0.1	< 5	46
BH6	0-0.1	3.5	< 0.4	6.3	8	23	< 0.1	< 5	42
BH7	0-0.1	9.6	< 0.4	29	10	37	< 0.1	< 5	33
BH8	0-0.1	3	< 0.4	9.6	27	260	< 0.1	< 5	86
BH8	0.5-0.6	8.4	< 0.4	23	8.6	33	< 0.1	< 5	23
BH9	0-0.1	3.9	< 0.4	18	11	56	< 0.1	< 5	46
BH10	0-0.1	14	< 0.4	33	12	67	< 0.1	< 5	48
BH11	0-0.1	3.1	< 0.4	8.4	11	46	< 0.1	< 5	46
BH12	0-0.1	2.3	< 0.4	6.7	18	54	< 0.1	< 5	59
BH13	0-0.1	4.5	< 0.4	14	14	92	< 0.1	< 5	89
BH14	0-0.1	5	< 0.4	15	15	100	< 0.1	< 5	93
BH15	0-0.1	5.3	< 0.4	16	7.7	30	< 0.1	< 5	31
BH16	0-0.1	3	< 0.4	12	9.9	38	< 0.1	< 5	40
BH17	0-0.1	4.3	< 0.4	13	5.6	27	< 0.1	< 5	21
BH17	0.5-0.6	7.3	< 0.4	30	< 5	20	< 0.1	< 5	14
BH18	0-0.1	2.9	< 0.4	12	17	57	< 0.1	7.2	59
Practical Quantitation Limits (PQL)		5	0.4	5	5	5	0.1	5	5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)									
Health Investigation Levels (HIL) - Table 1A (1)									
HIL A [a]		100	20	100	6000	300	40[e] / 10[f]	400	7400
HIL B [b]		500	150	500	30,000	1,200	120[e] / 30[f]	1200	60,000
HIL C [c]		300	90	300	17,000	600	80[e] / 13[f]	1200	30,000
HIL D [d]		3000	900	3600	240,000	1,500	730[e] / 180[f]	6000	400,000
Ecological Investigation Levels (EIL) - Table 1B (5)									
Areas of ecological significance		40[h]							
Urban residential and public open space [i]		100[h]			100[j]	1100[j]		35[j]	190[j]
Commercial and industrial		160[h]							

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

f: Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

g: Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

h: Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

i: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

j: Site derived EILs as per Table B3

TABLE A1-2

HEAVY METALS TEST RESULTS FOR HILs & EILs

Analyte / Sample Location	Depth (m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD g	MERCURY	NICKEL	ZINC
BH19	0-0.1	2.9	< 0.4	8.5	8.7	29	< 0.1	< 5	39
BH20	0-0.1	4.6	< 0.4	13	5.4	21	< 0.1	< 5	20
BH21	0-0.1	3.3	< 0.4	13	32	46	0.1	7.9	120
BH22	0-0.1	3.4	< 0.4	13	32	52	0.1	6.4	120
BH23	0-0.1	7	< 0.4	24	13	90	< 0.1	< 5	52
BH24	0-0.1	3.7	< 0.4	16	13	86	< 0.1	< 5	53
BH25	0-0.1	4.8	< 0.4	12	21	81	< 0.1	< 5	53
BH26	0-0.1	8.8	< 0.4	23	17	78	< 0.1	< 5	48
BH27	0-0.1	6.1	< 0.4	18	14	130	< 0.1	< 5	95
BH27	0.4-0.5	15	< 0.4	30	9.2	120	< 0.1	< 5	46
BH28	0-0.1	5.7	< 0.4	22	13	45	< 0.1	16	87
BH29	0-0.1	2.5	< 0.4	7.5	12	27	< 0.1	< 5	45
BH29	0.6-0.7	6.6	< 0.4	30	< 5	14	< 0.1	< 5	9.9
BH30	0-0.1	4.8	< 0.4	11	14	30	< 0.1	< 5	47
BH31	0-0.1	< 2	< 0.4	5.8	13	25	< 0.1	< 5	45
BH32	0-0.1	4.5	< 0.4	12	15	26	< 0.1	< 5	50
BH33	0-0.1	3.2	< 0.4	8.6	15	27	< 0.1	< 5	47
BH34	0-0.1	3.2	< 0.4	9	8.7	34	< 0.1	< 5	39
BH34	0.5-0.6	12	< 0.4	44	< 5	13	< 0.1	< 5	7.3
BH35	0-0.1	4.7	3.1	27	17	97	< 0.1	< 5	100
Practical Quantitation Limits (PQL)		5	0.4	5	5	5	0.1	5	5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)									
Health Investigation Levels (HIL) - Table 1A (1)									
HIL A [a]		100	20	100	6000	300	40[e] / 10[f]	400	7400
HIL B [b]		500	150	500	30,000	1,200	120[e] / 30[f]	1200	60,000
HIL C [c]		300	90	300	17,000	600	80[e] / 13[f]	1200	30,000
HIL D [d]		3000	900	3600	240,000	1,500	730[e] / 180[f]	6000	400,000
Ecological Investigation Levels (EIL) - Table 1B (5)									
Areas of ecological significance		40[h]							
Urban residential and public open space [i]		100[h]			100[j]	1100[j]		35[j]	190[j]
Commercial and industrial		160[h]							

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

f: Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

g: Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

h: Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

i: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

j: Site derived EILs as per Table B3

TABLE A1-3

HEAVY METALS TEST RESULTS FOR HILs & EILs

Analyte / Sample Location	Depth (m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD g	MERCURY	NICKEL	ZINC
BH36	0-0.1	2.3	1.2	8.1	17	74	< 0.1	< 5	60
BH37	0-0.1	2.3	1.8	8.7	15	84	< 0.1	< 5	74
BH38	0-0.1	8.2	< 0.4	10	12	17	< 0.1	7.2	36
BH39	0-0.1	3.3	< 0.4	10	21	23	< 0.1	11	89
BH40	0-0.1	4	< 0.4	14	37	36	0.1	11	120
BH41	0-0.1	3.4	< 0.4	12	23	24	< 0.1	6.9	55
BH42	0-0.1	3.6	< 0.4	13	25	27	< 0.1	8.7	54
BH43	0-0.1	3.9	< 0.4	13	21	33	< 0.1	11	140
BH44	0-0.1	10	< 0.4	21	20	36	< 0.1	14	56
BH45	0-0.1	10	< 0.4	12	12	18	< 0.1	8.3	43
BH46	0-0.1	4.2	< 0.4	16	20	30	< 0.1	12	82
BH46	0.4-0.5	5.8	< 0.4	17	6.3	40	< 0.1	< 5	73
BH47	0-0.1	4.2	< 0.4	16	18	29	< 0.1	11	100
BH48	0-0.1	4.5	< 0.4	16	27	30	0.2	7.9	60
BH49	0-0.1	4.2	< 0.4	14	18	31	< 0.1	11	100
BH50	0-0.1	3.4	< 0.4	10	19	29	< 0.1	9.9	72
BH50	0.5-0.6	5	< 0.4	15	13	63	0.1	6	94
BH51	0-0.1	5.2	< 0.4	14	17	42	< 0.1	9.5	110
BH52	0-0.1	7.2	< 0.4	19	18	36	< 0.1	9.2	100
D1	-	3.2	< 0.4	11	31	68	< 0.1	< 5	100
D2	-	2.5	< 0.4	6.7	15	22	< 0.1	< 5	46
D3	-	2.8	< 0.4	8.3	19	22	< 0.1	9.5	73
SS1	-	<5	<1	13	35	70	<0.1	4	120
SS2	-	<5	<1	8	20	29	<0.1	4	55
SS3	-	<5	<1	14	25	27	<0.1	15	100
Practical Quantitation Limits (PQL)		5	0.4	5	5	5	0.1	5	5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)									
Health Investigation Levels (HIL) - Table 1A (1)									
HIL A [a]		100	20	100	6000	300	40[e] / 10[f]	400	7400
HIL B [b]		500	150	500	30,000	1,200	120[e] / 30[f]	1200	60,000
HIL C [c]		300	90	300	17,000	600	80[e] / 13[f]	1200	30,000
HIL D [d]		3000	900	3600	240,000	1,500	730[e] / 180[f]	6000	400,000
Ecological Investigation Levels (EIL) - Table 1B (5)									
Areas of ecological significance		40[h]							
Urban residential and public open space [i]		100[h]			100[j]	1100[j]		35[j]	190[j]
Commercial and industrial		160[h]							

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

f: Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

g: Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

h: Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

i: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

j: Site derived EILs as per Table B3

TABLE A2

CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS FOR THE SOIL PROPERTIES FOR EILs

Analyte / Sample Location	Depth (m)	CEC (cmol/kg)	pH (pH units)
BH4	0.3-0.4	4.9	6.8
BH8	0.5-0.6	1.8	5.7
BH17	0.5-0.6	3.1	5.7
BH27	0.4-0.5	4.5	6.1
BH29	0.6-0.7	2.9	5.2
BH34	0.5-0.6	3.9	5.3
BH46	0.4-0.5	10	7.1
BH50	0.5-0.6	12	7.2

TABLE A3
SITE DERIVED EILs

Analyte / Sample Location	Depth (m)	HEAVY METALS (mg/kg) COPPER	LEAD	NICKEL	ZINC
Added Contaminant Limit (ACL) [a]					
BH4	0.3-0.4	95	1100	30	230
BH8	0.5-0.6	95	1100	30	230
BH17	0.5-0.6	95	1100	30	230
BH27	0.4-0.5	95	1100	30	230
BH29	0.6-0.7	95	1100	30	180
BH34	0.5-0.6	95	1100	30	180
BH46	0.4-0.5	190	1100	170	400
BH50	0.5-0.6	190	1100	170	400
Ambient Background Concentration (ABC)					
BH4	0.3-0.4	5	15	5	6.6
BH8	0.5-0.6	8.6	33	5	23
BH17	0.5-0.6	5	20	5	14
BH27	0.4-0.5	9.2	120	5	46
BH29	0.6-0.7	5	14	5	9.9
BH34	0.5-0.6	8.7	34	5	39
BH46	0.4-0.5	6.3	40	5	73
BH50	0.5-0.6	13	63	6	94
Calculated EIL (ABC + ACL)					
BH4	0.3-0.4	100	1115	35	236.6
BH8	0.5-0.6	103.6	1133	35	253
BH17	0.5-0.6	100	1120	35	244
BH27	0.4-0.5	104.2	1220	35	276
BH29	0.6-0.7	100	1114	35	189.9
BH34	0.5-0.6	103.7	1134	35	219
BH46	0.4-0.5	196.3	1140	175	473
BH50	0.5-0.6	203	1163	176	494
FINAL SITE EIL AFTER ROUNDING [b]					
Site Derived EILs		***100***	***1100***	***35***	***190***

Notes a: The ACL for Cu may be determined by pH or CEC and the lower of the determined values should be selected for EIL calculation.

b: The following rounding rules are applicable to the EILs:

<1	to nearest 0.1
1 - <10	to nearest interger
10 - <100	to nearest 5
100 - <1000	to nearest 10
>1000	to nearest 100

TABLE B1-1
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND NAPHTHALENE TEST RESULTS FOR HSLs IN SAND

Analyte / Sample Location	Depth (m)	TRH (mg/kg)		BTEX (mg/kg)				
		F1 [a]	F2 [b]	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	NAPHTHALENE
BH3	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH5	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH7	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH11	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH15	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH17	0-0.1	< 20	55	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH21	0-0.1	< 20	60	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH23	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH25	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH27	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH38	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH39	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH40	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH41	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH44	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH45	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
D3	-	< 20	50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
SS3		<10	<50	<0.2	<0.5	<0.5	<0.5	<1
Practical Quantitation Limits (PQL)		20	50	0.1	0.1	0.1	0.3	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)								
Health Screening Levels (HSL) - Table 1A (3)								
HSL A & HSL B: Low-high density residential								
Source depth - 0m to <1m		45	110	0.5	160	55	40	3
Source depth - 1m to <2m		70	240	0.5	220	NL	60	NL
Source depth - 2m to <4m		110	440	0.5	310	NL	95	NL
Source depth - 4m +		200	NL	0.5	540	NL	170	NL
HSL C: recreational / open space								
Source depth - 0m to <1m		NL	NL	NL	NL	NL	NL	NL
Source depth - 1m to <2m		NL	NL	NL	NL	NL	NL	NL
Source depth - 2m to <4m		NL	NL	NL	NL	NL	NL	NL
Source depth - 4m +		NL	NL	NL	NL	NL	NL	NL
HSL D: Commercial / Industrial								
Source depth - 0m to <1m		260	NL	3	NL	NL	230	NL
Source depth - 1m to <2m		370	NL	3	NL	NL	NL	NL
Source depth - 2m to <4m		630	NL	3	NL	NL	NL	NL
Source depth - 4m +		NL	NL	3	NL	NL	NL	NL

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
NL: Not Limiting

TABLE B1-2
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND NAPHTHALENE TEST RESULTS FOR HSLs IN CLAY

Analyte / Sample Location	Depth (m)	TRH (mg/kg) F1 [a]	TRH (mg/kg) F2 [b]	BTEX (mg/kg) BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	NAPHTHALENE
BH1	0-0.1	<20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH9	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH13	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH19	0-0.1	< 20	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
Practical Quantitation Limits (PQL)		20	50	0.1	0.1	0.1	0.3	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)								
Health Screening Levels (HSL) - Table 1A (3)								
HSL A & HSL B: Low-high density residential								
Source depth - 0m to <1m		50	280	0.7	480	NL	110	5
Source depth - 1m to <2m		90	NL	1	NL	NL	310	NL
Source depth - 2m to <4m		150	NL	2	NL	NL	NL	NL
Source depth - 4m +		290	NL	3	NL	NL	NL	NL
HSL C: recreational / open space								
Source depth - 0m to <1m		NL	NL	NL	NL	NL	NL	NL
Source depth - 1m to <2m		NL	NL	NL	NL	NL	NL	NL
Source depth - 2m to <4m		NL	NL	NL	NL	NL	NL	NL
Source depth - 4m +		NL	NL	NL	NL	NL	NL	NL
HSL D: Commercial / Industrial								
Source depth - 0m to <1m		310	NL	4	NL	NL	NL	NL
Source depth - 1m to <2m		480	NL	6	NL	NL	NL	NL
Source depth - 2m to <4m		NL	NL	9	NL	NL	NL	NL
Source depth - 4m +		NL	NL	20	NL	NL	NL	NL

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
NL: Not Limiting

TABLE B2-1
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND BENZO(a)PYRENE TEST RESULTS
ESLs FOR COARSE GRAINED SOIL TEXTURE

Analyte / Sample Location	Depth (m)	TRH (mg/kg)				BTEX (mg/kg)				PAH (mg/kg)
		F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [b]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	BENZO(a)PYRENE
BH3	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	0.6
BH5	0-0.1	< 20	< 50	240	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH7	0-0.1	< 20	< 50	120	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH11	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH15	0-0.1	< 20	< 50	250	100	< 0.1	< 0.1	< 0.1	< 0.3	0.7
BH17	0-0.1	< 20	55	**670**	180	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH21	0-0.1	< 20	60	**650**	160	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH23	0-0.1	< 20	< 50	240	130	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH25	0-0.1	< 20	< 50	110	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH27	0-0.1	< 20	< 50	210	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH38	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH39	0-0.1	< 20	< 50	**520**	160	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH40	0-0.1	< 20	< 50	220	100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH41	0-0.1	< 20	< 50	230	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH44	0-0.1	< 20	< 50	110	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH45	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
D3	-	< 20	50	**640**	190	< 0.1	< 0.1	< 0.1	< 0.3	0.5
SS3		<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
Practical Quantitation Limits (PQL)		20	50	100	100	0.1	0.1	0.1	0.3	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)										
Ecological Screening Levels (ESL) - Table 1B (6)										
Areas of ecological significance		125*	25*	-	-	8	10	1.5	10	0.7
Urban residential and public open space		180*	120*	300	2800	50	85	70	105	0.7
Commercial and industrial		215*	170*	1700	3300	75	135	165	180	1.4

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
*: ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.
"-": "-" indicates that insufficient data was available to derive a value.

TABLE B2-2
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND BENZO(a)PYRENE TEST RESULTS
ESLs FOR FINE GRAINED SOIL TEXTURE

Analyte / Sample Location	Depth (m)	TRH (mg/kg)				BTEX (mg/kg)				PAH (mg/kg)
		F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [b]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	BENZO(a)PYRENE
BH1	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH9	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH13	0-0.1	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
BH19	0-0.1	< 20	< 50	180	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5
Practical Quantitation Limits (PQL)		20	50	100	100	0.1	0.1	0.1	0.3	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)										
Ecological Screening Levels (ESL) - Table 1B (6)										
Areas of ecological significance		125*	25*	-	-	10	65	40	1.6	0.7
Urban residential and public open space		180*	120*	1300	5600	65	105	125	45	0.7
Commercial and industrial		215*	170*	2500	6600	95	135	185	95	1.4

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
*: ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.
"-": "-" indicates that insufficient data was available to derive a value.

TABLE B3-1
TOTAL RECOVERABLE HYDROCARBONS (TRH) TEST RESULTS
MANAGEMENT LIMITS FOR COARSE GRAINED SOIL TEXTURE

Analyte / Sample Location	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [a]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})
BH3	0-0.1	< 20	< 50	< 100	< 100
BH5	0-0.1	< 20	< 50	240	< 100
BH7	0-0.1	< 20	< 50	120	< 100
BH11	0-0.1	< 20	< 50	< 100	< 100
BH15	0-0.1	< 20	< 50	250	100
BH17	0-0.1	< 20	55	670	180
BH21	0-0.1	< 20	60	650	160
BH23	0-0.1	< 20	< 50	240	130
BH25	0-0.1	< 20	< 50	110	< 100
BH27	0-0.1	< 20	< 50	210	< 100
BH38	0-0.1	< 20	< 50	< 100	< 100
BH39	0-0.1	< 20	< 50	520	160
BH40	0-0.1	< 20	< 50	220	100
BH41	0-0.1	< 20	< 50	230	< 100
BH44	0-0.1	< 20	< 50	110	< 100
BH45	0-0.1	< 20	< 50	< 100	< 100
D3	-	< 20	50	640	190
SS3		<10	<50	<100	<100
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)					
Management Limits - Table 1B (7)					
Residential parkland and public open space		700	1000	2500	10,000
Commercial and industrial		700	1000	3500	10,000

Notes

a: Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

b: Management limits are applied after consideration of relevant ESLs and HSLs.

TABLE B3-2
TOTAL RECOVERABLE HYDROCARBONS (TRH) TEST RESULTS
MANAGEMENT LIMITS FOR FINE GRAINED SOIL TEXTURE

Analyte / Sample Location	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [a]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})
BH1	0-0.1	< 20	< 50	< 100	< 100
BH9	0-0.1	< 20	< 50	< 100	< 100
BH13	0-0.1	< 20	< 50	< 100	< 100
BH19	0-0.1	< 20	< 50	180	< 100
Practical Quantitation Limits (PQL)		20	50	100	100
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)					
Management Limits - Table 1B (7)					
Residential parkland and public open space		800	1000	3500	10,000
Commercial and industrial		800	1000	5000	10,000

Notes

a: Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

b: Management limits are applied after consideration of relevant ESLs and HSLs.

TABLE C1

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) AND ORGANOCHLORINE PESTICIDES (OCP)
TEST RESULTS FOR HILs, EILs & ESLs

Analyte / Sample Location	Depth (m)	PAH (mg/kg)				Organochlorine Pesticides (mg/kg)							
		Carcinogenic PAHs (as BaP TEQ) [e]	TOTAL PAHs [f]	BENZO(a)PYRENE	NAPHTHALENE	DDT + DDE + DDD	ALDRIN & DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR
BH1	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH2	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH3	0-0.1	1.3	6.9	0.6	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH4	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH5	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH6	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH7	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH8	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH9	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH10	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH11	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH12	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH13	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH14	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH15	0-0.1	1.5	14	0.7	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH16	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH17	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH19	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH20	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH21	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	0.06	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH22	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH23	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	2.5	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH24	0-0.1	-	-	-	-	< 0.05	2.6	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH25	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH26	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH27	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH28	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH29	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH30	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Practical Quantitation Limits (PQL)		0.5	0.5	0.5	0.5	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)													
Health Investigation Levels (HIL) - Table 1A (1)													
HIL A [a]		3	300			240	6	50	270	10	6	10	300
HIL B [b]		4	400			600	10	90	400	20	10	15	500
HIL C [c]		3	300			400	10	70	340	20	10	10	400
HIL D [d]		40	4000			3600	45	530	2000	100	50	80	2500
Ecological Investigation Levels (EIL) - Table 1B (5)													
Areas of ecological significance					10 [g]	3 [g, k]							
Urban residential and public open space [h]					170 [g]	180 [g, k]							
Commercial and industrial					370 [g]	640 [g, k]							
Ecological Screening Levels (ESL) - Table 1B (6)													
Areas of ecological significance				0.7 [i]									
Urban residential and public open space				0.7 [i]									
Commercial and industrial				1.4 [i]									

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

f: Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet the relevant HSL.

g: Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.

h: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

i: For coarse and fine grained texture soils.

j: PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

k: For DDT only.

TABLE C2

POLYCYCLIC AROMATIC HYDROCARBONS (PAH), ORGANOCHLORINE PESTICIDES (OCP)
TEST RESULTS FOR HILs, EILs & ESLs

Analyte / Sample Location	Depth (m)	PAH (mg/kg)				Organochlorine Pesticides (mg/kg)							
		Carcinogenic PAHs (as BaP TEQ) [e]	TOTAL PAHs [f]	BENZO(a)PYRENE	NAPHTHALENE	DDT + DDE + DDD	ALDRIN & DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR
BH31	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH32	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH33	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH34	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH35	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH36	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH37	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH38	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH39	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH40	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH41	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH42	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH43	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH44	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH45	0-0.1	0.6	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH46	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH47	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH48	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH49	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH50	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH51	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH52	0-0.1	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
D1	-	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
D2	-	-	-	-	-	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
D3	-	1.3	5.8	0.5	< 0.5	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
SS1	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
SS2	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
SS3	-	0.6	<0.5	<0.5	<1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.2
Practical Quantitation Limits (PQL)		0.5	0.5		0.5	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)													
Health Investigation Levels (HIL) - Table 1A (1)													
HIL A [a]		3	300			240	6	50	270	10	6	10	300
HIL B [b]		4	400			600	10	90	400	20	10	15	500
HIL C [c]		3	300			400	10	70	340	20	10	10	400
HIL D [d]		40	4000			3600	45	530	2000	100	50	80	2500
Ecological Investigation Levels (EIL) - Table 1B (5)													
Areas of ecological significance					10 [g]	3 [g, k]							
Urban residential and public open space [h]					170 [g]	180 [g, k]							
Commercial and industrial					370 [g]	640 [g, k]							
Ecological Screening Levels (ESL) - Table 1B (6)													
Areas of ecological significance				0.7 [i]									
Urban residential and public open space				0.7 [i]									
Commercial and industrial				1.4 [i]									

Notes

a: Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

f: Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet the relevant HSL.

g: Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.

h: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

i: For coarse and fine grained texture soils.

j: PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

k: For DDT only.

TABLE D1-1
ASBESTOS TEST RESULTS

Analyte / Sample Location	Date Sampled	Depth (m)	Field Observations* Visible ACM detected (>7mm)	Material Sampled for Analysis	Laboratory Results Asbestos Present / Absent	Type of Asbestos Present	Laboratory Results Asbestos %w/w
BH1	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH2	30.05.2007	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH3	23.08.2022	0-0.1	No visible ACM observed	Soil	Chrysotile, Amosite and Crocidolite Asbestos detected	FA	0.00013%
BH4	**23.08.2022**	**0-0.1**	**No visible ACM observed**	**Soil**	**Chrysotile and Amosite Asbestos detected**	**FA**	**0.005%**
BH5	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH6	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH7	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH8	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH9	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH10	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH11	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH12	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH13	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH14	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH15	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH16	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		<0.001
BH17	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		
BH18	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected		
WA Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009							
National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B1							
%w/w asbestos for FA and AF							0.001%
%w/w asbestos for ACM - Residential use, childcare centres, preschools etc.							0.01%
%w/w asbestos for ACM - Residential, minimal soil access (fully sealed surfaces)							0.04%
%w/w asbestos for ACM - Parks, public open spaces, playing fields etc.							0.02%
%w/w asbestos for ACM - Commercial / Industrial							0.05%
All forms of Asbestos							No visible asbestos for surface soils

Note:
ACM = Asbestos Containing Materials >7mm x 7mm (visible by eye)
FA = Friable and Fibrous Asbestos Materials >7mm x 7mm and <7mm x 7mm
AF = Asbestos Fines <7mm x 7mm ACM including free fibres (visible by microscope only)
* Field Observations: All ACM observed are assumed to contain Asbestos until otherwise tested and recorded as such.
NT = Not Tested

TABLE D1-2
ASBESTOS TEST RESULTS

Analyte / Sample Location	Date Sampled	Depth (m)	Field Observations* Visible ACM detected (>7mm)	Material Sampled for Analysis	Laboratory Results Asbestos Present / Absent	Type of Asbestos Present	Laboratory Results Asbestos %w/w
BH19	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH20	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH21	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH22	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH23	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH24	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH25	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH26	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH27	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH27	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH28	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH29	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH29	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH30	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH31	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH32	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH33	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH34	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH35	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
WA Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009							
National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B1							
%w/w asbestos for FA and AF							0.001%
%w/w asbestos for ACM - Residential use, childcare centres, preschools etc.							0.01%
%w/w asbestos for ACM - Residential, minimal soil access (fully sealed surfaces)							0.04%
%w/w asbestos for ACM - Parks, public open spaces, playing fields etc.							0.02%
%w/w asbestos for ACM - Commercial / Industrial							0.05%
All forms of Asbestos							No visible asbestos for surface soils

Note:
ACM = Asbestos Containing Materials >7mm x 7mm (visible by eye)
FA = Friable and Fibrous Asbestos Materials >7mm x 7mm and <7mm x 7mm
AF = Asbestos Fines <7mm x 7mm ACM including free fibres (visible by microscope only)
* Field Observations: All ACM observed are assumed to contain Asbestos until otherwise tested and recorded as such.
NT = Not Tested

TABLE D1-3
ASBESTOS TEST RESULTS

Analyte / Sample Location	Date Sampled	Depth (m)	Field Observations* Visible ACM detected (>7mm)	Material Sampled for Analysis	Laboratory Results Asbestos Present / Absent	Type of Asbestos Present	Laboratory Results Asbestos %w/w
BH36	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH37	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH38	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH39	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH40	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH41	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH42	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH43	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH44	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH45	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH46	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH46	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH47	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH48	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH49	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH50	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH50	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH51	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
BH52	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
D1	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
D2	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
D3	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
SS1	23.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
SS2	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
SS2	24.08.2022	0-0.1	No visible ACM observed	Soil	No Asbestos detected	-	<0.001
WA Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009							
National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B1							
%w/w asbestos for FA and AF							0.001%
%w/w asbestos for ACM - Residential use, childcare centres, preschools etc.							0.01%
%w/w asbestos for ACM - Residential, minimal soil access (fully sealed surfaces)							0.04%
%w/w asbestos for ACM - Parks, public open spaces, playing fields etc.							0.02%
%w/w asbestos for ACM - Commercial / Industrial							0.05%
All forms of Asbestos							No visible asbestos for surface soils

Note:
ACM = Asbestos Containing Materials >7mm x 7mm (visible by eye)
FA = Friable and Fibrous Asbestos Materials >7mm x 7mm and <7mm x 7mm
AF = Asbestos Fines <7mm x 7mm ACM including free fibres (visible by microscope only)
* Field Observations: All ACM observed are assumed to contain Asbestos until otherwise tested and recorded as such.
NT = Not Tested

APPENDIX L

QA/QC ASSESSMENT

Aargus

APPENDIX M

IMPORTANT INFORMATION ABOUT YOUR ENVIROMNMENTAL REPORT

Aargus

APPENDIX N

SUMMARY OF RESULTS

Aargus

APPENDIX O

QA/QC ASSESSMENT

1 FIELD DATA QUALITY ASSESSMENT SOILS

1.1 Field Data Completeness

Field Sample Category - Soils	Number (Target)	Non-conformances	Number (Useable)	Overall Completeness %
Primary Samples	60	0	60	100%
Intra-Lab Duplicates	3	0	3	100%
Inter-Lab Duplicates	3	0	3	100%
Rinsate Blanks	2	0	2	100%
Trip Spikes	2	0	2	100%
Trip Blank	2	0	2	100%

Note: (*) – Overall Completeness is calculated as a percentage of the number of useable samples over the target number of samples required. The required percentage completeness is specified in the DQOs.

Field Consideration	Yes / No	Comments / Non-Conformances
Were all critical locations sampled?	Y	All critical locations were sampled as per the DQOs.
Were all samples collected from critical densities and depths?	Y	All samples were recovered as per DQOs.
Were the Standard Operating Procedures (SOPs) appropriate and complied with?	Y	The Aargus Fieldwork Protocols were appropriate and complied with.
Were the samplers adequately experienced?	Y	Sampling was conducted by Aargus Environmental Engineers, Divyansh Kumar and Sagar Koirala.
Was field documentation complete and correct?	Y	Field records can be found within Appendix G of the report.
Were an adequate number of intra-laboratory duplicate samples collected?	Y	100% of intra-laboratory duplicate samples required were collected, as shown in the table above.
Were an adequate number of inter-laboratory duplicate samples collected?	Y	100% of inter-laboratory duplicate samples required were collected as per the table above.
Were an adequate number of rinsate samples collected?	Y	100% of the rinsate samples required were collected as per the table above.
Were an adequate number of trip blanks collected?	Y	100% of trip blanks required were collected as per the table above.
Were an adequate number of trip spikes collected?	Y	100% of trip blanks required were collected as per the table above.

1.2 Field Data Comparability

Field Consideration	Yes / No	Comments / Non-Conformances
Were the same SOPs used on each occasion?	Y	Aargus Fieldwork Protocols were utilised throughout each sampling event.
Was all sampling undertaken by the same person?	Y	Sampling was undertaken by Divyansh Kumar and Sagar Koirala.
Could climatic conditions (such as temperature, rainfall, etc.) influence data comparability?	N	There was no precipitation on the date & time of sampling, which could affect the data comparability.
Were the same types of samples collected (filtered, size, fractions, etc.) for each media?	Y	Samples were collected in the same types of containers provided by the laboratory.
Was each field parameter measured using the same equipment?	Y	Headspace analysis was carried out using the same PID meter.
Was the same method and equipment used for the extraction of samples?	Y	Soil samples were recovered by the same method with the aid of a hand auger.

1.3 Field Data Representativeness

Laboratory Batch	Laboratory	Sample Medium	Container Breakages	Sample Preservation	Headspace / Temperature
917902	Eurofins Sydney	Soil and Water (rinsate)	Compliant	Compliant	Compliant
ES2230448	ALS Sydney	Soil	Compliant	Compliant	Compliant
ASET104019	ASET	Soil	Compliant	Compliant	Compliant

Field Consideration	Yes / No	Comments / Non-Conformances
Was appropriate media sampled in accordance with the DQOs?	Y	All soil samples were sampled in accordance with the DQOs.
Was all media identified in the DQOs sampled?	Y	All soil samples specified in the DQO were sampled.
Were all samples the samples appropriately handled?	Y	All samples collected were received by the laboratories intact.
Were all samples preserved appropriately?	Y	All samples collected were placed in ice boxes with ice bricks to preserve the samples. Where relevant, samples were stored in acid-preserved containers supplied by laboratories.

1.4 Field Data Precision

Field Consideration	Yes / No	Comments / Non-Conformances
Were the SOPs appropriate and complied with?	Y	The recovery of field duplicates was conducted in accordance with Aargus Fieldwork Protocols to allow for the assessment of field precision.

1.5 Field Data Accuracy

Field Consideration	Yes / No	Comments / Non-Conformances
Were the SOPs appropriate and complied with?	Y	The recovery of a trip blank and a spike sample was conducted in accordance with Aargus Fieldwork Protocols to allow for the assessment of field accuracy.

2 LABORATORY DATA QUALITY ASSESSMENT

2.1 Laboratory Data Completeness

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were all critical samples analysed according to the DQOs?	Y	All critical samples were analysed according to DQOs.
Were all analytes analysed according to the DQOs?	Y	All analytes were analysed according to DQOs.
Were the laboratory methods and PQLs appropriate?	Y	US EPA Analytical Methods were used. PQLs were below their respective assessment criteria.
Was sample documentation complete?	Y	The sample documentation was correctly completed on the COCs.
Were sample holding times complied with?	Y	All the samples were within holding time for soil samples.
Were an adequate number of laboratory duplicates analysed?	Y	An adequate number of laboratory duplicates were analysed for soil samples.
Were an adequate number of laboratory blank samples analysed?	Y	An adequate number of laboratory blank samples were analysed.
Were an adequate number of Laboratory Control Samples analysed?	Y	An adequate number of Laboratory Control Samples were analysed.
Were an adequate number of laboratory matrix spikes/duplicates analysed?	Y	An adequate number of Matrix spikes/duplicates were analysed.
Were an adequate number of surrogates analysed?	Y	An adequate number of surrogates were analysed.

2.2 Laboratory Data Comparability

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were the same analytical methods used for each analyte?	Y	All analytical methods used between laboratories were based on the USEPA/APHA methods.
Were the PQLs used for each analyte less than 20% of their respective assessment criteria?	Y	The PQLs for analytes in soil samples were below 20% of their respective assessment criteria.
Were the sample PQLs used for each analyte the same?	N	Sample PQLs were the same within each laboratory, but different between primary and secondary laboratories. However, the PQLs used were below the assessment criteria and hence will not affect the assessment outcome.
Were the same laboratories used for analyses of each contaminant type?	Y	Eurofins Sydney was the primary laboratory. ALS Sydney was the secondary laboratory, and ASET was used for asbestos analysis.

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were the units reported for each analyte the same?	Y	Analytical units of measurement for soil were mg/kg, %wt/wt and mg/L or µg/L for the rinsate sample.

2.3 Laboratory Data Representativeness

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were all samples analysed according to the DQOs?	Y	The majority of the samples were analysed according to the proposal.

2.4 Laboratory Data Precision

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were the RPDs of the field duplicates within control limits?	N	All field duplicate results were within the control limit, <50%, with the exception of D1 & SS1 for Lead, D2 for Arsenic, and D3 for B(a)P as TEQ, due to the nature of soil heterogeneity.
Were the RPDs of the laboratory duplicates within control limits?	N	Based on the laboratory's acceptance criteria, all RPDs of the laboratory duplicates were within control limits, with the exception of Arsenic. The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Note: Please refer to the tables attached at the end of this QA/QC assessment for calculations of the field RPDs.

2.5 Laboratory Data Accuracy

Laboratory Considerations	Yes / No	Comments / Non-Conformances
Were the rinsates free of contaminants?	Y	The concentrations of the analytes were below the PQLs, and the data set was considered to be adequately accurate.
Were the trip blanks free of contaminants?	Y	The test results for the trip blank samples, reported concentrations to be less than the PQLs, therefore cross-contamination has not occurred.
Were the laboratory blanks free of contaminants?	Y	Laboratory blanks were free of contaminants.
Were the surrogate spikes within control limits?	Y	Surrogate spikes were within control limits.
Were laboratory control samples within control limits?	Y	Laboratory control samples were within control limits.
Were matrix spike recoveries within control limits?	N	The matrix spike recoveries were within control limits, with exception of OCP. The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Were the trip spike recoveries within the control limits?	Y	The trip spike recoveries were within the control limits; therefore the data set was considered suitable for interpretation.

Note: Please refer to the tables attached at the end of this QA/QC assessment for tables showing the results of field blanks.

TABLE 1
DUPLICATE SAMPLE

ANALYTE	BH8 0-0.1m mg/kg	DUPLICATE D1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	3.0	3.2	6
Cadmium	< 0.4	< 0.4	-
Chromium	9.6	11	14
Copper	27	31	14
Lead	260	68	117
Mercury	< 0.1	< 0.1	-
Nickel	< 5	< 5	-
Zinc	86	100	15
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	< 0.05	-
Aldrin + Dieldrin	< 0.05	< 0.05	-
Chlordane	< 0.1	< 0.1	-
Endosulfan	< 0.05	< 0.05	-
Endrin	< 0.05	< 0.05	-
Heptachlor	< 0.05	< 0.05	-
HCB	< 0.05	< 0.05	-
Methoxychlor	< 0.05	< 0.05	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 2
DUPLICATE SAMPLE 2

ANALYTE	BH30 0-0.1m mg/kg	DUPLICATE D2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	4.8	2.5	63
Cadmium	< 0.4	< 0.4	-
Chromium	11	6.7	49
Copper	14	15	7
Lead	30	22	31
Mercury	< 0.1	< 0.1	-
Nickel	< 5	< 5	-
Zinc	47	46	2
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	< 0.05	-
Aldrin + Dieldrin	< 0.05	< 0.05	-
Chlordane	< 0.1	< 0.1	-
Endosulfan	< 0.05	< 0.05	-
Endrin	< 0.05	< 0.05	-
Heptachlor	< 0.05	< 0.05	-
HCB	< 0.05	< 0.05	-
Methoxychlor	< 0.05	< 0.05	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 3
DUPLICATE SAMPLE 3

ANALYTE	BH39 0-0.1m mg/kg	DUPLICATE D3 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	3.3	2.8	16
Cadmium	< 0.4	< 0.4	-
Chromium	10	8.3	19
Copper	21	19	10
Lead	23	22	4
Mercury	< 0.1	< 0.1	-
Nickel	11	9.5	15
Zinc	89	73	20
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C10	< 20	< 20	-
C10 - C16	< 50	50	-
C16 - C34	520	640	21
C34-C40	160	190	15
BTEX			
Naphthalene	< 0.5	< 0.5	
Benzene	< 0.1	< 0.1	-
Toluene	< 0.1	< 0.1	-
Ethyl Benzene	< 0.1	< 0.1	-
Total Xylenes	< 0.3	< 0.3	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
B(a)P as TEQ	0.6	1.3	74
Total PAH	< 0.5	5.8	-
Benzo(a)pyrene	< 0.5	0.5	-
Naphthalene	< 0.5	< 0.5	-
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	< 0.05	-
Aldrin + Dieldrin	< 0.05	< 0.05	-
Chlordane	< 0.1	< 0.1	-
Endosulfan	< 0.05	< 0.05	-
Endrin	< 0.05	< 0.05	-
Heptachlor	< 0.05	< 0.05	-
HCB	< 0.05	< 0.05	-
Methoxychlor	< 0.05	< 0.05	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 4
SPLIT SAMPLE

ANALYTE	BH8 0-0.1m mg/kg Eurofins SYDNEY	SPLIT SS1 mg/kg ALS SYDNEY	RELATIVE PERCENTAGE DIFFERENCE (RPD) %
HEAVY METALS			
Arsenic	3.0	<5	-
Cadmium	< 0.4	<1	-
Chromium	9.6	13	30
Copper	27	35	26
Lead	260	70	115
Mercury	< 0.1	<0.1	-
Nickel	< 5	4	-
Zinc	86	120	33
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	<0.05	-
Aldrin + Dieldrin	< 0.05	<0.05	-
Chlordane	< 0.1	<0.05	-
Endosulfan	< 0.05	<0.05	-
Endrin	< 0.05	<0.05	-
Heptachlor	< 0.05	<0.05	-
HCB	< 0.05	<0.05	-
Methoxychlor	< 0.05	<0.2	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 5
SPLIT SAMPLE 2

ANALYTE	BH30 0-0.1m mg/kg Eurofins SYDNEY	SPLIT SS2 mg/kg ALS SYDNEY	RELATIVE PERCENTAGE DIFFERENCE (RPD) %
HEAVY METALS			
Arsenic	4.8	<5	-
Cadmium	< 0.4	<1	-
Chromium	11	8	32
Copper	14	20	35
Lead	30	29	3
Mercury	< 0.1	<0.1	-
Nickel	< 5	4	-
Zinc	47	55	16
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	<0.05	-
Aldrin + Dieldrin	< 0.05	<0.05	-
Chlordane	< 0.1	<0.05	-
Endosulfan	< 0.05	<0.05	-
Endrin	< 0.05	<0.05	-
Heptachlor	< 0.05	<0.05	-
HCB	< 0.05	<0.05	-
Methoxychlor	< 0.05	<0.2	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 6
SPLIT SAMPLE 3

ANALYTE	BH39 0-0.1m mg/kg Eurofins SYDNEY	SPLIT SS3 mg/kg ALS SYDNEY	RELATIVE PERCENTAGE DIFFERENCE (RPD) %
HEAVY METALS			
Arsenic	3.3	<5	-
Cadmium	< 0.4	<1	-
Chromium	10	14	33
Copper	21	25	17
Lead	23	27	16
Mercury	< 0.1	<0.1	-
Nickel	11	15	31
Zinc	89	100	12
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C10	< 20	<10	-
C10 - C16	< 50	<50	-
C16 - C34	520	<100	-
C34-C40	160	<100	-
BTEX			
Naphthalene	< 0.5	< 1	
Benzene	< 0.1	<0.2	-
Toluene	< 0.1	<0.5	-
Ethyl Benzene	< 0.1	<0.5	-
Total Xylenes	< 0.3	<0.5	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
B(a)P as TEQ	0.6	0.6	0
Total PAH	< 0.5	<0.5	-
Benzo(a)pyrene	< 0.5	<0.5	-
Naphthalene	< 0.5	< 1	-
ORGANOCHLORINE PESTICIDES (OCP)			
DDD + DDE + DDT	< 0.05	<0.05	-
Aldrin + Dieldrin	< 0.05	<0.05	-
Chlordane	< 0.1	<0.05	-
Endosulfan	< 0.05	<0.05	-
Endrin	< 0.05	<0.05	-
Heptachlor	< 0.05	<0.05	-
HCB	< 0.05	<0.05	-
Methoxychlor	< 0.05	<0.2	-
Asbestos	<0.001%w/w	<0.001%w/w	-

TABLE 7
RINSATE SAMPLE

ANALYTE	Practical Quantitation Limits (PQL)	RINSATE R1 (µg/L) 23/08/2022
HEAVY METALS		
Arsenic	0.001	<0.001
Cadmium	0.0002	0.0002
Chromium	0.001	<0.001
Copper	0.001	<0.001
Mercury	0.0001	<0.0001
Nickel	0.001	<0.001
Lead	0.001	<0.001
Zinc	0.005	<0.005

TABLE 8
RINSATE SAMPLE 2

ANALYTE	Practical Quantitation Limits (PQL)	RINSATE R2 (µg/L) 24/08/2022
HEAVY METALS		
Arsenic	0.001	<0.001
Cadmium	0.0002	0.0002
Chromium	0.001	<0.001
Copper	0.001	<0.001
Mercury	0.0001	<0.0001
Nickel	0.001	<0.001
Lead	0.001	<0.001
Zinc	0.005	<0.005

TABLE 9
TRIP SPIKE SAMPLE

ANALYTE	TRIP SPIKE % 23/08/2022
TRH	
C6-C10	99
BTEX	
Naphthalene	100
Benzene	110
Toluene	110
Ethyl Benzene	100
o-Xylene	98
m&p-Xylenes	98

TABLE 10
TRIP SPIKE SAMPLE

ANALYTE	TRIP SPIKE % 24/08/2022
TRH	
C6-C10	93
BTEX	
Naphthalene	100
Benzene	99
Toluene	98
Ethyl Benzene	100
o-Xylene	91
m&p-Xylenes	93

TABLE 11
TRIP BLANKS SAMPLES

ANALYTE	TRIP BLANK (mg/kg) 23/08/2022	Practical Quantitation Limits (PQL)
TRH		
C6-C10	<20	20
BTEX		
Naphthalene	<0.5	0.5
Benzene	<0.1	0.1
Toluene	<0.1	0.1
Ethyl Benzene	<0.1	0.1
m&p-Xylenes	<0.2	0.2
o-Xylene	<0.1	0.1

TABLE 12
TRIP BLANKS SAMPLES (DAY 2)

ANALYTE	TRIP BLANK (mg/kg) 24/08/2022	Practical Quantitation Limits (PQL)
TRH		
C6-C10	<20	20
BTEX		
Naphthalene	<0.5	0.5
Benzene	<0.1	0.1
Toluene	<0.1	0.1
Ethyl Benzene	<0.1	0.1
m&p-Xylenes	<0.2	0.2
o-Xylene	<0.1	0.1

APPENDIX P

IMPORTANT INFORMATION ABOUT YOUR REPORT

Aargus

IMPORTANT INFORMATION ABOUT YOUR ENVIRONMENTAL SITE ASSESSMENT

These notes have been prepared by Aargus (Australia) Pty Ltd and its associated companies using guidelines prepared by ASFE (The Association) of Engineering Firms Practising in the Geo-sciences. They are offered to help you in the interpretation of your Environmental Site Assessment (ESA) reports.

REASONS FOR CONDUCTING AN ESA

ESA's are typically, though not exclusively, carried out in the following circumstances:

- as pre-acquisition assessments, on behalf of either purchaser or vender, when a property is to be sold;
- as pre-development assessments, when a property or area of land is to be redeveloped or have its use changed for example, from a factory to a residential subdivision;
- as pre-development assessments of greenfield sites, to establish "baseline" conditions and assess environmental, geological and hydrological constraints to the development of, for example, a landfill; and
- as audits of the environmental effects of an ongoing operation.

Each of these circumstances requires a specific approach to the assessment of soil and groundwater contamination. In all cases however, the objective is to identify and if possible quantify the risks that unrecognised **c**ontamination poses to the proposed activity. Such risks may be both financial, for example, cleanup costs or limitations on site use, and physical, for example, health risks to site users or the public.

THE LIMITATIONS OF AN ESA

Although the information provided by an ESA could reduce exposure to such risks, no ESA, however, diligently carried out can eliminate them. Even a rigorous professional assessment may fail to detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled.

AN ESA REPORT IS BASED ON A UNIQUE SET OF PROJECT SPECIFIC FACTORS

Your environmental report should not be used:

- when the nature of the proposed development is changed, for example, if a residential development is proposed instead of a commercial one;
- when the size or configuration of the proposed development is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership
- or for application to an adjacent site.

To help avoid costly problems, refer to your consultant to determine how any factors, which have changed subsequent to the date of the report, may affect its recommendations.

ESA "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site assessment identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to help minimise its impact. For this reason owners should retain the services of their consultants

through the development stage, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Natural processes and the activity of man change subsurface conditions. As an ESA report is based on conditions, which existed at the time of subsurface exploration, decisions should not be based on an ESA report whose adequacy may have been affected by time. Speak with the consultant to learn if additional tests are advisable.

ESA SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Every study and ESA report is prepared in response to a specific brief to meet the specific needs of specific individuals. A report prepared for a consulting civil engineer may not be adequate for a construction contractor, or even some other consulting civil engineer. Other persons should not use a report for any purpose, or by the client for a different purpose. No individual other than the client should apply a report even apparently for its intended purpose without first conferring with the consultant. No person should apply a report for any purpose other than that originally contemplated without first conferring with the consultant.

AN ESA REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when design professionals develop their plans based on misinterpretations of an ESA. To help avoid these problems, the environmental consultant should be retained to work with appropriate design professionals to explain relevant findings and to review the adequacy of their plans and specifications relative to contamination issues.

LOGS SHOULD NOT BE SEPARATED FROM THE ENGINEERING REPORT

Final borehole or test pit logs are developed by environmental scientists, engineers or geologists based upon their interpretation of field logs (assembled by site personnel) and laboratory evaluation of field samples. Only final logs customarily included in our reports. These logs should not under any circumstances be redrawn for inclusion in site remediation or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimise the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To reduce the likelihood of boring log misinterpretation, the complete report must be available to persons or organisations involved in the project, such as contractors, for their use. Those who o not provide such access may proceed under the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing all the available information to persons and organisations such as contractors helps prevent costly construction problems and the adversarial attitudes that may aggravate them to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because an ESA is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in transmittals. These are not exculpatory clauses designed to foist liabilities onto some other party. Rather, they are definitive clauses that identify where your consultant’s responsibilities begin and end. Their use helps all parties involved recognise their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your ESA report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.